

IMPERIAL

ADA Project 2024-2025

December 2024 – LA Community of Practice Update

IMPERIAL

Agenda

1. **Overview of project** — Mishaal

- Overview of ADA
- Managing the ADA project
- Working with Student Shapers
- Overview of Maths Schedule and Workload Collection Tool

2. **Maths Schedule and Workload Collection Tool** — Gaby

- Maths: Schedule and Workload Collection Tool Demo
- Lessons learnt

3. **Next steps** — Mishaal

Project Deliverables

The **Assessment Data Analytics (ADA)** project is a Faculty of Natural Sciences project, in which we are prototyping tools for two departments (Maths and Life Sciences). The **four data tools** we are prototyping are listed below. In this presentation, we will be providing an overview of the project + a deep dive into one of the tools (highlighted).

- i) A **tool for collecting schedules and workloads relating to module assessments** and a mapping with the assessment information in Banner
- ii) An **assessment marks management tool** for departments
- iii) A **workload & schedule visualisation tool for assessment & learning activities for staff**
- iv) A **workload & schedule visualisation tool for assessment & learning activities for students**, developed in collaboration with Student Shapers

Managing the Project

Planner Board

Below is a snapshot (from June) of our Planner board, which is where all the user stories live. The planner board categorises the user stories by stage (backlog, design, development, testing, approved). The stories are tagged by role, sprint, department – and contain wireframes for the dashboards we are developing + feature lists.

MODULES SELECTED: MODULE A MODULE B MODULE C

MODULES SELECTED: 3 TOTAL ASSIGNMENTS: 9

MA

MB

MC

ASSIGNMENTS

ASSIGNMENTS

ASSIGNMENTS

ASSIGNMENTS

MAY 2024 MONTH

1 2 3 4 5 6 7 8 9 10 11 12

Student feature

MATHS

1.3A: A workload and schedule visualisation tool to help Maths students with module selection

Wireframe 1.3A.jpg

1

STUDENT

MOST CONFIDENT SKILLS

LEAST CONFIDENT SKILLS

SKILLS SUMMARY

NAME: CID: USERNAME:

MODULE

ASSESSMENT

TERM

YEAR

Assessment	Marks	Required	Reflection	Action Plan	MCS	LCS

Student Marks

Student E portfolio

Tutor feature

Sprint 3

LIFE SCIENCES

1.3B-2: As a Personal Tutor, I would like to be able to access all my students' e-portfolio reflections simultaneously - without multiple clicks.

Wireframe 1.3B.2.JPG

STUDENT

MODULE

YEAR

NAME: CID: USERNAME:

Student marks by module/assignment

Class average student mark by module

ASSESSMENTS SUBMITTED: 3

ASSESSMENTS NOT SUBMITTED: 1

UPCOMING ASSESSMENTS: 1

MODULE	MARKS	PERCENTAGE
COMM		75%
LIFE40001		80%
LIFE40002		85%

ASSESSMENT	MARKS	PERCENTAGE
	X	X%
	X	X%
	X	X%

Student Marks

Student E portfolio

Tutor feature

Sprint 1

LIFE SCIENCES

1.3B-1: As a Tutor, I would like to see a dashboard with student transcripts/grade so that I can locate it easily and write student recommendations

Wireframe 1.3B.1.JPG

Managing the Project Timeline

Below is a snapshot of the project timeline. We have been using a Gantt chart type timeline to track project deliverables and key tasks since October 2024.

[illegible]

Managing the Project

A collaborative, iterative project

As part of the project, we are in constant communication/are liaising with several stakeholders from different departments. We worked with the Data Solutions Manager, Undergrad Office, and faculty as our main points of contact during the development phase of the project. Now we are working closely with potential end-users who are helping test the prototypes.



Please submit the assessments of your module here:

Module name

Assessment name

Assessment Type

Maximum Mark

Weight of Total Module Mark (%)

Assessment Release Date

31/12/2001

Additional comments

Assessment comments...

Location

Submit To

Time Required

Due date

31/12/2001

Submit assessment information

Back

Next

Overview

As part of the ADA project, we have developed an app in Power Apps for the Maths department to collect assessment and module information (like number of assessments, weighting of assessments, time required etc.).

Instructions

1. Please review the steps on the following tab, labelled Test Script

2. Copy the tab and rename your tab to Test Script - XX, where XX are your initials, and add your name in cell C2

3. Follow the step listed in column C (Process) in the order they are listed.

4. As you action each step, please categorise the task as complete or unsuccessful. You can also categorise it as other, if needed. Make sure you provide comments for anything that you categorise as unsuccessful or other. And do add screenshots, if that could help explain your comment.

5. Please add the date you have completed the testing for each step in the column titled date.

6. If you have additional comments, please add them in cell H6.

Currently collecting and analysing feedback, will decide collectively once all testing for this round is complete how we will proceed.

Student Partners

Training and Design Thinking

The SPs started with us full-time for two weeks, in which we provided general training to them—and an overview of the ADA project. They spent some time familiarizing themselves with design thinking processes, received training on how to clean data, develop tools in Power BI and how to conduct focus groups/user testing sessions.

User Persona: Mathematics

Description of student (year, degree, and any other relevant information)?

- Transitioning from Year 1 to 2
 - Mathematics
 - On 2.1
- Enjoys maths and is eager to specialise in the course further with module selections, especially in third year
- Not too concerned with internships / placements etc. right now, will likely do a UROP in second year

What are the challenges they are facing?

- Have not had to choose or decide modules before so are trying to figure that out
 - Doing well on their course but wants to improve for next year
- Did not particularly like some modules from first year so wants to make good choices for year 2 so that they can do well
- Not sure which are the right modules to take for year 2 and what doors that will open / close for year 3 — wants to take Network Science as a module, but they are not sure how useful it will be, and have heard probability / stats modules are more useful so are considering taking those they don't know if they will actually like it
- Are considering doing a PhD so wants to find an area of research they are really interested in and could do research on in the future

Student habits (Are they currently looking at their assessment marks? When do they look at them? How often do they check them? Why do they check them? If they aren't looking at them, what are the reasons? etc.)

- Look at them after every test
- If they have not been released they check often to see as soon as they are — they care a lot about seeing this kind of information
- Uses grades in initial tests / quizzes to determine whether the module is right for them or if they should change to a new one

What are the goals they want to accomplish?

- Be on track for 1st next year
- Use their feedback well for new tests so that they can see where to improve and what to work on
- Plan better for second year because they felt unprepared and 'thrown in' in first
 - Likely wants to go into research in the future

User Persona: Life Sciences

Description of student (year, degree, and any other relevant information)?

Year 2

Biological Sciences

Finished core modules

First time choosing their modules

Year 3

Biological Sciences

Applying for internships/master's/turn or education programme/job - need certain grade requirements

What are the challenges they are facing?

Wants to have a clear idea of the grades they have achieved in the previous core modules to indicate what subjects they are more confident in

Wants a quick way to see grade progression

- (1) throughout 1st, 2nd and 3rd year
- (2) throughout modules to predict final classification - needed for applications

Student habits (Are they currently looking at their assessment marks? When do they look at them? How often do they check them? Why do they check them? If they aren't looking at them, what are the reasons? etc.)

E-portfolio provides a grid format to looking at grades - used as a way to track grades and feelings about the assessments filled out.

Filled out after the return of an assessment. Submitted to Personal Tutor on a termly basis for discussions during meet-ups.

E-portfolio - Same as Year 2 student

What are the goals they want to accomplish?

(1) Breakdown of grades achieved on assessments (formative Vs summative) for each module.

(2) Core principles taught in the core modules listed for each module - allows them to pick optional modules based on the concepts they enjoyed previously

(1) Need to look through a grid spreadsheet - by the end of three years is long - making it a tedious way to track all the assignments done.

(2) Want to see performance in one module if the module is important in their application for post degree.

User Story Mapping: Life Sciences

User Activities (current)

User Activities (desired)

C-1.1

As a Personal Tutor, when I am having a conversation with my tutee, I rely on them feeding me information (grades) to have an informed/curated discussion with them

D-1.1

As a personal tutor, I would like to see all relevant student information available in a single dashboard to help inform any conversation with my tutees

C-1.1

As a Biological Sciences student, a mandated way to track grades from assignments throughout the year is through a spreadsheet in the E-portfolio.

D-1.1

** As a Biological Sciences student, I would like to track grades from assignments in a graph format so that I can track my progress easily.

C-1.2

As a Biological Sciences student, module selection is based on introductory videos and module guides.

D-1.2

As a Biological Sciences student, it would make it easier to choose modules if I could see a breakdown of the core principles/ideas taught in the core modules as I would be able to pick according to what I had previously enjoyed.

User Story Mapping: Mathematics

User Activities (current)

User Activities (desired)

C-1.1

As a Personal Tutor, when I am having a conversation with my tutee, I rely on them feeding me information (grades) to have an informed/curated discussion with them

D-1.1

As a personal tutor, I would like to see all relevant student information available in a single dashboard to help inform any conversation with my tutees

C-1.1

As a student, whilst there are short module descriptions available to me, they are not sufficient to make an informed decision about the modules I will want to choose in advance.

D-1.1

As a student, I would like to have student testimonials about certain modules available, as well as the necessary requirements / prerequisites, so that I can make a much better decision about module selections, and spend less time going through this process.

C-1.2

As a student, I currently have to through different processes for each module to find lecture notes / problem sheets / solutions etc., which makes it quite annoying to quickly get through if I want to just have a brief overview.

D-1.2

As a student, I would like for there to be a standardised process for each module where I can see all the problem sheets / lecture notes ... in one place, so that I don't have to navigate through many links and the process is more efficient.

C-1.3

As a student, there is currently

D-1.3

**As a student, I would like that lets me see all this info. very quickly, perhaps with charts.

EXAMPLE

Module Y on Blackboard

Log in

Navigate to module

Navigate to marks/feedback section of the module

Load blackboard website in browser

Find correct module on the landing page

Click into the assessment info folder for the module (Life Sciences)

Imperial College London

ADA Project 2024-2025

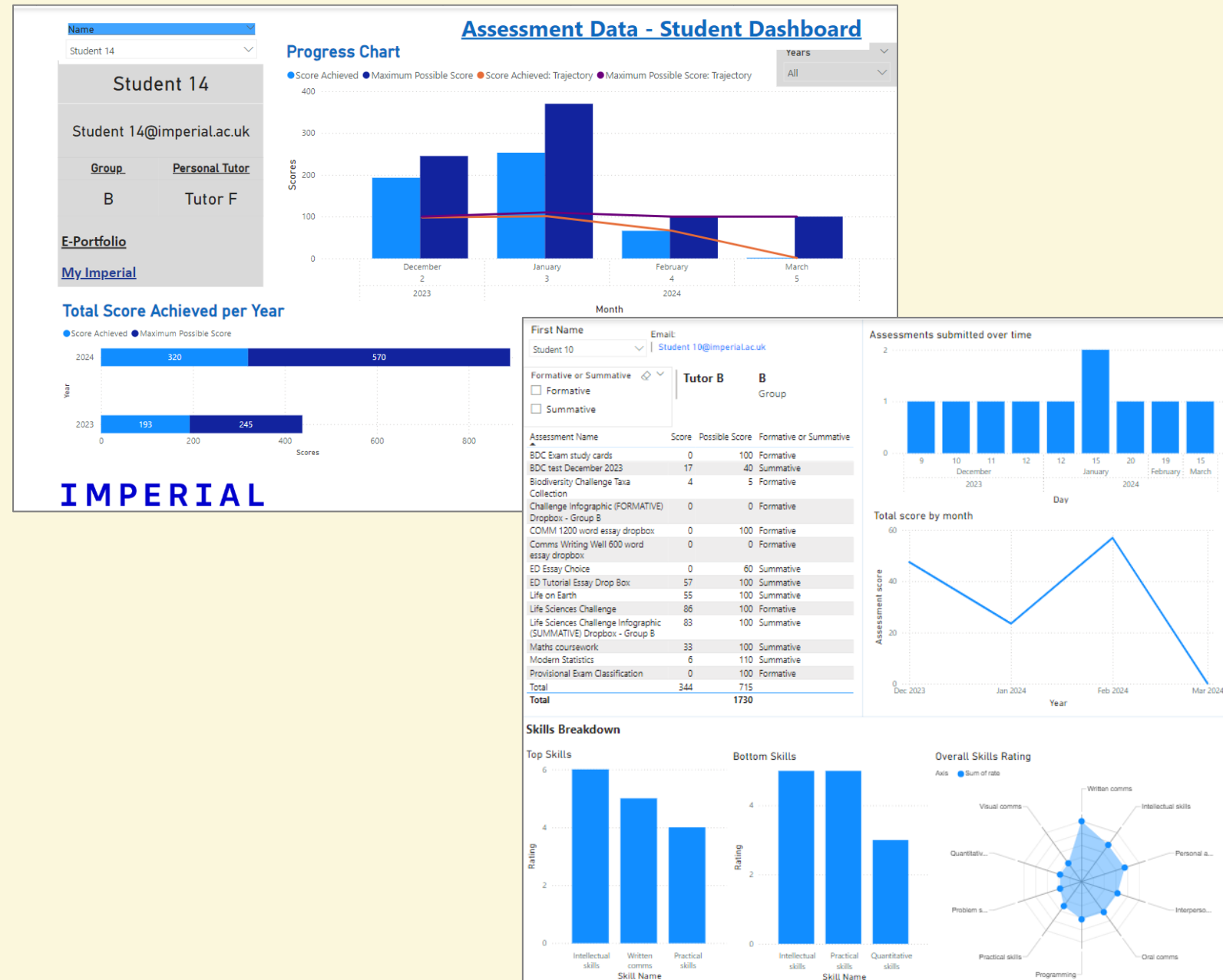
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12/12/2024

Student Partners

Development and Power BI

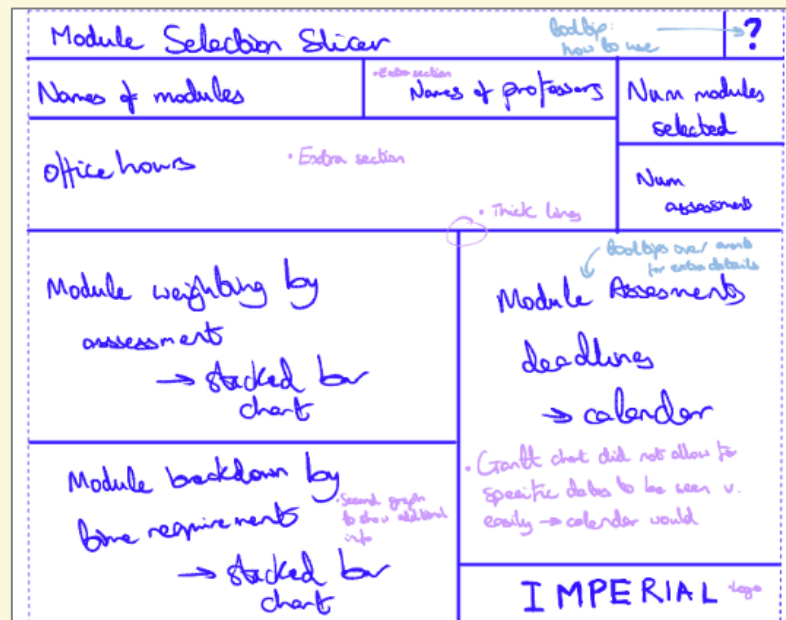
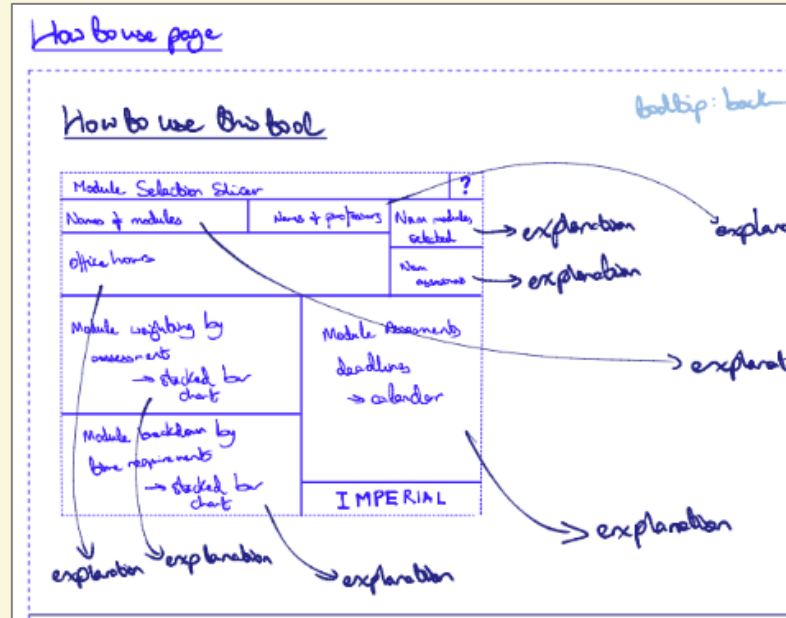
- Started working in Power BI
- Worked with sample, anonymised datasets, and prepared prototypes
- Presented work + received feedback
- Reviewed each other's work (peer review)
- Discussion on how to make dashboards inclusive/accessible



Student Partners

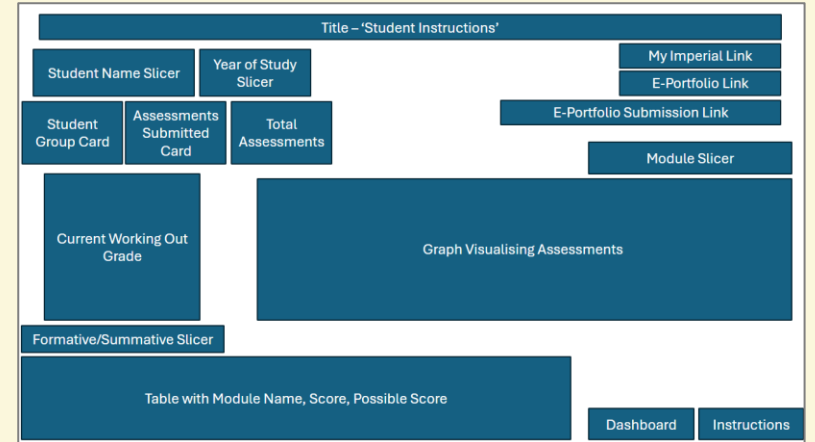
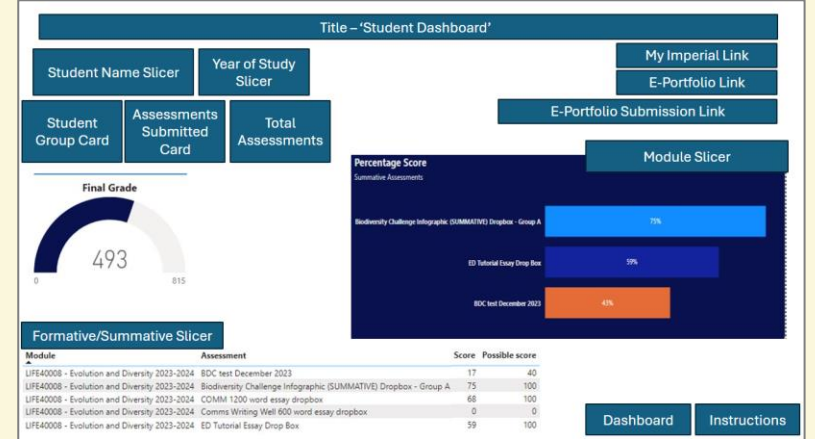
Wireframes

- Reviewed wireframes/tools (annotating, suggesting changes)
- Developed wireframes for the student-facing versions of these tools
- Shared the wireframes with us, received feedback, and iterated
- Began their development work



Student Dashboard

Maintaining the Same Visual as the Tutor Dashboard – Making it easy to navigate between the two Dashboards during Tutor-Tutee Meetings.

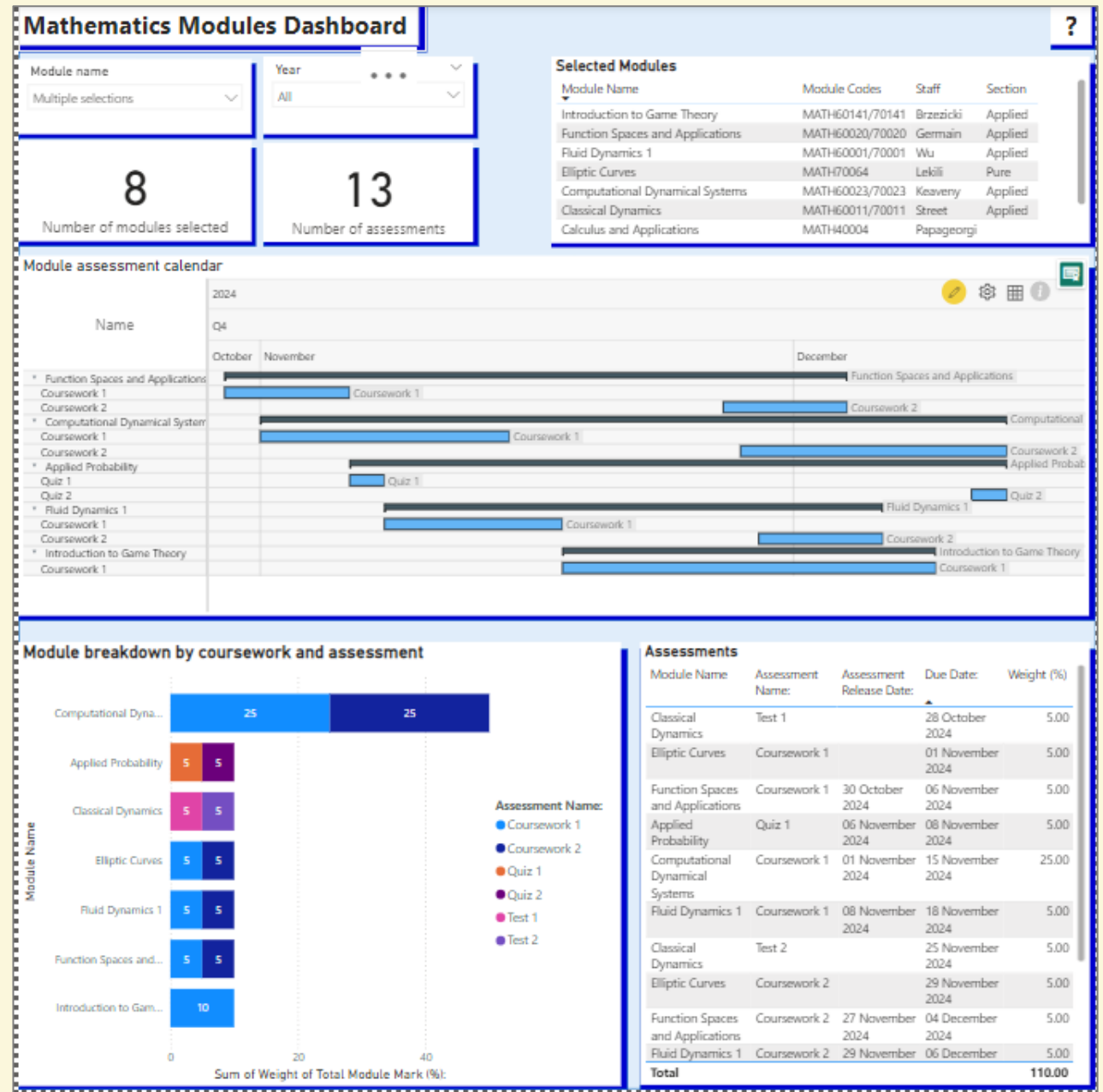


Student Partners

Development and User Testing

The SPs continued their development work, and once a satisfactory first version was created, they started creating testing plans. As part of this, they:

- Reviewed resources,
- Created drafts for plans and received feedback (iterative process),
- Ran the focus groups + user testing sessions,
- Are now collating feedback



Student Partners

Feedback Analysis

After conducting their testing, the students started analysing the data they collected.

- Data coding in Excel (thematic analysis)
- Transcription analysis AI tools (DoveTail)
- For quantitative data, they are creating visualisations in Excel

Participant ID	Q1.1	Q1.2	Q1.3	Q1.4	Q1.5	Q1.6	Q1.7	Q1.8	Q2.1
Student 1	Y	Y	Y	Y	Y	Y	N	N	Y
Student 2	N	Y	Y	Y	Y	Y	N	N Reduce	Y
Student 3	Y I think it is quit	Y	Y	Y	Y	Y	N	N I think th	Y
Student 4	Y	Y	Y	Y	Y	Y	N	Y- I think i	Y
	N Lots of information on the page, I'd be tempted to skip. Perhaps call it a								
Student 5	help page?	Y	Y	Y	Y	Y	N	Yes, a page	Y
Student 6	Y	Y	Y	Y	Y	Y	N	Y Maybe as	Y

Feedback Theme	Feedback
Weighting % Should Be Whole Numbers or 1 d.p.	"1 d.p. would make sense for thi
Weighting % Should Be Whole Numbers or 1 d.p.	"I don't know why there are dec
Title Good?	"simple"
Title Good?	"the title is clear"
Title Good?	"We thought it was fine"
Slight Issues in Data (e.g., Deadlines)	"Some deadlines seemed off ...
Slight Issues in Data (e.g., Deadlines)	"We noticed minor data errors"
Slicers Confusing	"[The slicers] could be explained
Slicers Confusing	"I didn't understand how to selec
Scientific Computation Total Wrong	"We noticed issues with [the tota
Scientific Computation Total Wrong	"The total seemed incorrect... [it
Number of Modules Selected Useful?	"[It] provided clarity"
Number of Modules Selected Useful?	"[It] was helpful for tracking prog
Number of Modules Selected Useful?	"Useful for planning and staying
Number of Modules Selected Useful?	"Clear and easy to use."

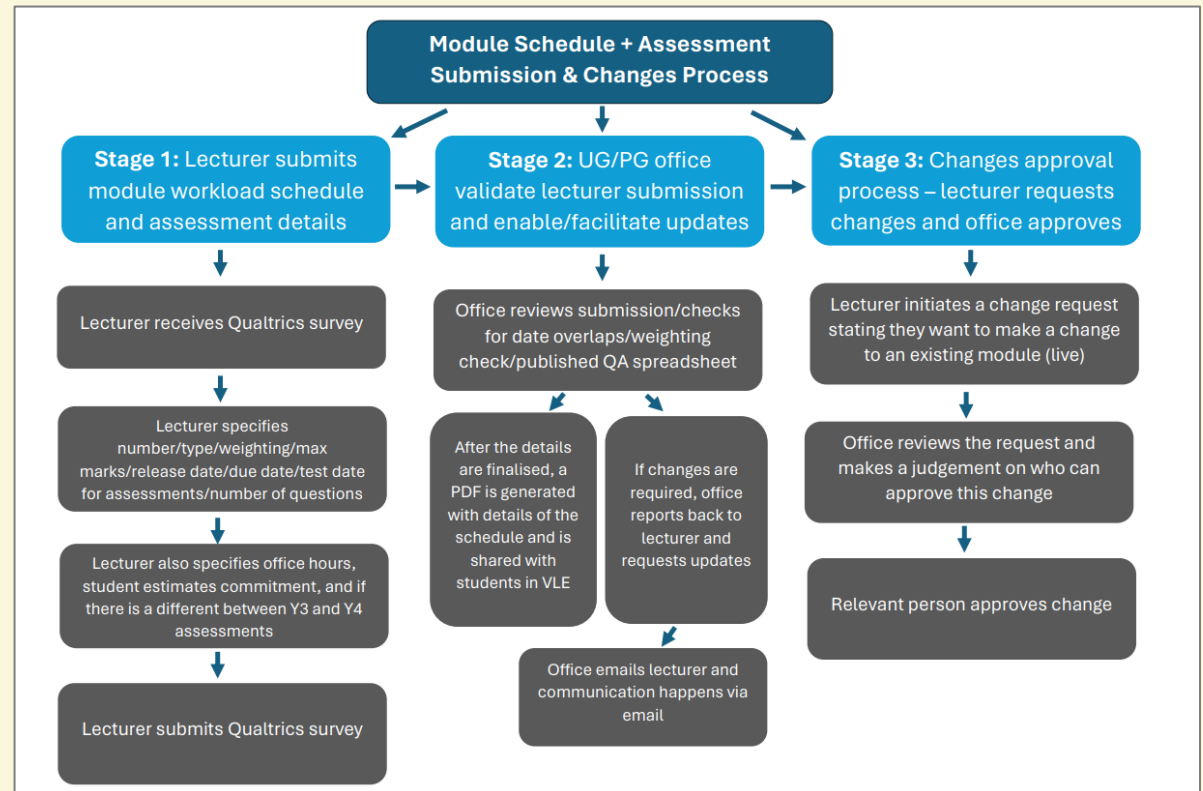
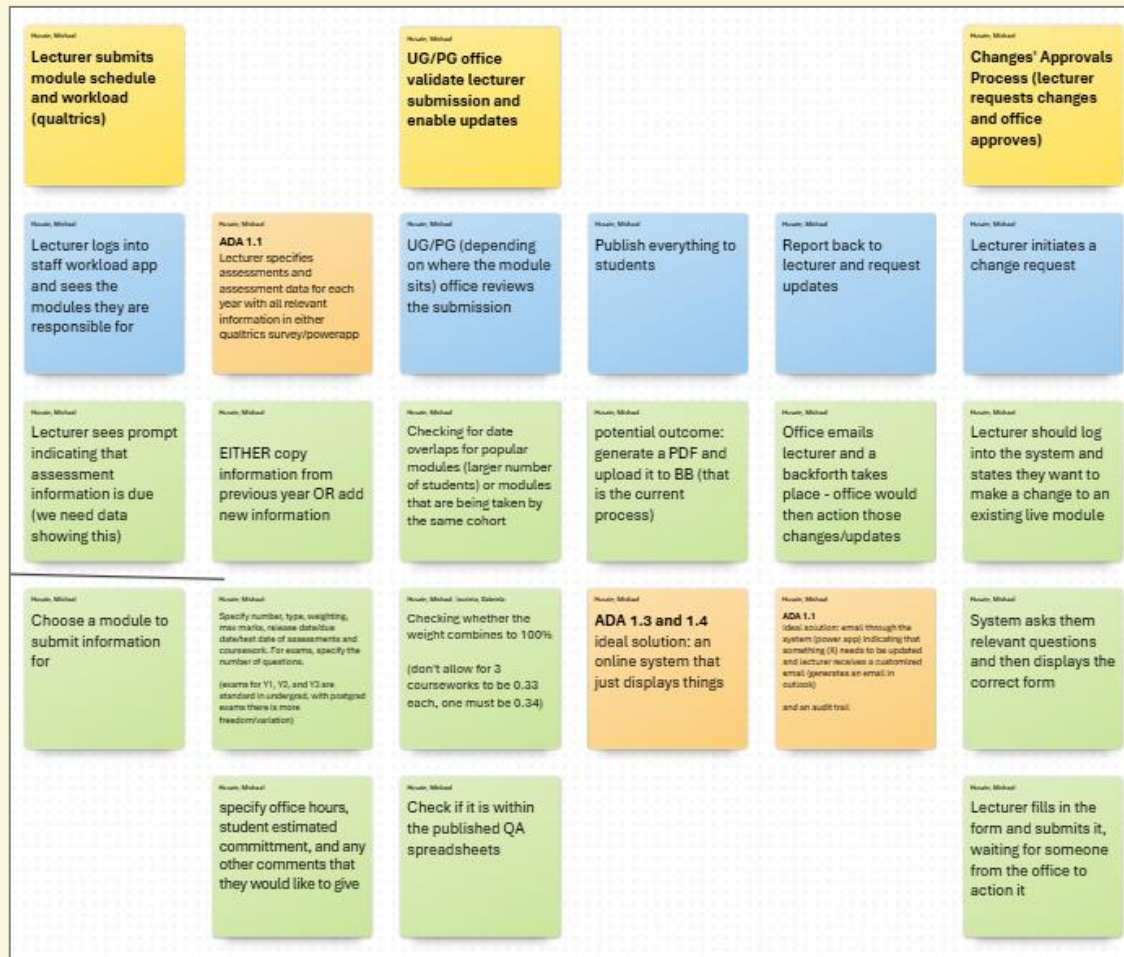
Student Partners

Key takeaways

- Important to upskill SPs (data cleaning, documentation, and testing, were two weeks enough?)
- Need for flexibility, and contingency plans (especially if the SPs do things differently)
- Always be willing to provide advice and recommendations to them as needed
- Have frequent check-ins if working asynchronously (3 check-ins a week, email + Teams used for communication)

Maths tools – Step I: Requirements Gathering

We conducted Requirements Gathering + User Mapping sessions with the Data Solutions Manager in the department, capturing the current processes and the desired features/updates in future versions.



Maths tools – Step II: User Stories

Each requirement was converted into a user story and was labelled as a user-X feature with prioritisation and overall status added in labels.

Student feature

MATHS

...

☐ As a student, I would like to be able to view and submit module choices through the dashboard

Student feature

MATHS

☐ As a student, I would like to view a schedule for maths modules

Student feature

MATHS

☐ As a student, I would like to see and interact with an email function to enable me to email UG/PG office with queries

Lecturer feature

MATHS

☐ As a lecturer, I would like to choose a module to submit information/data for in the app

Lecturer feature

Document in Report

MATHS

☐ As a lecturer, I would like to see a prompt in the app indicating that assessment information for Module X is due by X date

Lecturer feature

Document in Report

Out of Scope

MATHS

☐ As a lecturer, I would like to be able to log into a staff workload app and see the modules I am responsible for

Office feature

Document in Report

MATHS

☐ As a UG/PG officer, I would like there to be a record of any communication or actions that take place with regard to a module change request

Office feature

Document in Report

MATHS

☐ As a UG/PG officer, I would like to have the option to send automated emails to reviewers and lecturers for module change request tasks

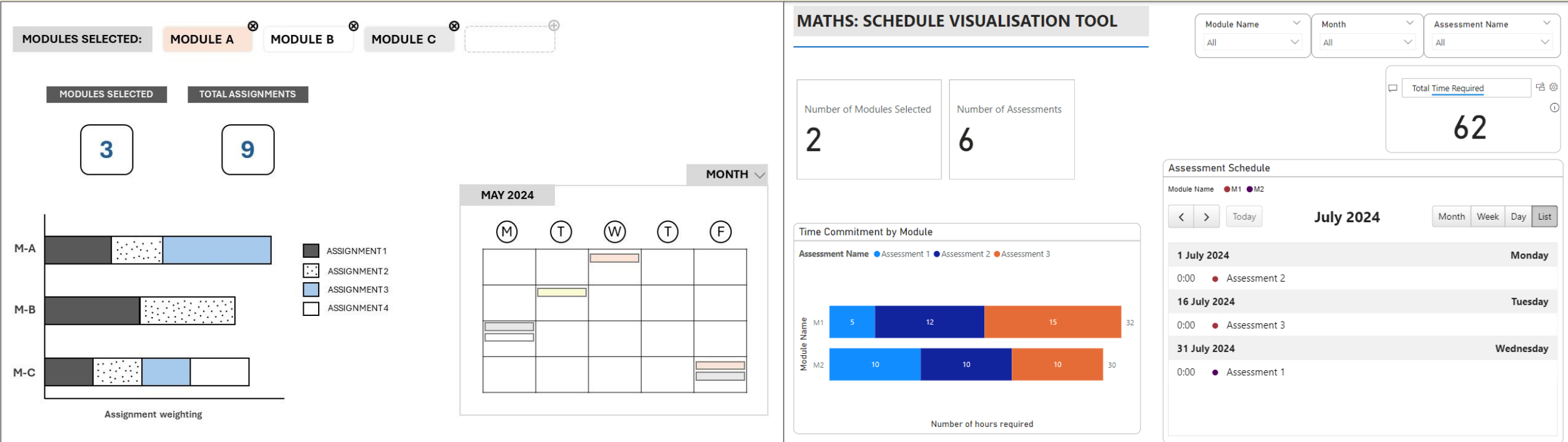
Office feature

Document in Report

MATHS

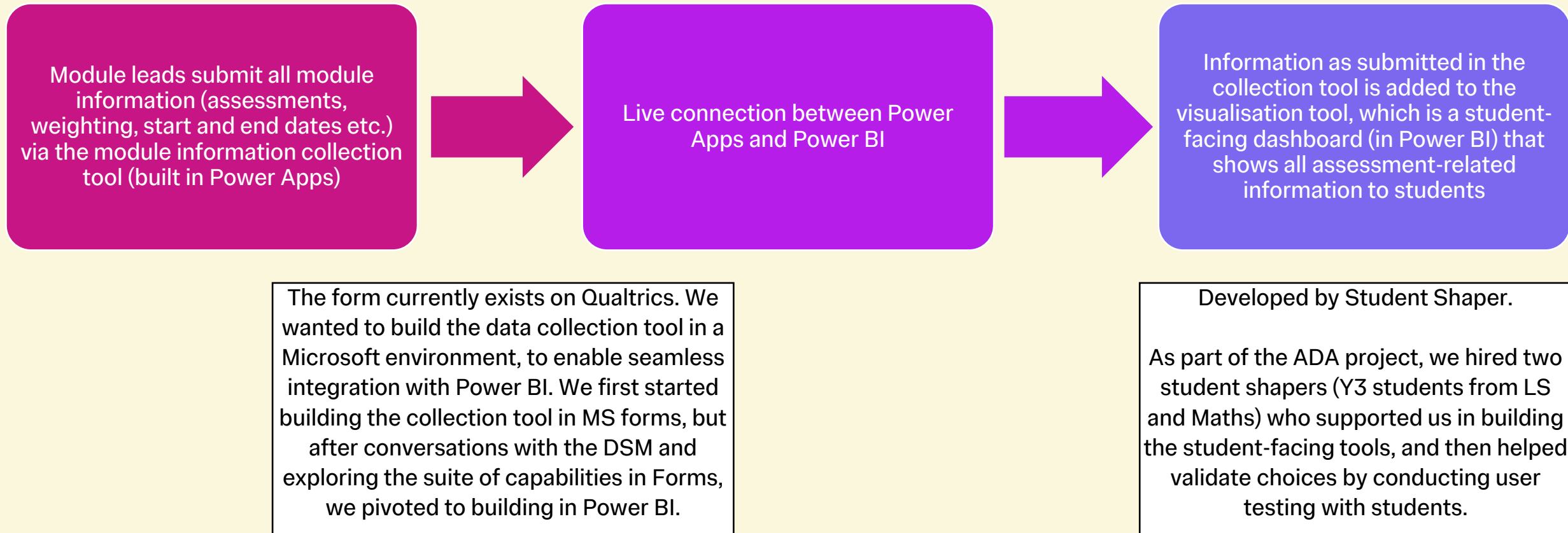
Maths tools – Step III: Design

Based on the requirements, we developed early wireframes and adapted them as needed. Next, we worked with a sample dataset to understand what format the data needed to be in to be ingested in the Power BI environment from the Power Apps environment. A couple of examples of our process are attached below.



Maths tools – Step IV: Development

User stories were actioned according to a prioritisation list. Development work occurred in two-week sprints, at the end of which we would meet with our key stakeholder and provide demos/updates on progress. There are two parts to the tool that needs to be developed: one part is a *module information collection tool*, and one part is a *module information visualisation tool*.



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Demo

Mathematics Module Schedule and Workload Data Collection App

Lessons learnt

Mathematics Module Schedule and Workload Data Collection App

- **Why Power Apps**
 - Process that required a more systematic approach for data collection and data analysis.
 - Offers a more efficient way to collect, connect and process data (in comparison with Excel/Qualtrics/Forms).
 - Tool that can be set as needed.
- **Challenges while using the tool**
 - It is very sensitive!
 - You must calibrate every detail and learn to use the available functions. The one I loved: Patch function.
 - Dataverse tables will make the App available only for people with Power Apps license. Alternatives: using SharePoint lists, Excel online.
 - Exploratory project: changes were a new challenge each time. Documentation matters.
- **Collaboration with Ciprian Diaconita (FoNS Digital Systems Manager)**
 - Learnt how to create a solution for the project.
 - How to go from development environment to production and test environments.

Next Steps

In the summer semester (April – July 2025), we will:

1. Review the set of requirements and track progress against original aims
2. Summarise all project findings and user experience data
3. Make recommendations to central teams and "SLAB" and other teams leading similar projects