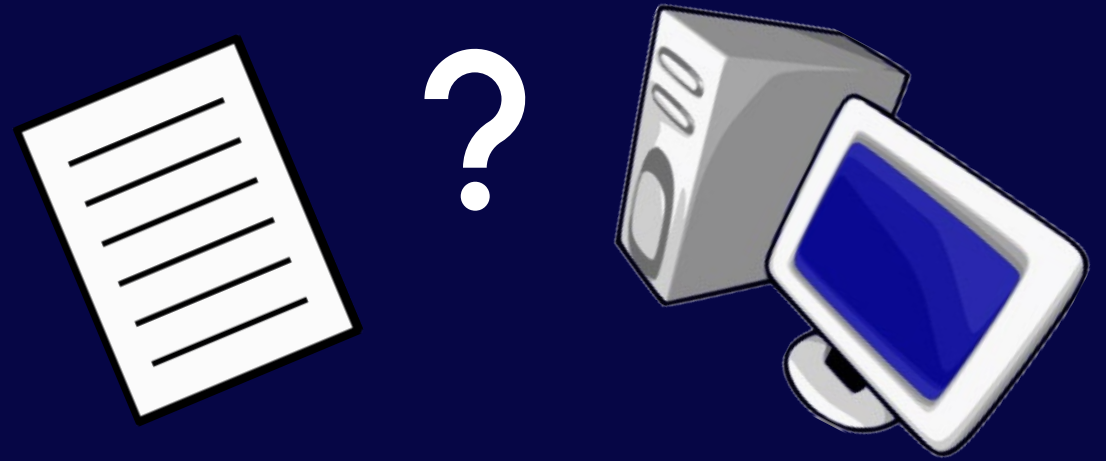


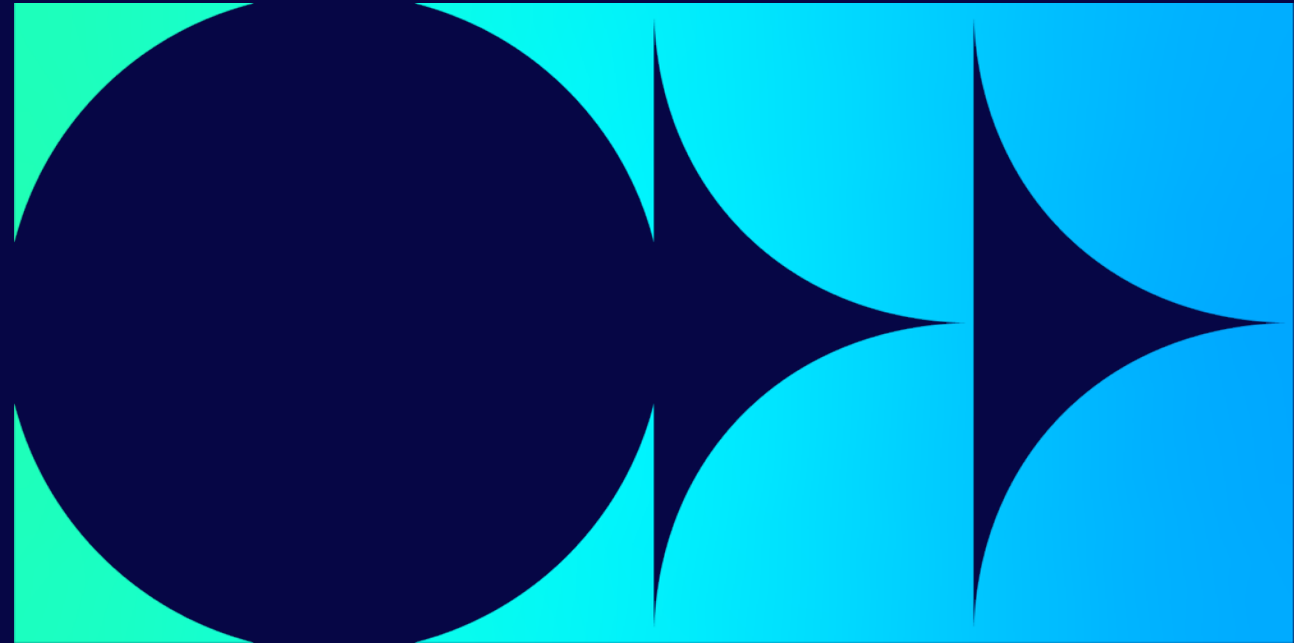
Evaluating the effectiveness of printed materials as an alternative to online resources in Environmental Science



Fiona Aiken and Chris Hutton

Senior Lecturers in Environmental Science

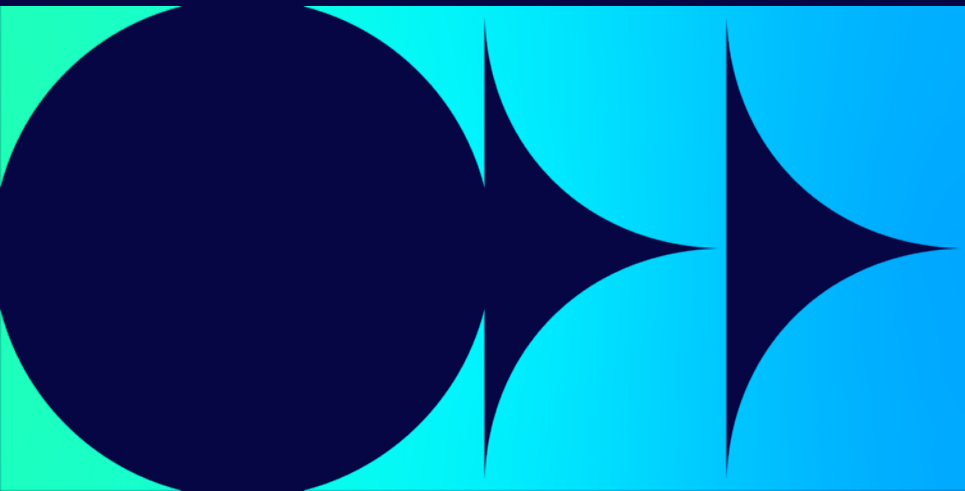
EDEN, Dublin – 2 June 2023



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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

The screenshot shows the S112-21J course website. The navigation bar includes links for Home, Assessment, Tutorials, Forums, Resources, News, and Help, along with a search bar. The main content area features the course title 'S112 21J' and 'Science: concepts and practice' with a progress indicator at 0%. Below this are tabs for 'Current weeks' and 'All weeks', and a 'COLLAPSE ALL' button. A 'WEEKS 27-28' section is highlighted, indicating 'Focus topics' for '30 April-13 May' with '0 of 2 completed'. A message states 'This course has been rolled forward. If you make any significant changes to this site, you should consider making the same changes to the site for the next presentation.' A 'Pathway route planner' link is also visible.

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

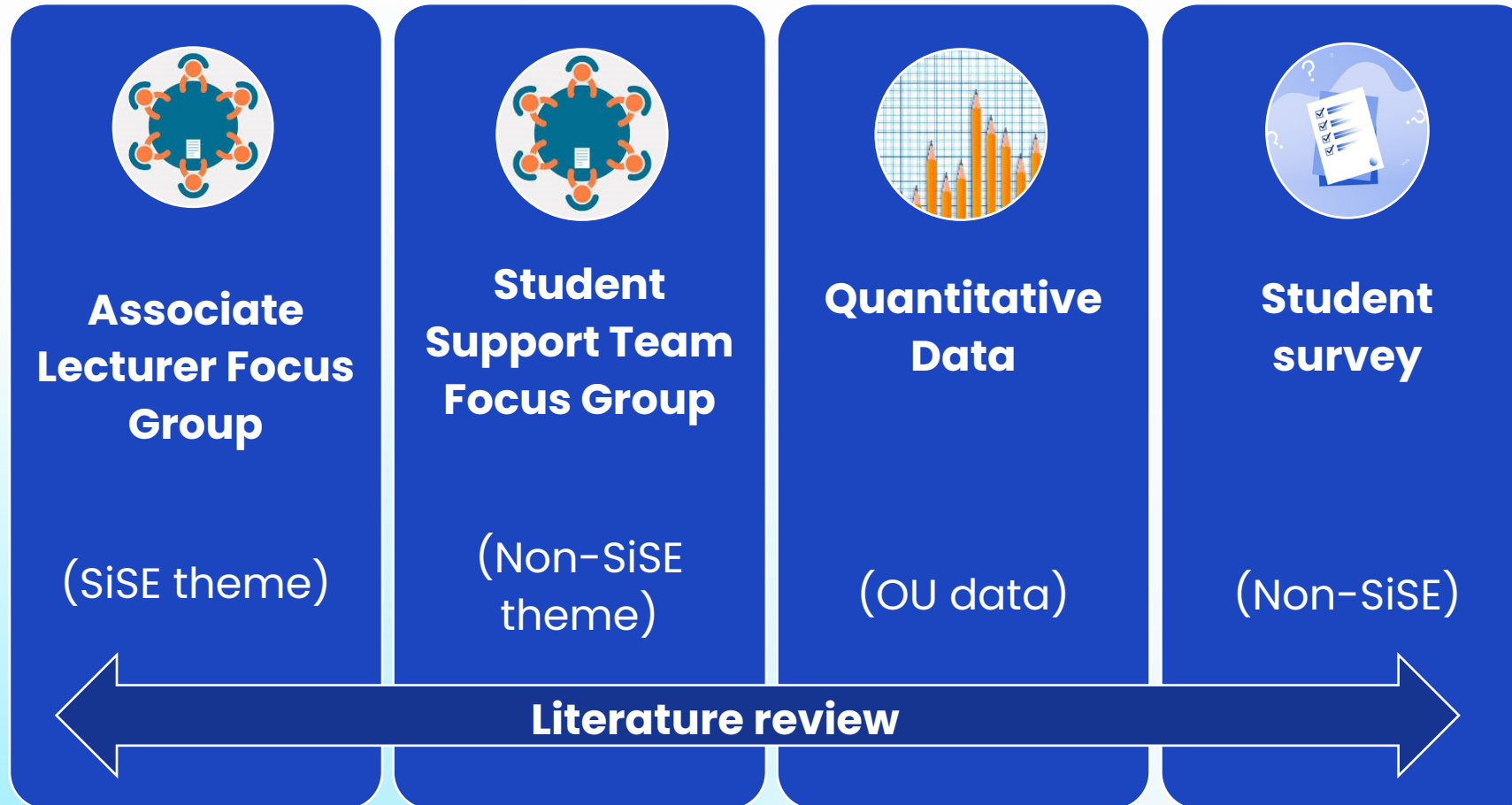
Introduction

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



Results and Discussion

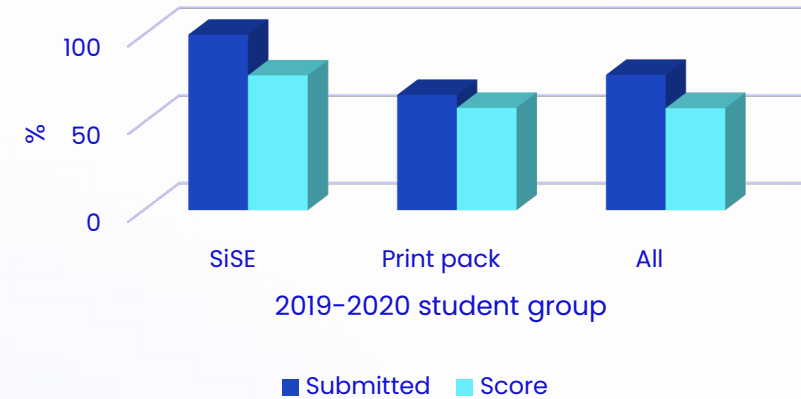
Quantitative data - baseline

- 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

	SiSE	Print pack	All
2019-20	11	35	1536
2020-21	14	21	1731



First assignment submission rates and mean scores for 2019–2020

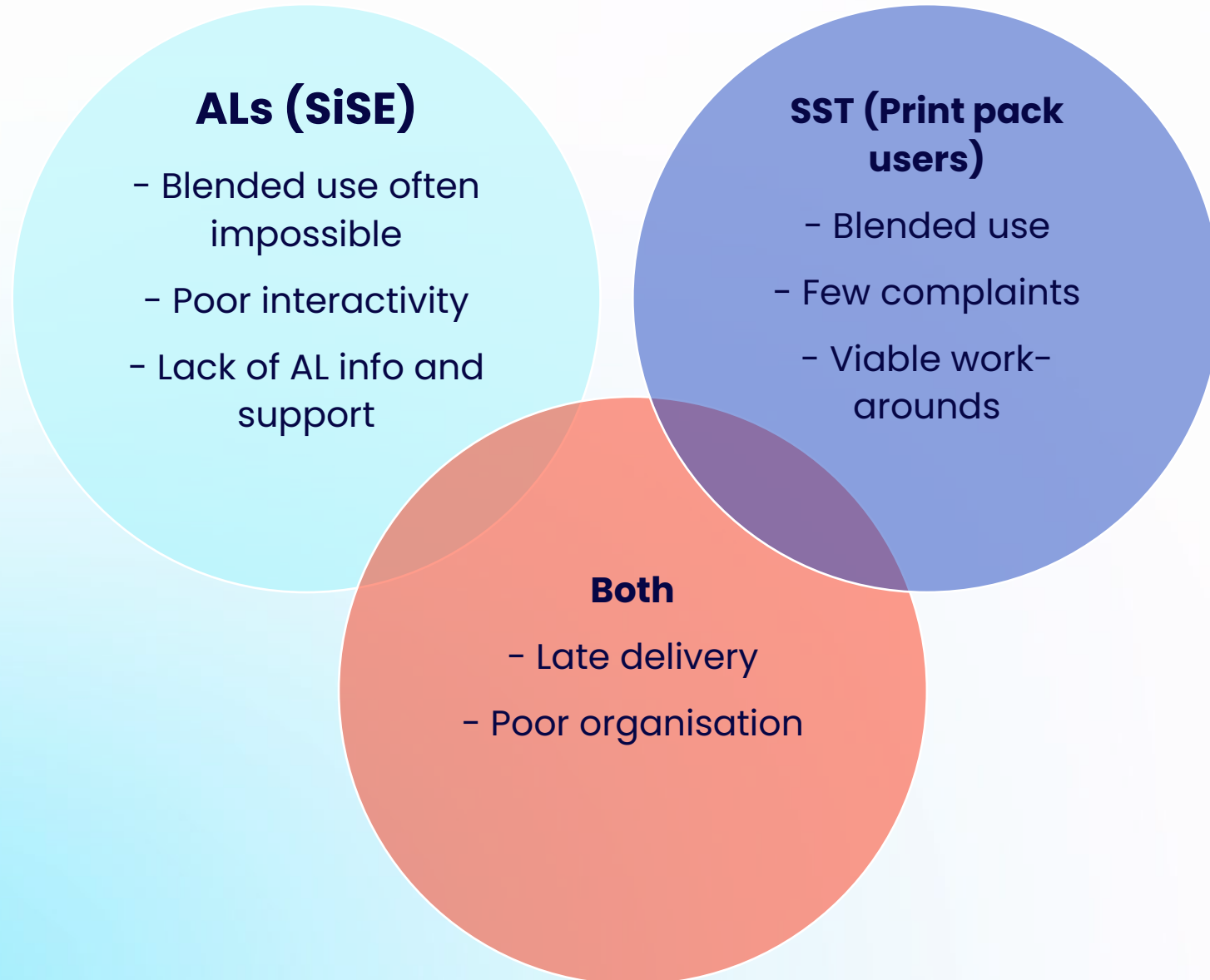


First assignment submission rates and mean scores for 2020–2021



Results and Discussion

Focus Groups



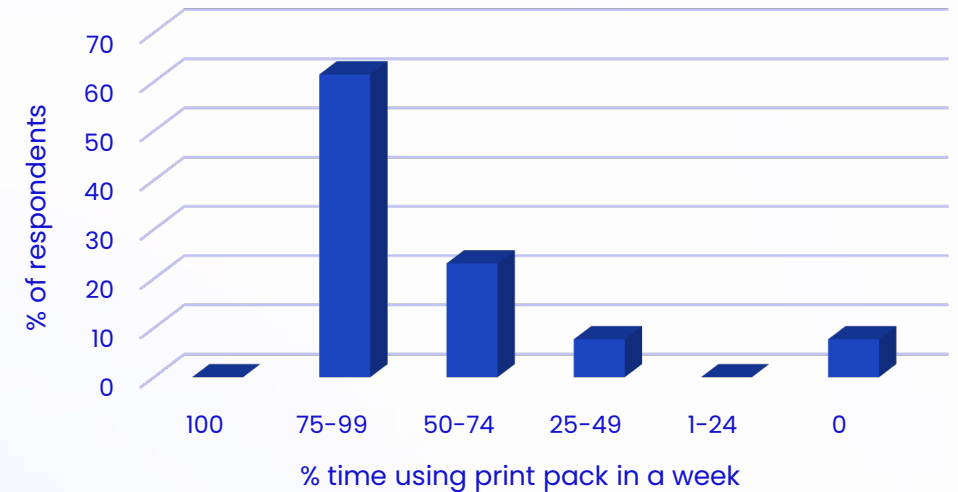
AL = Associate Lecturer
SST = Student Support Team
SiSE = Students in Secure
Environments

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

Time using print packs



Advice on best use of print packs



Student Voice

Quotes from the student questionnaire

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!)

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

Interim conclusions and recommendations



Positives

Very valuable in blended context
Enable study when no online access



Improvements / Recommendations

Timely delivery / better organisation
More support for students & ALs
Better interactive adaptations



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

- Dr Jane Kendall-Nicholas and Dr Kim Vickers – AL print pack champions
- Dr Jenny Duckworth – literature searching / review
- Associate Lecturers and Student Support Team colleagues participating in focus groups
- Student reviewers for questionnaire design
- eSTeEM – The OU Centre For STEM Pedagogy – for funding



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Thank you

Questions?

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