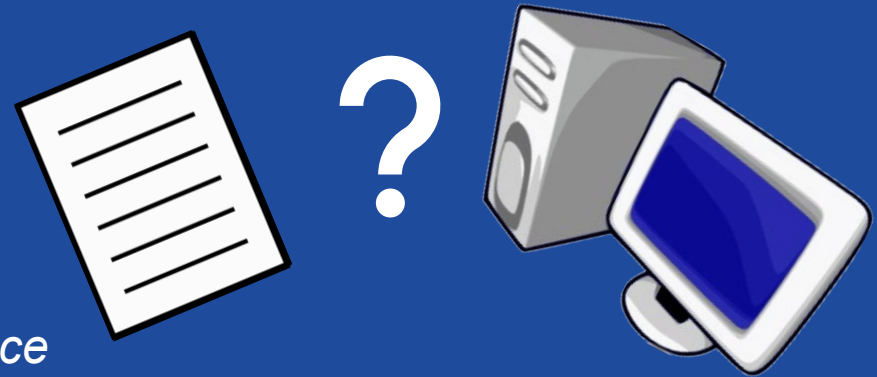


# Evaluating the effectiveness of printed materials as an alternative to online resources

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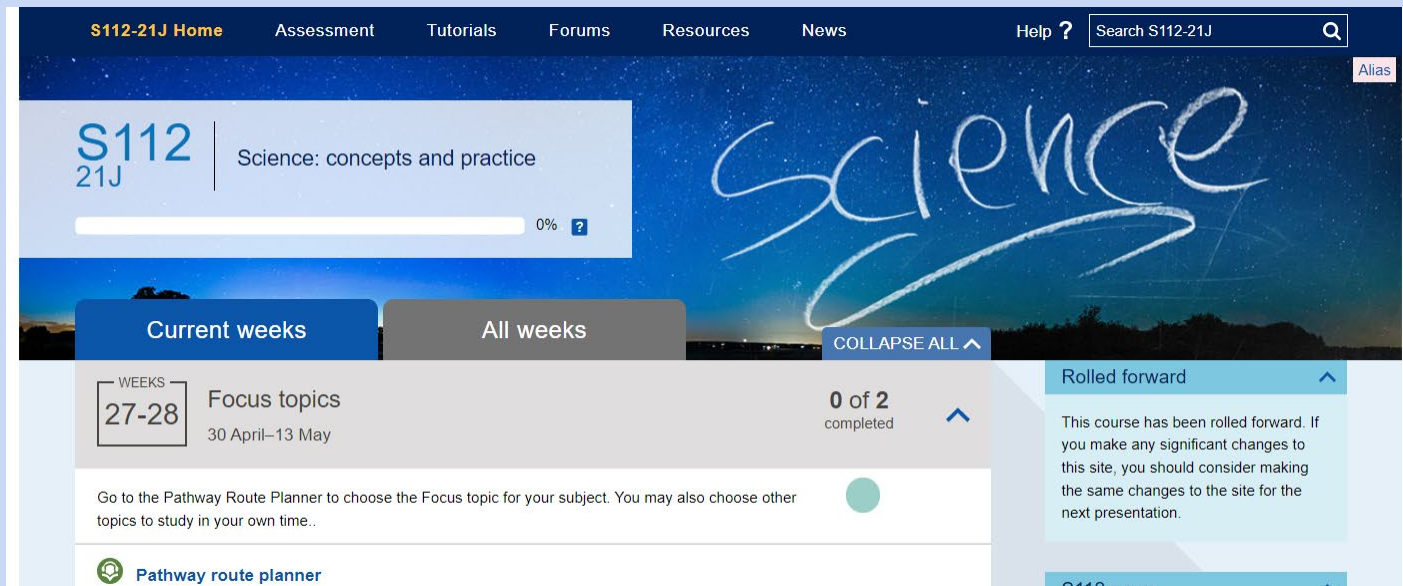
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## Background information

- 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 course website for S112-21J. The navigation bar includes links for Home, Assessment, Tutorials, Forums, Resources, News, and Help. A search bar is present with the text "Search S112-21J". The main header features the course code "S112 21J" and the title "Science: concepts and practice". A progress bar indicates 0% completion. Below the header, there are tabs for "Current weeks" and "All weeks", along with a "COLLAPSE ALL" button. The current week is "WEEKS 27-28" (30 April–13 May), with "0 of 2 completed". A message states: "Go to the Pathway Route Planner to choose the Focus topic for your subject. You may also choose other topics to study in your own time..". A "Pathway route planner" link is provided. A "Rolled forward" notification 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." The footer shows "S112 news".

# 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

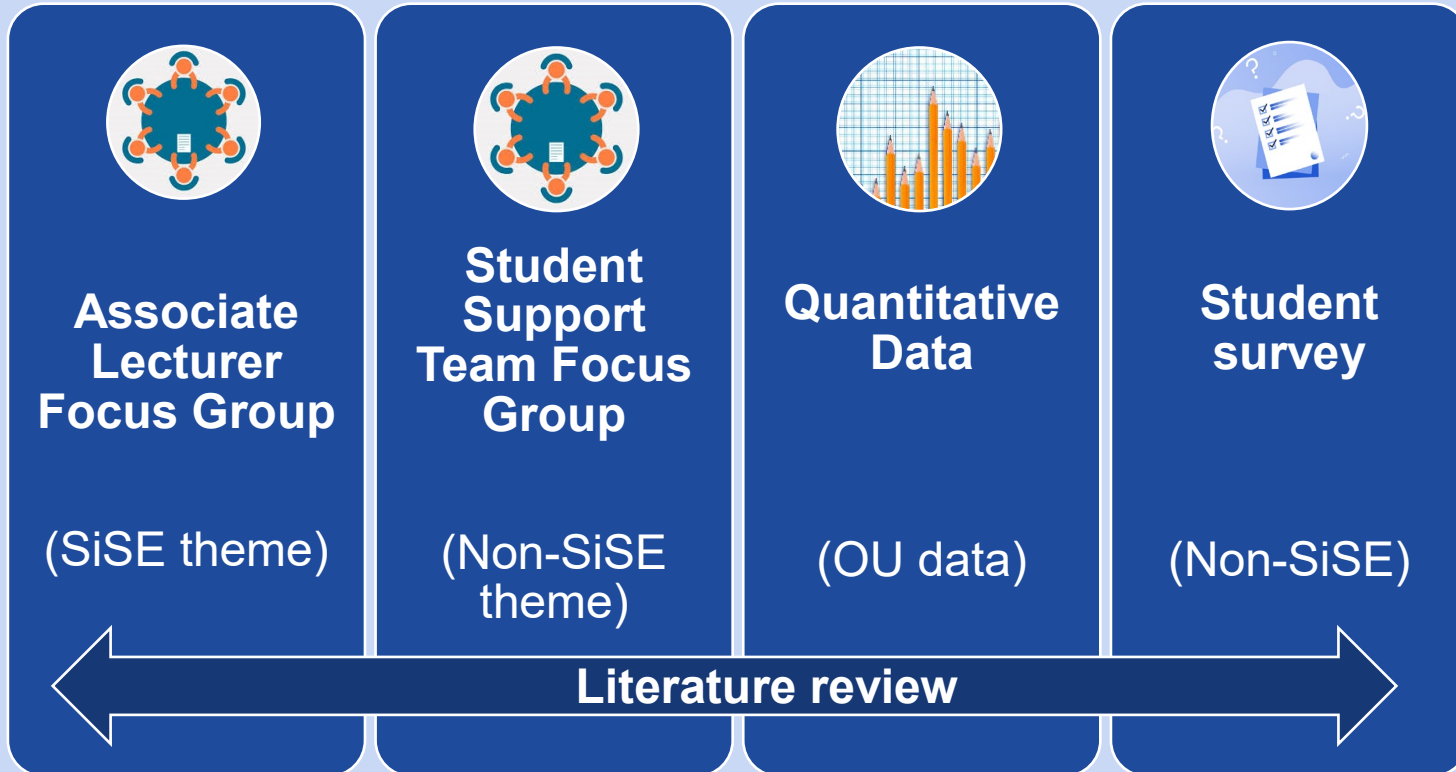
### Note on literature...

- 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.

## Research instruments used to evaluate print pack use and efficiency



All University ethical approvals obtained prior to starting.

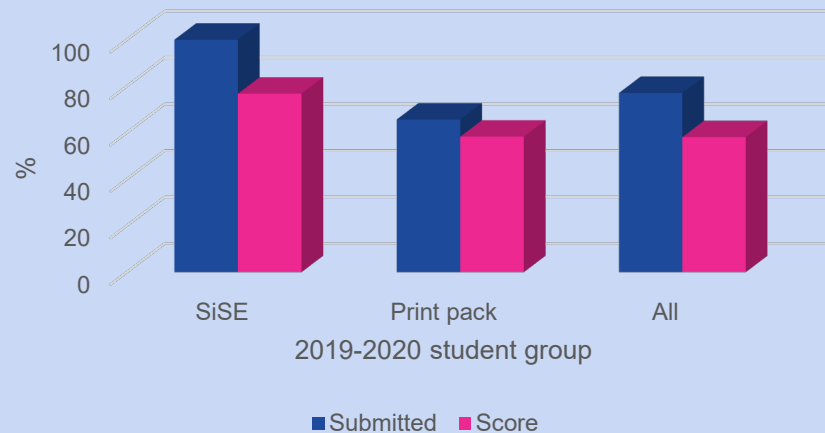
SiSE = Students in Secure Environments

## Quantitative data - baseline

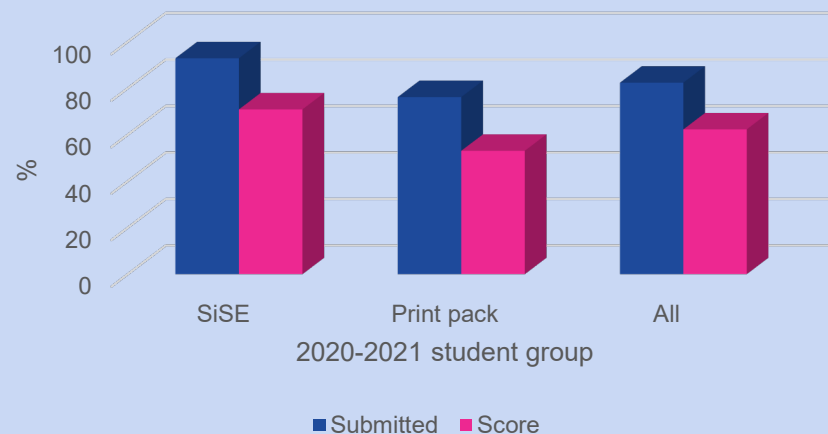
- S112 - Science: concepts and practice
- Comparison of previous two years' data
- Focus on first assignment submission and score
  - Least affected by pandemic
- SiSE perform better than whole cohort
- Print pack users lower than whole cohort
  - Many have complex additional needs

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

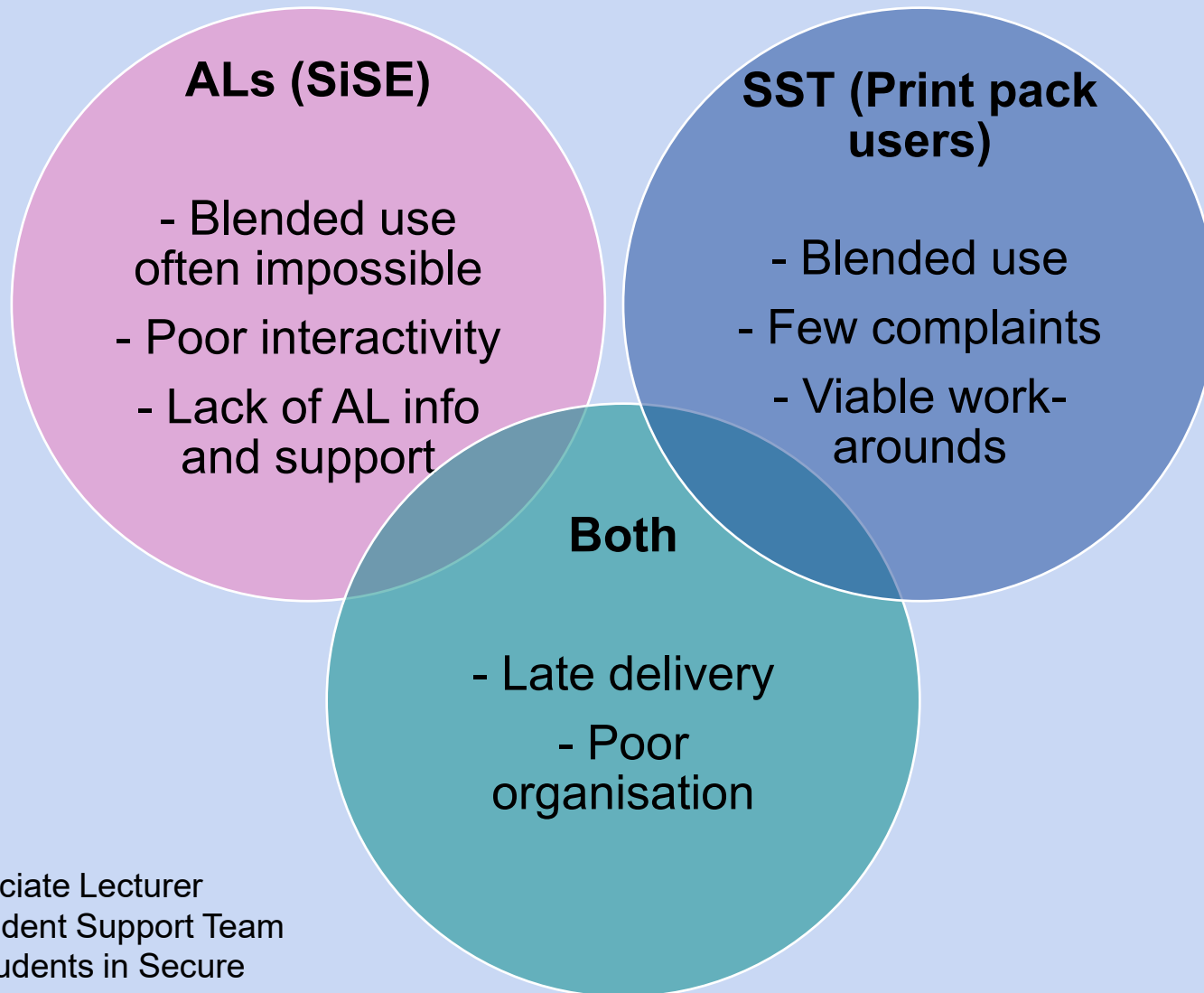
First assignment submission rates and mean scores for 2019-2020



First assignment submission rates and mean scores for 2020-2021



## Focus Groups



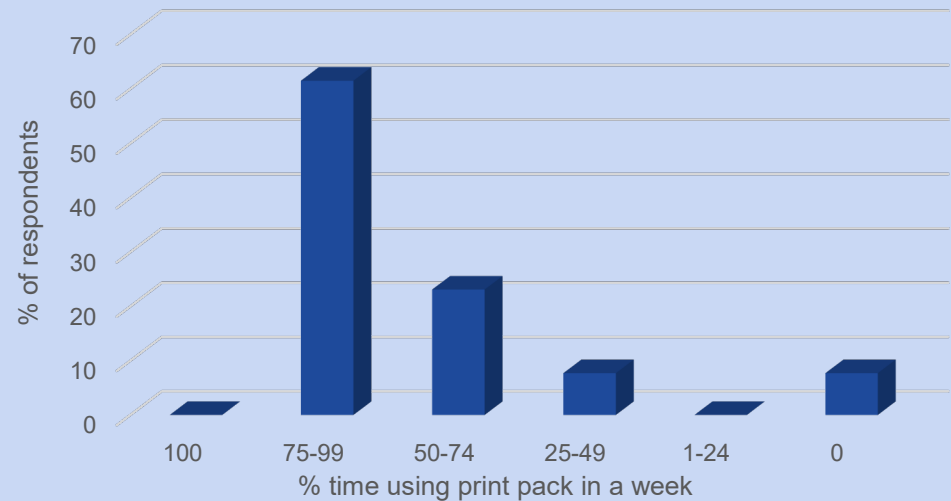
AL = Associate Lecturer  
SST = Student Support Team  
SiSE = Students in Secure Environments



## 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



## Quotes from 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*



## 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



## Next steps

Design of intervention for 2022-23

Training of AL champions

Post-intervention evaluation

## ACKNOWLEDGEMENTS

- Dr Jenny Duckworth – literature searching / review
- Associate Lecturers and Student Support Team colleagues participating in focus groups
- Student reviewers for questionnaire design
- eSTEEeM – The OU Centre For STEM Pedagogy – for funding



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**ANY QUESTIONS ?**

**THANK YOU**

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