ONLINE EDUCATION
A catalyst for Reforming Higher Education

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Education Specialist, eLearning
Commonwealth of Learning, Canada
THE PLAN

• CONTEXTS
• ONLINE EDUCATION
• DESIGNS AND TECHNOLOGIES
• ONLINE LEARNING MYTHS
• REFORMS FOR FUTURE
A Premise
What is Higher Education?

- University
- Research Centre
- College
A genuine higher education is unsettling; it is not meant to be a cosy experience. It is disturbing because, ultimately, the student comes to see that things could always be other than they are. A higher education experience is not complete unless the student realizes that, no matter how much effort is put in, or how much library research, there are no final answers.

- Barnett (1990)
Higher Education is...

- Quest for excellence
- Creativity
- Critical inquiry
- Exploration of truth
- Discovery
- Discussion, debate and dialogue
- Development
- Scholarship
Access: GER Status

One of the Largest Higher Education Systems in the World

- Universities: 10,725
- Colleges: 39,931
- Training Institutions: 993
One of the Largest Higher Education System in the World

<table>
<thead>
<tr>
<th>Number of Learners in Millions</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>37.4</td>
<td>India</td>
</tr>
<tr>
<td>40.02</td>
<td>China</td>
</tr>
<tr>
<td>19.6</td>
<td>Unites States</td>
</tr>
</tbody>
</table>
Cost of higher education in 2015

India: 503.1
China: 99.5
South Korea: 95.5
Japan: 61.3
Indonesia: 346.8

Source: https://www.ziuperspectives.economist.com/sites/default/files/EIU_Yidan%20prize%20forecast_Education%20to%202030.pdf
Cost of Higher Education (India, 2014)

General Education

INR 5,539

Professional Education

INR 72,720
Textbook Expenditure

Annual Expenditure
INR 3,654,419,020

Over 49.7 million USD per year
Quality of education

- Low employability of graduates
- Poor quality of teaching
- Weak governance
- Insufficient funding
- Complex regulatory norms

Source: https://www.brookings.edu/research/reviving-higher-education-in-india/
The fallacy of rankings

- Rural vs urban bias
- Availability of best teachers and students
- Funding support of research and innovations
- Create categories amongst institutions
- Question the parity of qualifications
Quality enhancement

**Inputs**
- Student and teacher recruitment
- Infrastructure and budget
- Organisational culture

**Processes**
- Fostering inquisitive minds
- Academic freedom and autonomy
- Relevant curriculum

**Outcomes**
- Impact on society
- Graduate employability and earnings
- Adding value to institutional reputation

India in top 10 countries for research productivity
Foreign student enrolment in India

47,427 Foreign students from 164 countries
National Education Policy 2020

- 50% GER by 2035
- NEFT to promote digital education
- Focus on equitable use of technology
- Suitable training and development to be effective online educators
National Education Policy 2020: Recommendations for Online Education

- Pilot studies on online education
- Invest on digital infrastructure
- Support online platforms for interactive teaching
- Digital repositories for content creation and dissemination
- Addressing digital divide

- Virtual labs for practical
- Training and incentives to teachers
- Develop online assessment and examination frameworks
- Promote **Blended Learning**
- Setting standards for content, technology and pedagogy of online learning
Access to technology

Internet Bandwidth

Global Speeds November 2020

**Mobile**
- **Global Average**
  - Download: 45.69 Mbps
  - Upload: 12.60 Mbps
  - Latency: 36 ms

**Fixed Broadband**
- **Global Average**
  - Download: 91.96 Mbps
  - Upload: 49.44 Mbps
  - Latency: 21 ms

**India November 2020**

**Mobile**
- Rank: 128
  - Download: 13.15 Mbps
  - Upload: 4.90 Mbps
  - Latency: 50 ms

**Fixed Broadband**
- Rank: 64
  - Download: 52.02 Mbps
  - Upload: 48.57 Mbps
  - Latency: 18 ms

Sources: [https://www.speedtest.net/global-index/india](https://www.speedtest.net/global-index/india)
[https://www.speedtest.net/global-index](https://www.speedtest.net/global-index)
University of Hyderabad Experience: During COVID19

- 40% students indicated “unreliable connectivity”
- 30% worried about cost of data
- 18% can’t access online classes at all

... Are we ready for a change?
ONLINE EDUCATION
Emergency Remote Teaching vs. Online Learning
9 Steps to Online Learning

- Needs analysis
- Understanding the learners
- Organisational capacity
- Learning environment blueprint
- Preparing institutional capacities
- Material development
- Evaluation
- Promotion
- Maintenance and updating
Online learning is not video conferencing.
Synchronous Activities
- Video conference
- Online chat
- Live podcast (Radio)
- Live Television
- Polling, Presentations, etc.

Asynchronous Activities
- Discussion Forum
- Online reading
- Watching a video
- Listening to a recorded podcast
- Working on assignments
- Online quizzes
- Email
Need to focus more on continuous assessment than final year-end examination. Rethink weight of internal/continuous assessment and Final/External examination.
Swapping video for existing teaching methods led to small improvements in student learning ($g = 0.28$). Adding video to existing teaching led to strong learning benefits ($g = 0.80$).

Find, reuse and create
From Content to Course

Build interaction.

Encourage discussion.

Practice + Expert feedback necessary.
Convergence of Technology

- Face-to-Face Courses
- Blended Courses
- Distance/Online Courses
  - MOOC
  - Mobile learning

ICT integration in teaching and learning
Open and Distance Learning
TEL as Backbone of HE

- Access

Equity and Inclusion

- Training both students and teachers

Blended Strategy

- Appropriate mix for online and face-to-face

- Build student-student and student-teacher interaction

- Mix asynchronous and synchronous activities
Levels of Blending

Activity-Level

Course-Level

Programme-Level

Institutional-Level
## How much of blending?

<table>
<thead>
<tr>
<th>Proportion of Content Delivered Online</th>
<th>Type of Course</th>
<th>Typical Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
<td>Traditional</td>
<td>Course where no online technology used — content is delivered in writing or orally.</td>
</tr>
<tr>
<td>1 to 29%</td>
<td>Web Facilitated</td>
<td>Course that uses web-based technology to facilitate what is essentially a face-to-face course. May use a course management system (CMS) or web pages to post the syllabus and assignments.</td>
</tr>
<tr>
<td>30 to 79%</td>
<td>Blended/Hybrid</td>
<td>Course that blends online and face-to-face delivery. Substantial proportion of the content is delivered online, typically uses online discussions, and typically has a reduced number of face-to-face meetings.</td>
</tr>
<tr>
<td>80+%</td>
<td>Online</td>
<td>A course where most or all of the content is delivered online. Typically have no face-to-face meetings.</td>
</tr>
</tbody>
</table>

### Components of the blended course

<table>
<thead>
<tr>
<th>Proportions</th>
<th>Components</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online Components (50%)</td>
<td>Reading materials, resources</td>
</tr>
<tr>
<td></td>
<td>Forum discussions</td>
</tr>
<tr>
<td></td>
<td>Sample links</td>
</tr>
<tr>
<td></td>
<td>Traditional lectures</td>
</tr>
<tr>
<td>F2F Components (50%)</td>
<td>Group Work (cooperative learning tasks)</td>
</tr>
<tr>
<td></td>
<td>Group discussions</td>
</tr>
<tr>
<td></td>
<td>Expert seminars</td>
</tr>
</tbody>
</table>

A course is a course...

The strongest predictor of success is in previous academic performance (Dziuban, 2011). Historically, students who have done well in courses do well in any mode; a course is a course.

Source: Dziuban, C., & Moskal, P. (2011). A course is a course is a course: Factor invariance in student evaluation of online, blended and face-to-face learning environments, Internet and Higher Education, 14, 236–241
DESIGNS AND TECHNOLOGIES

Think Instruction, *before* Technology
# Online Technologies

<table>
<thead>
<tr>
<th>Interaction Methods</th>
<th>Learner-Content</th>
<th>Learner-Teacher</th>
<th>Learner-Learner</th>
</tr>
</thead>
<tbody>
<tr>
<td>One-Alone</td>
<td>Interactive web-pages, interactive video, simulation-based learning content, Quizzes and tests</td>
<td>E-mail, Chat,</td>
<td>Email, Chat</td>
</tr>
<tr>
<td>One-to-one</td>
<td>E-mail, Chat,</td>
<td>E-mail, Mailing lists, Discussion Forums, Blogs, Social Networks, Web conferences</td>
<td>E-mail, Mailing lists, Discussion Forums, Blogs, Social Networks,</td>
</tr>
<tr>
<td>One-to-many</td>
<td>E-mail, Mailing lists, Discussion Forums, Blogs, Social Networks, Web conferences</td>
<td>Group Chat, Discussion Forum, Blogs, Wikis, Social Networks, Web conferences</td>
<td>Group Chat, Discussion Forum, Blogs, Wikis, Social Networks</td>
</tr>
<tr>
<td>Many-to-many</td>
<td>Group Chat, Discussion Forum, Blogs, Wikis, Social Networks, Web conferences</td>
<td>Group Chat, Discussion Forum, Blogs, Wikis, Social Networks,</td>
<td></td>
</tr>
</tbody>
</table>
Advance technologies

- Artificial intelligence
- Blockchain?
- Chatbots
- Augmented Reality/Virtual Reality
- Microcredentials

- Learning analytics supported personalised learning
- Context specific support
- Experiential learning
# Gagne’s Nine Events of Instruction

<table>
<thead>
<tr>
<th>Gagne’s Nine Events of Instruction</th>
<th>Online technologies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gain attention</td>
<td>SMS alert, Social media, pop-ups, highlight balloons</td>
</tr>
<tr>
<td>Inform learners of objectives</td>
<td>Web page, LMS</td>
</tr>
<tr>
<td>Stimulate recall of prior learning</td>
<td>Prior learning quiz</td>
</tr>
<tr>
<td>Present the content</td>
<td>Video, PDF, HTML pages for reading</td>
</tr>
<tr>
<td>Provide “learning guidance”</td>
<td>Short tips via audio; discussion forum</td>
</tr>
<tr>
<td>Elicit performance (practice)</td>
<td>Simulation, drill and practice exercises</td>
</tr>
<tr>
<td>Provide feedback</td>
<td>One-to-one message, email</td>
</tr>
<tr>
<td>Assess performance</td>
<td>Assignments, quizzes</td>
</tr>
<tr>
<td>Enhance retention and transfer to the job</td>
<td>Blogs, Wikis, collaboration projects</td>
</tr>
</tbody>
</table>
Community of Inquiry

Social Presence: Supporting Discourse, Educational Experience, Setting Climate

Cognitive Presence: Selecting Content

Teaching Presence

Communication Medium

Col and Types of Interactions

Source: Saadatmand et al. (2017)
Online Environment Design

Learning activities
- Participation in discussion forum
- Email contact
- Reading of lessons

Learner support
- Learner guide
- Mentor support
- Online library
- Social interaction
- Synchronous chat
- Counselling

Content
- Objective-based course units
- Self-assessment online

Behaviourism
- Objective-based course units
- Self-assessment online

Cognitivism
- Learner guide
- Mentor support
- Online library
- Social interaction
- Synchronous chat
- Counselling

Constructivism
- Participation in discussion forum
- Email contact
- Reading of lessons

(Source: Mishra, 2002)
ERIC Model

(Source: Sharma, & Mishra, 2007)
Gilly Salmon’s 5-Stage Model

Salmon’s five-stage model

- **Development**
  - Integration
  - Mentor & Enabler

- **Knowledge Construction**
  - Conferencing
  - Facilitator
  - Task settler
  - Host

- **Information Exchange**
  - Navigation
  - Personalisation
  - Time saving
  - Mentor
  - Teacher

- **Online Socialisation**
  - Receiving & sending
  - Time saving
  - Host
  - Process estimator

- **Access & motivation**
  - Passwords
  - Getting on
  - Welcomer
  - Supporter

Principles of Multimedia Design

- **Multimedia principle:** Use both graphics and words
- **Contiguity principle:** Place related words and graphics together
- **Modality principle:** Present words as speech rather than on screen text (along side graphics)
- **Redundancy principle:** Avoid presenting words as narration and text together, while using animation
- **Coherence principle:** Avoid extraneous sound and pictures
- **Personalization principle:** Use conversational style and learning agents
- **Practice principle:** Give opportunities for interactions related to authentic events

Interactive Online Resources

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Welcome and Calendar</td>
<td>Module</td>
<td>Email</td>
<td>Mentor Support</td>
<td>Model Evaluation</td>
</tr>
<tr>
<td>Instructor &amp; Learning Community</td>
<td>Self-Assessment Questions</td>
<td>Discussion Forum</td>
<td>Technical Support</td>
<td>Module Evaluation</td>
</tr>
<tr>
<td>Concept Map</td>
<td>Assignments</td>
<td>Online Chat</td>
<td>Web Resources</td>
<td>Teaching Evaluation</td>
</tr>
<tr>
<td>Syllabus</td>
<td>Case &amp; Community Projects</td>
<td>Participant Corner</td>
<td>Search Engines</td>
<td>Satisfaction</td>
</tr>
<tr>
<td>Online OOD Framework</td>
<td>Action Research</td>
<td>Wiki</td>
<td>Online Dictionary &amp; Thesaurus</td>
<td>Reflection on Process</td>
</tr>
<tr>
<td></td>
<td>Reflective Journal</td>
<td></td>
<td>Netiquette &amp; Emotions</td>
<td>Assessment of Learning</td>
</tr>
</tbody>
</table>

(Source: Panda & Mishra, 2008)
Technological Pedagogical Content Knowledge

Source: Reproduced by permission of the publisher, © 2012 by tpack.org
ONLINE LEARNING MYTHS
Myth #1: If we build it, they will come
Myth #2: The core expertise of teachers come from content knowledge
Myth #3: Technology is a poor substitute for face-to-face learning
Myth #4: Synchronous video conferencing is online learning
Myth #5: Technology use does not improve learning
Myth #6: Today’s learners do not need digital skills
REFORMS FOR FUTURE
Institutional success factors

- Aligned to organisational needs rather than using a generic approach
- Organisational readiness, sufficient technical resources, motivated faculty, policy in place
- Freedom to adopt different models of blended learning
- Blended learning should be introduced as a scholarly and transformative redesign process
- Carrying out regular evaluations and sharing the results

- Continuing professional development for teachers with sufficient time for development
- Ongoing pedagogical and technical support
- Dealing with teachers’ fears of loss of control, and general uneasiness about the impact of online learning on classroom
- The impact on teachers’ workloads must be taken into account
- Use and creation of shareable and reusable digital resources to ensure that blended learning is sustainable

• Students’ readiness for blending learning
• Increased self-regulation in learning and time management skills
• Consistent and transparent communication around the new expectations to use technology in teaching and learning
• Clarity on assessment

Pedagogic Considerations

- Combination of the virtual and physical environments should be made on the basis of subject need and learning outcomes.
- Utilise the strengths of the different media and add value to the learning activities.
- The central role of the face-to-face environment along with activities for before, during and after class needs to be designed.
- Make the blend relevant to the learners need.

In conclusion

▪ Knowing is not enough, doing is necessary for success.

▪ In online education, learning on the go is a successful plan for failure. Instead, learn to do is right, the first time.

▪ The devil is in the details.
THANK YOU

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