DIGITAL TECHNOLOGIES FOR eLEARNING DURING ‘LOCKDOWN’: A COMPARATIVE STUDY OF STUDENT PERSPECTIVES

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Swansea University, Wales

The University of the Western Cape, South Africa

Óbuda University, Hungary
The COVID-19 pandemic brought disruption to the way we live, work, and socialise and has had a profound impact on traditional universities’ ability to deliver on their teaching mandate.

Source [1]

Dr Desireé Cranfield (Swansea University, UK)
The different countries’ responses to the pandemic were quite unique, based on their specific circumstances at the time, influencing each country’s approach to the continuation of education.

Source [2]

Dr Desireé Cranfield (Swansea University, UK)
Due to the COVID-19 pandemic, higher education institutions, globally, had to transform their approach to the delivery of their educational programmes.

Source [3]  Dr Desireé Cranfield (Swansea University, UK)
The changed circumstance had an:

- Impact on the student learning experience
- Satisfaction of the higher education experience

Traditional modes of teaching delivery were not possible, and virtual and online modalities were the only options available to continue the teaching and learning agenda.

Dr Desireé Cranfield (Swansea University, UK)
To measure country specific positions on information communications technology use, capacity, and readiness—organisations developed several frameworks or indices.

In the next section two of these will be considered in terms of the three countries that participated in this study.
Network Readiness Index (NRI)

- Technology
  - Access
  - Content
  - Future Technologies

- People
  - Individuals
  - Businesses
  - Governments

- Governance
  - Trust
  - Regulation
  - Inclusion

- Impact
  - Economy
  - Quality of Life
  - SDG Contribution

Source [4]

Professor Isabella Venter (University of the Western Cape, SA)
Professor Isabella Venter (University of the Western Cape, SA)
**Digital Intelligence Index**

- **Stall Out Economies**: High state of digital advancement while exhibiting slowing.
- **Stand Out Economies**: Digitally advanced and exhibit high momentum.
- **Watch Out Economies**: Face significant challenges with their low state of digitalization and low momentum.
- **Break Out Economies**: Low scoring in their current states of digitalization but are evolving rapidly.

<table>
<thead>
<tr>
<th>Country</th>
<th>State Score</th>
<th>Momentum Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>United Kingdom (Stall out)</td>
<td>81.48</td>
<td>44.81</td>
</tr>
<tr>
<td>South Africa (Watch Out)</td>
<td>50.79</td>
<td>42.52</td>
</tr>
<tr>
<td>Hungary (Watch Out)</td>
<td>57.74</td>
<td>30.64</td>
</tr>
</tbody>
</table>

Source [5] Professor Isabella Venter (University of the Western Cape, SA)
Internet speed & cost by country 2021

- Population in million
- Mobile speed
- Broadband speed
- Cost in $ (60mbps)

South Africa | Hungary | United Kingdom
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Professor Isabella Venter (University of the Western Cape, SA)
Average download speed by country (mbps)

Source [5] Professor Isabella Venter (University of the Western Cape, SA)
INTRODUCTION

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Professor Isabella Venter (University of the Western Cape, SA)
IMPACT OF COVID-19 ON HIGHER EDUCATION STUDENT PERCEPTIONS OF ONLINE LEARNING

ACCESS TO DIGITAL LEARNING MANAGEMENT ENVIRONMENT
- System Access
- Ease of use of emergency eLearning technologies
- Preference of digital technologies

DEMOGRAPHICS
- Country of study
- Age
- Gender
- Academic Study

DIGITAL TECHNOLOGIES
- Digital technologies used
- Preference of digital technologies

Professor Isabella Venter (University of the Western Cape, SA)
To determine

• the online challenges and experiences of higher education students during COVID-19

• how access to digital technologies impacts the student online learning experience.

Professor Isabella Venter (University of the Western Cape, SA)
The following questions were posed:

1. **[Digital Access]** What access did students have to their online digital learning environment?

2. **[Attitudes]** What was the attitude of students towards their digital learning environment and systems?

3. **[Behaviours]** What digital technologies were mostly used, and which were preferred by students to engage with the emergency eLearning during the pandemic?
Data were collected from:

- Óbuda University, Hungary
  Source [6]
- Swansea University, Wales
  Source [7]
- The University of the Western Cape, South Africa
  Source [8]
• Qualtrics was used to administer a pre-designed questionnaire of 65 open-ended and closed questions
• It addressed issues around access to the digital environment and students preference of features of digital technologies
• Ethical clearance was obtained for the study

Source [9]

Professor Renette Blignaut (University of the Western Cape, SA)
• Data were collected in Oct and Nov 2020
• Analyses revealed the digital technologies used for eLearning by students during lockdown
• Both SAS and SPSS were used to support the analysis

Professor Renette Blignaut (University of the Western Cape, SA)
Student participants by country:

- Hungary: 47%
- South Africa: 26%
- Wales: 5%

Professor Renette Blignaut (University of the Western Cape, SA)
Student participants’ year of study by country:

- **Postgrad**
  - South Africa: 5
  - Wales: 1
  - Hungary: 10

- **4th year**
  - South Africa: 25
  - Wales: 15
  - Hungary: 20

- **3rd year**
  - South Africa: 30
  - Wales: 20
  - Hungary: 40

- **2nd year**
  - South Africa: 25
  - Wales: 35
  - Hungary: 50

- **1st year**
  - South Africa: 15
  - Wales: 20
  - Hungary: 25

**Professor Renette Blignaut** (University of the Western Cape, SA)
Digital access

At home (or where you reside) using Broadband Wi-Fi
At home (or where you reside) using mobile Wi-Fi
At an Internet Cafe
At a friend/family member's house
At a facility provided by the university
At a public, free Wi-Fi spot

Hungary
Wales
South Africa

Professor Renette Blignaut (University of the Western Cape, SA)
Digital access

- Own Phone
- Own Laptop
- Someone else's Laptop
- Own Personal Computer
- Someone else's Personal Computer
- Own Tablet

Hungary
Wales
South Africa

Professor Renette Blignaut (University of the Western Cape, SA)
Digital access

- 1-2 years
- 3-4 years
- 4-5 years
- More than 5 years

Hungary  Wales  South Africa

Dr Andrea Tick (Obuda University, Hungary)
Digital access

<table>
<thead>
<tr>
<th>Costs increase (%)</th>
<th>Hungary n=240</th>
<th>Wales n=141</th>
<th>South Africa n=131</th>
<th>Chi-Sq and P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accommodation costs</td>
<td>10</td>
<td>10</td>
<td>40</td>
<td>Chi²=55.49 and P&lt;0.0001</td>
</tr>
<tr>
<td>Internet access costs</td>
<td>20</td>
<td>14</td>
<td>73</td>
<td>Chi²=132.59 and P&lt;0.0001</td>
</tr>
<tr>
<td>Digital equipment costs</td>
<td>30</td>
<td>40</td>
<td>53</td>
<td>Chi²=20.4 and P=0.0004</td>
</tr>
</tbody>
</table>

Source [10] Dr Andrea Tick (Obuda University, Hungary)
**Digital access**

- I am satisfied with my Internet access
- The University's digital environment is always accessible to me
- The University's digital system is always fully operational

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**Results**

- **Hungary**:
  - Disagree: 20, Neutral: 30, Agree: 50
  - Disagree: 10, Neutral: 40, Agree: 50
  - Disagree: 5, Neutral: 45, Agree: 50

- **Wales**:
  - Disagree: 15, Neutral: 35, Agree: 50
  - Disagree: 10, Neutral: 40, Agree: 50
  - Disagree: 5, Neutral: 45, Agree: 50

- **South Africa**:
  - Disagree: 10, Neutral: 30, Agree: 60
  - Disagree: 15, Neutral: 35, Agree: 50
  - Disagree: 5, Neutral: 45, Agree: 50

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Dr. Andrea Tick (Obuda University, Hungary)
Attitude

Student experience of the universities online learning platform

- Took some time to get used to
- Took too long to get used to
- Was easy to use

All the students in the survey
- 5.15% Took some time to get used to
- 39.82% Was easy to use
- 55.03% Was easy to use

South Africa
- 5.41% Took some time to get used to
- 32.43% Was easy to use
- 62.16% Was easy to use

Hungary
- 1.42% Took some time to get used to
- 36.49% Was easy to use
- 62.09% Was easy to use

Wales
- 11.20% Took some time to get used to
- 52.00% Was easy to use
- 36.80% Was easy to use

Dr Andrea Tick (Obuda University, Hungary)
Attitude

Transition to online learning experienced

- Not easy nor challenging
- Challenging
- Easy

Dr Andrea Tick (Obuda University, Hungary)
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- WhatsApp
- The University’s online learning platform
- Zoom
- Email
- Microsoft Teams

Dr Andrea Tick (Obuda University, Hungary)
Behaviour

- Content visible on a mobile device: Hungary 64%, Wales 65%, South Africa 72%
- Slides with voice over recording: Hungary 63%, Wales 65%, South Africa 71%
- Live interactive online lectures: Hungary 63%, Wales 65%, South Africa 72%
- Teamwork and working together with others online: Hungary 63%, Wales 65%, South Africa 71%
- Prescribed or recommended books available as an e-book: Hungary 62%, Wales 65%, South Africa 72%
- End-of-chapter or assignment questions/quiz with feedback: Hungary 62%, Wales 65%, South Africa 72%
- Completing set online tasks, that forms part of the final grade: Hungary 63%, Wales 65%, South Africa 70%

Dr Andrea Tick (Obuda University, Hungary)
The aim of the study was to determine:

- the online challenges and experiences of higher education students during COVID-19
- how access to digital technologies impacts the student online learning experience

Source [11]

Dr Desireé Cranfield (Swansea University, UK)
In particular the following were considered:

**Digital access**

**Attitudes**, and

**Behaviours**

Source [11] Dr Desireé Cranfield (Swansea University, UK)
Digital access

- In general, the South African students used their mobile data for Internet access while the Hungarian and Welsh students used broadband and Wi-Fi.
- Most students used their laptops to access the Internet, with mobile devices being the second most popular devices.
- Hungarian students preferred using PC’s.

Source [12]

Dr Desireé Cranfield (Swansea University, UK)
Digital access

*Receptive*: This generation of students are familiar with using digital technologies

*Increased costs*: More of the South African students experienced cost increases—both to access digital technologies and the equipment to do so.

Source [13]

Dr Desireé Cranfield (Swansea University, UK)
Attitude

Quality of digital access:
All students were satisfied with their Internet access and online learning environment

Transition:
Unlike the Hungarian and the Welsh students, the South African students found the transition more challenging

Dr Desireé Cranfield (Swansea University, UK)
Behaviour

• The preferences of digital technologies were more important for the participating South African students’ learning experience.

• South African students indicated that they prefer more digital support, interactivity and engagement in the learning process opposed to the Welsh and Hungarians.
To conclude

- Generation Z is receptive
- Environmental digital readiness and the capacity of staff, institution and country, can influence the student learning experience

Source [16]

Dr Desireé Cranfield (Swansea University, UK)
To conclude

There is a demand from students to include new modalities
New modalities and best practices should be embraced

Source [17] Dr Desireé Cranfield (Swansea University, UK)
ACKNOWLEDGEMENTS

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Óbuda University, Hungary
References for images


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References for Images

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[10] https://www.manchester-offices.co.uk/blog/office-space/5-ways-businesses-can-minimise-the-property-costs/

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