Post-Pandemic Intended Use of Remote Teaching and Digital Learning Media in Higher Education

Insights from a Europe-wide Online Survey

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Motivation:
Overcome shortcomings of COVID-19 impact literature review (Farnell et al., 2021; Huth et al., 2021)
• Investigate possible paradigm change in Higher Education
• Generalizable findings for the European perspective

Hypotheses:

H1) a majority of formats used during emergency remote teaching will want to be kept long-term, post-pandemic (by both students and faculty members)

H2) attitudes towards using e-learning formats post-pandemic differ between instructors and students
• Survey open and advertised between 27.07.21 and 17.01.22 (6 months)

• **Two parts:**
  Categorical questions and demographics
  Tool use frequencies

• Responses from 17 different countries (varying degrees of representativeness)

• 1509 responses overall / **779 valid**
  after control variable and missing values exclusion
  658 valid responses from students
  121 valid responses from faculty members
H1: Tool Use Frequency
21 tools and instructional methods evaluated:

- communication (6 tools)
- collaboration (3 tools)
- formats of didactic activity (6 formats)
- assessment formats (6 formats and tools)

Three approximated time points:

Determined on a 4-point Likert Scale (Chyung et al., 2014)
(1 = not at all, 2 = rarely, 3 = sometimes, 4 = frequently)
Tool Use Frequency Overview

Communication | Assessment Formats
Collaboration | Formats of Didactic Activity

Students
Faculty Members
Tool Use Frequency Overview

Communication | Assessment Formats
Collaboration | Formats of Didactic Activity

Students
Faculty Members

Chat
Forum
E-Mail
Video Conference
Online Office Hours
LMS
Virtual Whiteboard
Collaborative Text Editors
Virtual Brainstorming Tools
Crowd Questioning Tools
Synchronous digital group work
Asynchronous digital group work
Media Production for Knowledge Transfer
Online Icebreaker
Asynchronous digital tool interaction
Online Quizzes
Online Submission
Digitally Supervised Exam
Online Project
Media Production as assessment
Online Oral Examination

Online Icebreaker
**Results**

**Tool Use Frequency - Overall**

- **Tools that both groups would like to use at lower frequency than during the pandemic (7 tools)**

- **Tools that both groups want to continue using at the same level of frequency as during the pandemic (5 tools)**

- **Tools which students want to use even more frequently than during the pandemic, while instructors intend to keep it at the same level as during (2 tools)**

- **Tools that instructors want to use at higher frequency than students (2 tools)**

**Video Conference**

- Before: 1
- During: 3
- After: 2

**Digitally Supervised Exam**

- Before: 1
- During: 2
- After: 3

**Online Office Hours**

- Before: 0
- During: 2
- After: 3

**Crowd Questioning**

- Before: 1
- During: 3
- After: 2

**Virtual Brainstorming Tools**

- Before: 1
- During: 2
- After: 3
• All evaluated tools and formats significantly increased in frequency of use during the pandemic (except E-mail)
• All evaluated tools and formats significantly increased in frequency of use during the pandemic (except E-mail)
• Most tools (15 of the total 21) are intended to be used at lower frequency than during the pandemic
• All evaluated tools and formats significantly increased in frequency of use during the pandemic (except E-mail)
• Most tools (15 of the total 21) are intended to be used at lower frequency than during the pandemic
• All tools will be retained with significantly higher frequency than before the pandemic (except E-mail)
H2: Attitudes toward long-term use of remote teaching and digital learning media
Results

Attitudes toward long-term use

Evaluated with three categorical questions:

Pandemic as an accelerator for the modernization of higher education

- Students: 66% Yes, 16% No, 16% Unsure, 2% Not interested
- Faculty Members: 66% Yes, 16% No, 16% Unsure, 2% Not interested

Preference toward long-term use of remote teaching and digital learning media

- Students: 62% Complementary Remote Teaching, 20% Mainly Remote, 13% Unsure, 8% Remote only in Emergencies, 1% Not use either again
- Faculty Members: 55% Complementary Remote Teaching, 26% Mainly Remote, 1% Unsure, 2% Remote only in Emergencies, 4% Not use either again

Quality of personal interaction with each other

- Students: 56% Better than before, 20% Adequate, 14% Unsure, 3% Worse than before, 3% Not interested
- Faculty Members: 31% Better than before, 26% Adequate, 6% Unsure, 3% Worse than before, 5% Not interested
Discussion and Conclusion
H1) a majority of formats used during emergency remote teaching will want to be kept long-term, post-pandemic (by both students and faculty members)

H2) attitudes towards using e-learning formats post-pandemic differ between instructors and students

**Confirmed**: All evaluated tools will be used at a higher frequency long-term than before the pandemic

**Rejected**: Attitude is comparable, however, preferences for individual tools can differ
PEU – Perceived Ease of Use
PU – Perceived Usefulness
ENJ – Enjoyment
SE – Self-Efficacy
FC – Facilitating Conditions

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<tr>
<th>Tool types</th>
<th>PEU</th>
<th>PU</th>
<th>ENJ</th>
<th>SE</th>
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Note: Yellow = significant differences between the two groups; X = significant effect of factor on tool use frequency (at 0.05 level).
Key Takeaways:

• Most students and faculty members similarly view the pandemic as a catalyst for modernization in Europe.

• Issues with quality of interactions and complementarity of digital formats: importance of engagement in teaching and learning.

• It is not self-efficacy that influences intended future tool use, but perceived usefulness, enjoyment, and institutional support.

• Worth inquiring and experimenting to meet students’ needs.
Thank you

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