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Cultural Differences in Undergraduate International Students' Use of Digital Technology

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Background: Technology in Learning

In the UK, HEFCE's report '*Enhancing learning and teaching through the use of technology*' (March 2009) highlighted three different levels of benefits from technology:-

- **Efficiency:** existing processes carried out in more cost-effective, time-effective, sustainable or scalable manners e.g. e-assessment
- **Enhancement:** improving existing processes and the outcomes e.g. lecture capture
- **Transformation:** radical, positive change in existing processes or introducing new processes

There is evidence of technology use in higher education sector to help with the first two but little evidence of transformation.

However anecdotal evidence of students using technology increasingly outside the classroom in informal settings

Background: International Students in HE

- National Higher Education Picture:
 - 20% (438,010) of all UK HE students are international
 - Represents over 50% of all postgraduate students and 18% of undergraduate students
 - There are now more undergraduate students (238k) than postgraduate (199k)
 - Main subject areas: business and law, science, technology and engineering

[Source: HESA return 2015-2016]

International Students and their Studies

- Often find our learning and teaching methods 'strange' & 'challenging'



- Anecdotal evidence that many use digital resources e.g. facebook, youtube and other social media to support their studies

Research Approach

Research Questions:

➤ *what digital technologies do international undergraduate students use to support their learning?”*

and

➤ *“how are they using these digital technologies to support their learning?”*

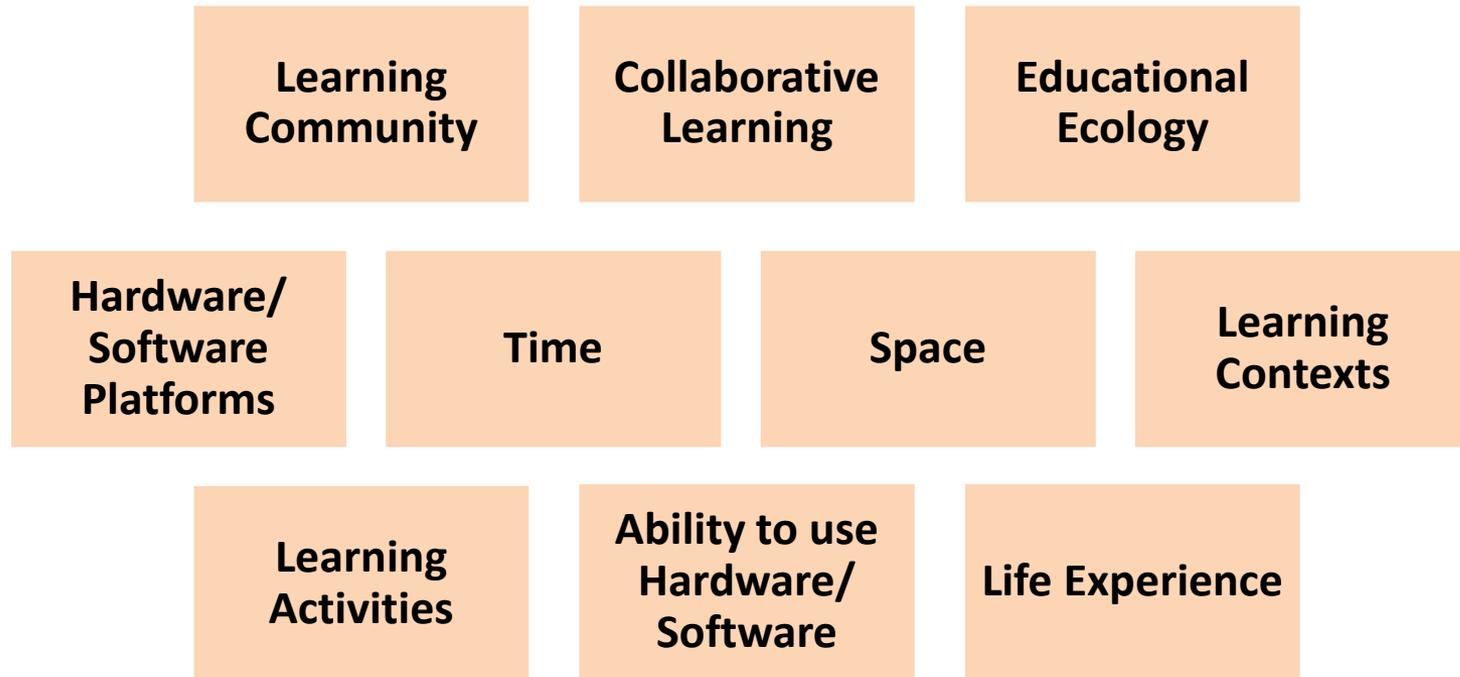
Research Approach

Case Study Approach:

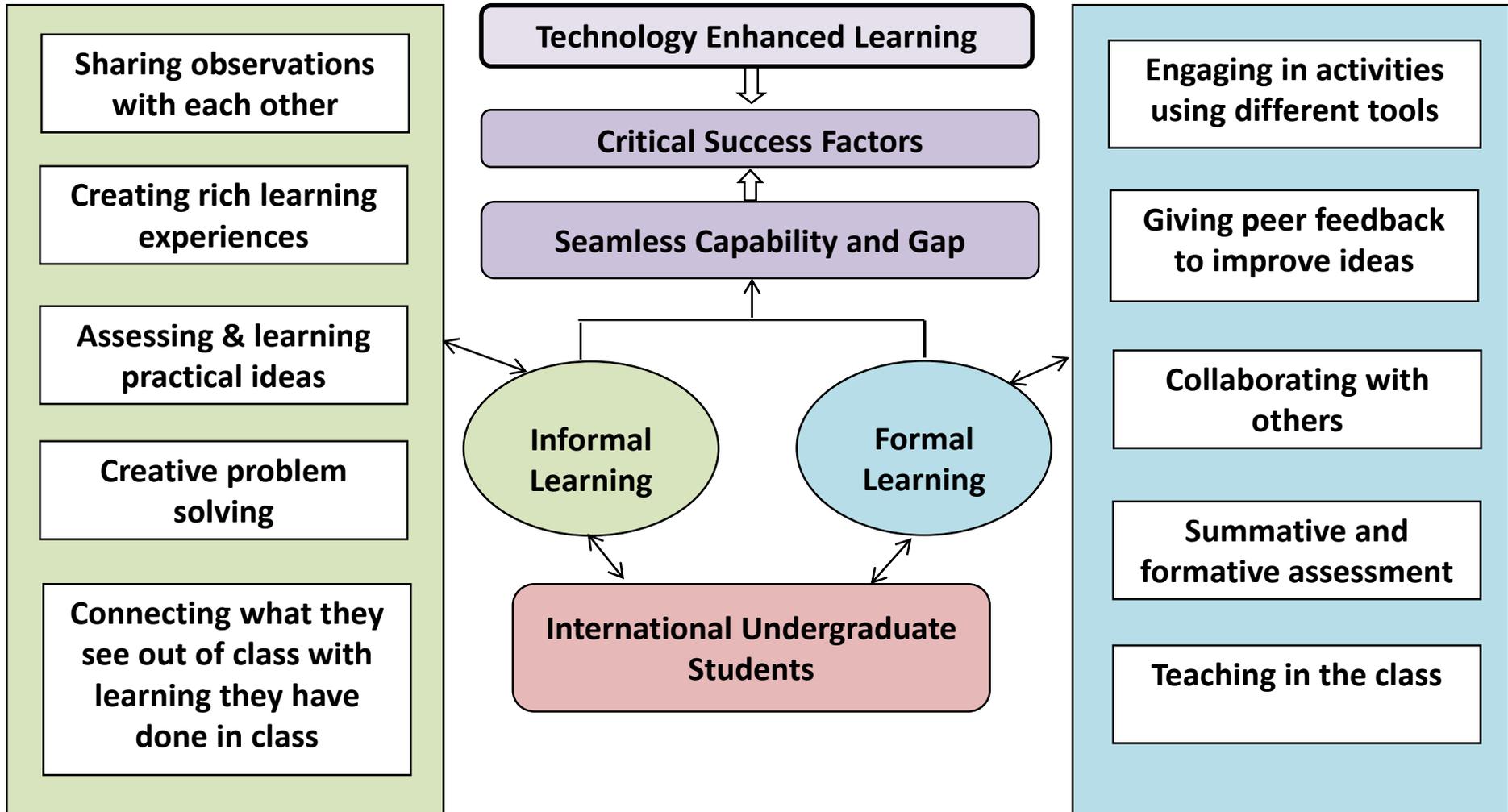
- Survey among undergraduate international students in the Faculty of Engineering and Environment (n=250)
[covers built and natural environments, engineering, IT and digital technologies, mathematics]
- Followed by 12 in-depth interviews/observations
- To provide a deep understanding of how they are using these technologies
- Inform our own learning and teaching practice and delivery approaches.

Research Framework

Identified initial set of 10 Critical Success Factors
(from the literature)



Research Framework



Key Findings: use of digital devices

Type of Digital Device	Daily	Weekly	Monthly	Never
Desktop computer	42% (104)	26% (65)	10% (25)	19% (48)
Laptop	88% (221)	6% (16)	2% (4)	2% (4)
Mobile phone	97% (243)	0	1% (2)	0
Tablet	32% (79)	14% (34)	12% (30)	31% (77)

Table 1. Frequency of Use of Digital Devices by Students
(out of a total of 250)

Note some students did not provide an answer

Key Findings: On and Off Campus

Hours of Use	1-3 hours	4-6 hours	7-9 hours	10+ hours
On Campus	57% (143)	28% (69)	10% (24)	5% (13)
Off Campus	16% (39)	34% (84)	37% (94)	14% (34)

Table 2. Frequency of Use of Digital Technology by Students
(out of a total of 250)

Note some students did not provide an answer

"When I don't have my laptop with me ... my mobile phone comes in as it helps me to do this on the go"

"I do find the library a very suitable place for my studies ... it's a very quiet place to concentrate and it have everything I need"



"I spend about two hours in the university using technology but three hours or more outside the university"

"I prefer to go home to study"

Key Findings: Popular Technologies to Support Learning

Technology Tool	Response
Internet Websites	79% (197)
Blackboard (eLP)	78% (195)
Email	76% (191)
Social Media	52% (131)
Youtube	51% (127)
Document Sharing e.g. Dropbox	41% (103)
eLibrary e.g. NORA	40% (99)
Ebooks, discussion board, wikis, blogs	<35%

Table 3. Most Popular Digital Technology Tools

(out of a total of 250)

Note some students did not provide an answer

Key Findings: Main Purpose

Purpose of Using Digital Technology	Response (out of 250)
Communicate with other students	71% (178)
To ask questions	70% (175)
To engage in discussion	57% (142)
To share resources	45% (113)
To support formal assessment	44% (110)
To evaluate work of others	20% (49)

Table 4. Main Purpose for Using Digital Technologies
(out of a total of 250)

Note some students did not provide an answer

Key Findings: Main Purpose Cultural Difference

Purpose of Using Digital Technology	USA & Europe	North & East Asia	Midde East
Communicate with other students	91%	71%	71%
To ask questions	76%	66%	71%
To engage in discussion	55%	59%	51%
To share resources	69%	48%	34%
To support formal assessment	41%	45%	41%
To evaluate work of others	28%	22%	13%

Table 5. Cultural Differences on Main Purpose of Using Digital Technologies

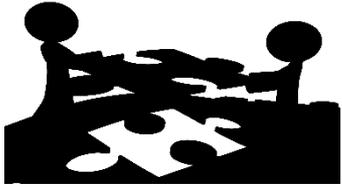
Other Findings and Cultural Differences: Communication and Feedback

- **Face to face** (77%) is preferred form of communication for working with others but over 50% also cited use of **social networks** and **email** with **messaging** and **phone** at just over 40%
- **Phone** is particularly popular with students from **Asia**
- **Messaging** and **social media** are most popular with students from **Europe/USA**, and is particularly low with students from the Middle East
- **Discussion forums** are **rarely used**
- More **feedback** is received by students via **Blackboard** (45%) and **Email** (42%) than face to face (32%)



Location and Environment

- **Library** (69%) is **preferred location** for effective study followed by home (56%) and classroom (54%), **online learning** was **lowest** at 23%
- There are cultural differences for **online learning** with 31% of students from **Europe/USA** using it compared to 20% for those from the Middle East
- **Europe and USA** students (29%) find **collaborative learning** more useful than those from Asia (14%)



Problems with Technology

- **Main issues** in using digital technologies are reported as **technical** (38%) with 29% reporting **Internet addiction** and 26% reporting a **lack of understanding** with the technology
- Students from **Middle East** and **North & East Asia** reported **more problems** with technology than those from Europe/USA
- A third of students from **Middle East** reported **poor understanding** of technology compared to under 15% from Europe and the USA
- **Internet addiction** is higher for students from **Asia** (30%) compared to those from USA/Europe (25%)
- 14% of students from **Asia** report **social issues** with technology compared to <3% with Europe/USA

Conclusions and Next Steps

- ✓ Students are **becoming more mobile** in their use of technology – devices and location
- ✓ They are using technology for a **variety of purposes** both **inside** and **outside** the classroom
- ✓ There are **cultural differences** in how students access and use technology
- This evidence can inform our approach to technology in learning e.g. document sharing more popular than eLibrary!!

Our Related Work



- NUSTEM: an outreach and widening participation project to encourage more young people (especially females and other underrepresented groups) into technology, physical sciences and engineering – see www.nustem.uk
- Using games to engage young people in science and technology, UK and Africa
- Evaluation of digital literacy in the wider community

Thank you.
Any Questions?