Evaluating the effectiveness of printed materials as an alternative to online resources in Environmental Science

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Introduction

Background

• Teaching materials for Environmental and Earth science are delivered online
  • No textbooks
• Online materials may present accessibility barriers
  • Additional requirements
  • Secure Environments
  • Limited / poor internet access
• In these cases, a printed version of the online materials is provided
Introduction

Our project

Objectives...

1. Evaluate the current use and efficacy of print packs for students and their Associate Lecturers (ALs)
2. Design an intervention and train AL champions to improve print pack use
3. Re-evaluate use and efficacy of print packs post-intervention

This presentation summarises findings of objective 1 and 2.

Note on literature...

- Strong focus on disability
- Very little on print as an accessible alternative to online materials
The literature

- The Open University is the largest HE provider for students with disabilities (36,400 declared a disability in 2020/2021 (The Open University, 2021a).
- There is a large amount of literature on disability in relation to HE in general. e.g. Seale (2014), Moriña (2017).
- Collins et al (2019) focuses on inclusion and links to employability: there is a move away from ‘reasonable adjustments’ to inclusive education for all’ but there remains a focus on adjustments for individual students.
- Online formats, particularly asynchronous, give greater flexibility to disabled students having more difficulty concentrating / staying on task (Terras et al., 2015).
- Studying online means students can engage with peers and academics regardless of difficulties e.g. with vision or mobility (Seale, 2014).
- The OU strives to make online modules as accessible as possible but recognises that some elements might not be fully accessible, e.g. online experiments / interactive activities (The Open University, 2021b).
- Adjustments provided as standard include figure descriptions, audio / video transcripts and closed caption subtitles (Slater et al., 2015).
- Students in Secure Environments (SiSE) and members of armed forces on operational duty have no or limited internet access, so may not be able to study online.
Methods

Research instruments used to evaluate print pack use and efficiency

- Associate Lecturer Focus Group (SiSE theme)
- Student Support Team Focus Group (Non-SiSE theme)
- Quantitative Data (OU data)
- Student survey (Non-SiSE)

All University ethical approvals obtained prior to starting.
SiSE = Students in Secure Environments
Results and Discussion

Quantitative data – baseline

• S112 – Science: concepts and practice
• Comparison of previous two years data
• Focus on first assignment submission and score
  • Least affected by pandemic
• SiSE perform better than whole cohort
• Print pack users lower than whole cohort
  • Many have complex additional needs

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<th>SiSE</th>
<th>Print pack</th>
<th>All</th>
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Results and Discussion

Focus Groups

**ALs (SiSE)**
- Blended use often impossible
- Poor interactivity
- Lack of AL info and support

**SST (Print pack users)**
- Blended use
- Few complaints
- Viable work-arounds

**Both**
- Late delivery
- Poor organisation
Results and Discussion

Student questionnaire – initial highlights

- Sample of eligible print-pack users (not SiSE)
  - Response rate of 30% (n = 13)

- Most rely heavily on print packs as an adjustment for disability

- Most blend with online resources
  - Interactive content
  - Media
  - Tutorials

- Main advantage: improving accessibility (e.g. visually impaired, difficulty sitting at desk)

- Improvements: timely delivery, better organisation / format
Student Voice
Quotes from the student questionnaire

- Being disabled I struggle to sit at a desk for long periods due to chronic pain so I use the printed packs to study whilst lying down.

- Cannot use a screen for reading large amounts of text so would be unable to sufficiently complete the modules without the printed materials.

- ..ensuring they arrive slightly earlier than the study weeks they cover (rather than later!)...
## Interim conclusions and recommendations

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<th>Positives</th>
<th>Timely delivery / better organisation</th>
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<td>More support for students &amp; ALs</td>
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<td>Better interactive adaptations</td>
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### Current and next steps

ALs working as champions in 22J on S112 and S206

Post-intervention evaluation
AL Print Pack Champions

Interim findings…

› Students who have access to module website are better supported by print packs than SiSE who rely entirely on print packs

› Sticky threads on tutor forums used to engage tutors at module start – some initial activity, then quiet

› Tutors found access to print pack resources on SharePoint helpful on S112

› Physical copies of print pack delivered to champions for evaluation – better organisation and introduction recommended (e.g. covering letter with advice on which documents to prioritise; explanatory titles and cross-links between resources)
Acknowledgements

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References


Thank you

Questions?

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