Enhancing Student Autonomy in Technical Education through Structured Workflows

Elliott Hall | Specialist Technician (L&T) Wearable Technology | e.hall@fashion.arts.ac.uk


My Name is Elliott Hall
and I am the specialist technican in
Wearable Technology
at the Digital Leaning Lab in the
London College of Fashion


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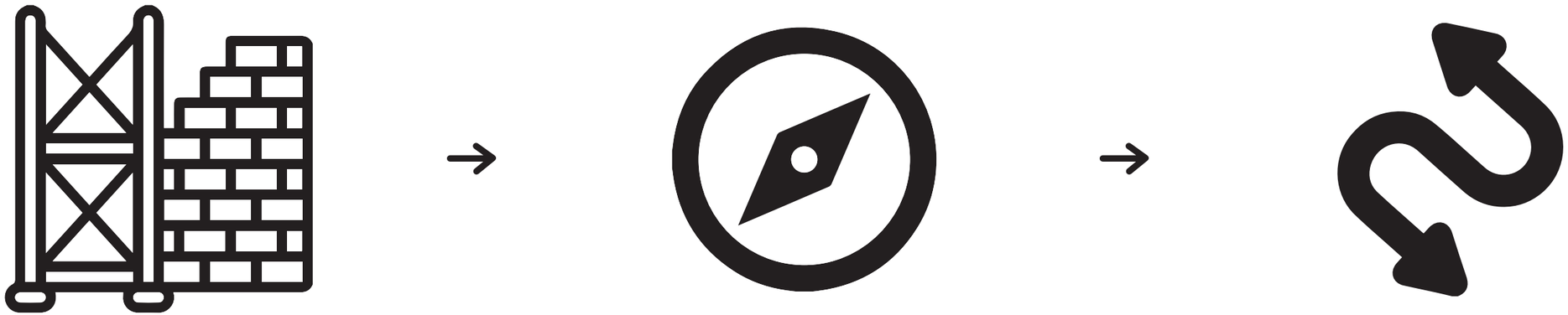
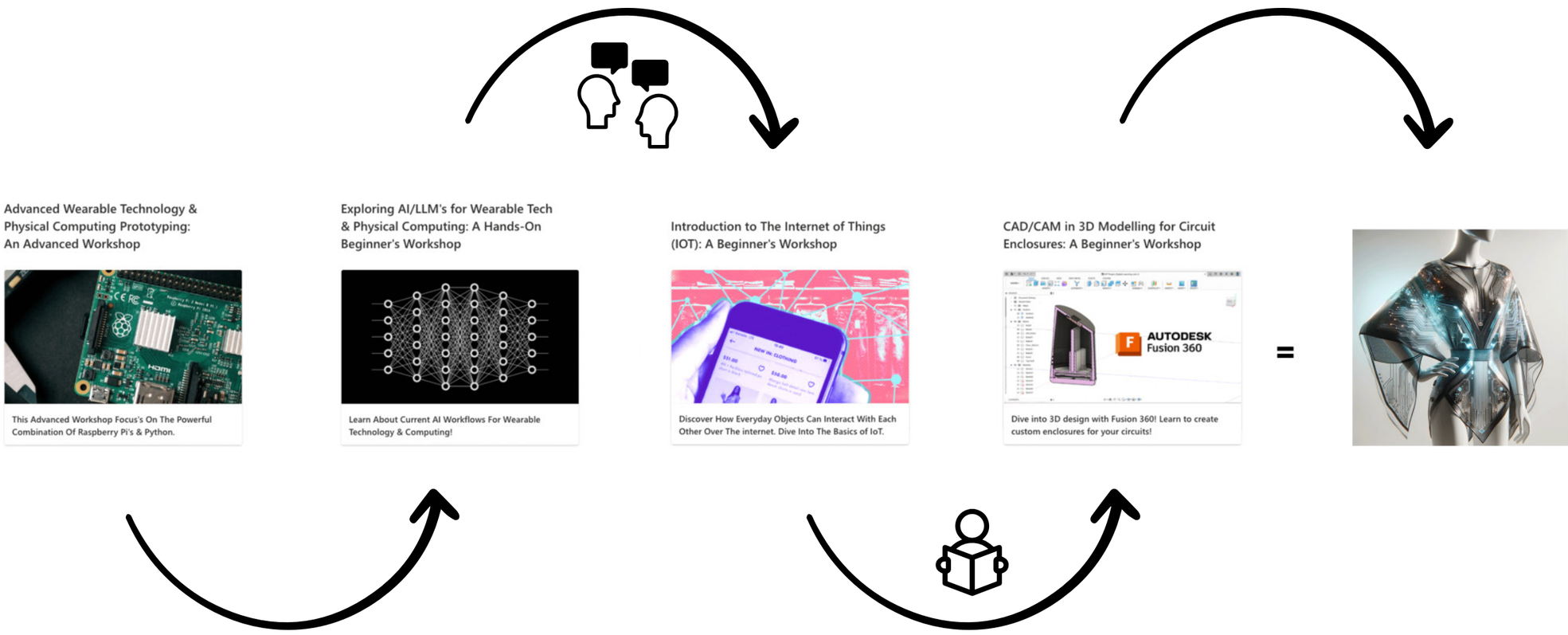
How can a structured workflow incorporating scaffolded and flipped learning models enhance student autonomy and teaching efficiency in technical education?



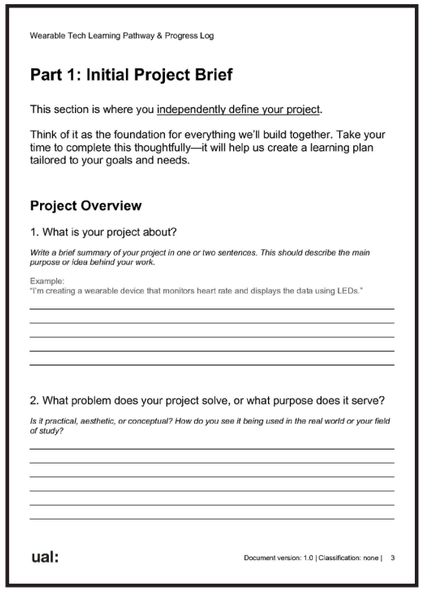
Supportive → Autonomous → Flexible



Steps Taken, In Order

End Goal

The 'Learning Pathway Document' and its Core Elements



Wearable Tech Learning Pathway & Progress Log

Part 1: Initial Project Brief

This section is where you independently define your project.

Think of it as the foundation for everything we'll build together. Take your time to complete this thoughtfully—it will help us create a learning plan tailored to your goals and needs.

Project Overview

1. What is your project about?

Write a brief summary of your project in one or two sentences. This should describe the main purpose or idea behind your work.

Example:
"I'm creating a wearable device that monitors heart rate and displays the data using LEDs."

2. What problem does your project solve, or what purpose does it serve?

Is it practical, aesthetic, or conceptual? How do you see it being used in the real world or your field of study?

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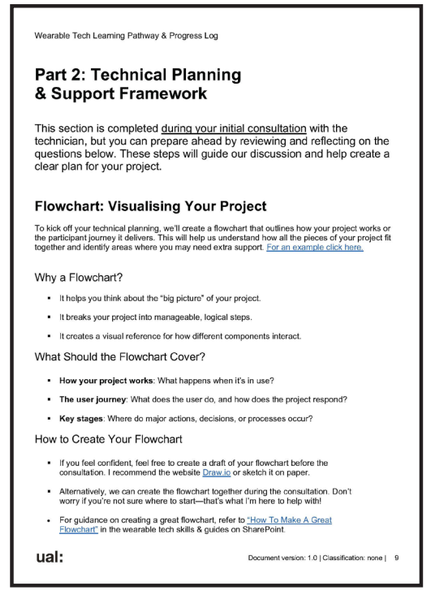

Wearable Tech Learning Pathway & Progress Log

Part 2: Technical Planning & Support Framework

This section is completed during your initial consultation with the technician, but you can prepare ahead by reviewing and reflecting on the questions below. These steps will guide our discussion and help create a clear plan for your project.

Flowchart: Visualising Your Project

To kick off your technical planning, we'll create a flowchart that outlines how your project works or the participant journey it delivers. This will help us understand how all the pieces of your project fit together and identify areas where you may need extra support. For an example click here.

Why a Flowchart?

- It helps you think about the "big picture" of your project.
- It breaks your project into manageable, logical steps.
- It creates a visual reference for how different components interact.

What Should the Flowchart Cover?

- **How your project works**: What happens when it's in use?
- **The user journey**: What does the user do, and how does the project respond?
- **Key stages**: Where do major actions, decisions, or processes occur?

How to Create Your Flowchart

- If you feel confident, feel free to create a draft of your flowchart before the consultation. I recommend the website Draw.io or sketch it on paper.
- Alternatively, we can create the flowchart together during the consultation. Don't worry if you're not sure where to start—that's what I'm here to help with!
- For guidance on creating a great flowchart, refer to "How To Make A Great Flowchart" in the wearable tech skills & guides on SharePoint.

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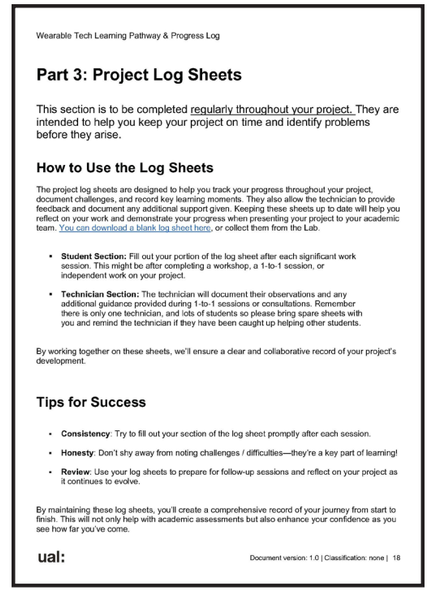

Wearable Tech Learning Pathway & Progress Log

Part 3: Project Log Sheets

This section is to be completed regularly throughout your project. They are intended to help you keep your project on time and identify problems before they arise.

How to Use the Log Sheets

The project log sheets are designed to help you track your progress throughout your project, document challenges, and record key learning moments. They also allow the technician to provide feedback and document any additional support given. Keeping these sheets up to date will help you reflect on your work and demonstrate your progress when presenting your project to your academic team. You can download a blank log sheet here, or collect them from the Lab.

- **Student Section:** Fill out your portion of the log sheet after each significant work session. This might be after completing a workshop, a 1-to-1 session, or independent work on your project.
- **Technician Section:** The technician will document their observations and any additional guidance provided during 1-to-1 sessions or consultations. Remember there is only one technician, and lots of students so please bring spare sheets with you and remind the technician if they have been caught up helping other students.

By working together on these sheets, we'll ensure a clear and collaborative record of your project's development.

Tips for Success

- **Consistency**: Try to fill out your section of the log sheet promptly after each session.
- **Honesty**: Don't shy away from noting challenges / difficulties—they're a key part of learning!
- **Review**: Use your log sheets to prepare for follow-up sessions and reflect on your project as it continues to evolve.

By maintaining these log sheets, you'll create a comprehensive record of your journey from start to finish. This will not only help with academic assessments but also enhance your confidence as you see how far you've come.

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Step 1

Student Independently Completes Section One

This section outlines the student's goals for their project, detailing their current skills and expectations while setting a foundation for development.

Step 2

Student with Technician Completes Section Two

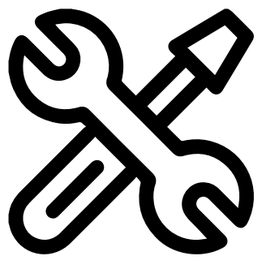
This section introduces the student to the technical area, enabling the technician to highlight missed opportunities, manage project expectations, and establish realistic timelines.

Step 3

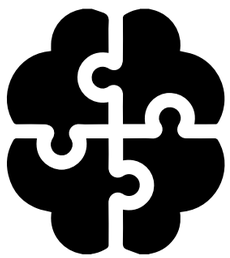
Student Completes Daily Log Entries

This section serves as a log of major breakthroughs, unexpected problems, and their solutions, allowing the technician and academic team to track progress.

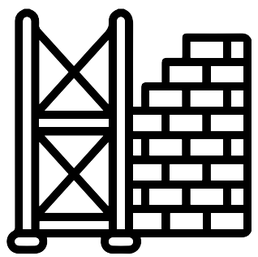
A copy of the 'Learning Pathway Document', will be available to download for review in the chat during the Q&A interim.



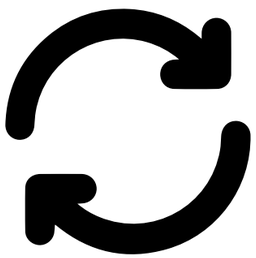
Known ADHD Support Tools



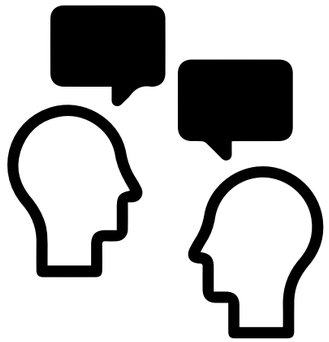
Universal Design for Learning Best Practices



Scaffolded Learning Methodologies

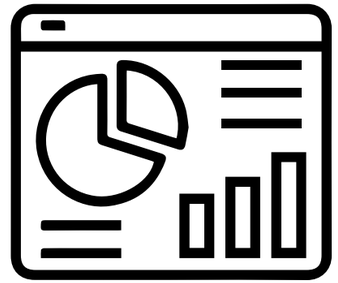


Flipped Classroom Methodologies



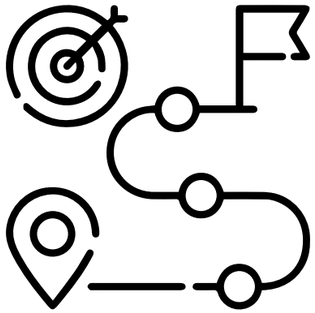
Regular Scheduled
1-to-1 Reviews

Technician
Accountability

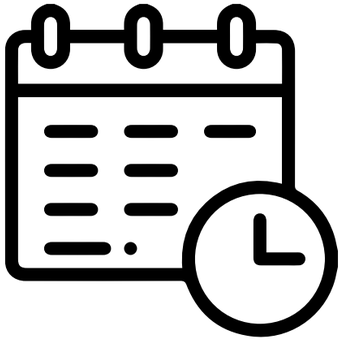


Consolidated Information
& Visual Aids

Checklists &
List Building



Broken Down
Negotiated Milestones



Agreed-upon Tutorial &
Workshop Planning

Known supportive tools for students with ADHD (Betteridge, 2024; Advance HE, 2025; CAST, 2024; Zelenka, 2017)

"Training in inclusive practice and learning aids the development of a clear and coherent educational programme for all students... UDL is particularly helpful for students and lecturers as the strategies are simple to implement, can have a positive impact on the learning experience of all students..."
(Advance HE, 2025, n.p.)

UDL Top Design Tips	**My Learning Resource Implementation**
Support Relevant Goal-Setting	*Students define their goals in a self-declared project brief, refined through an initial consultation to ensure they are achievable.*
Communicate High Expectations for All and Recognise Variability	Structured support—workshops, one-to-one sessions, and tutorials—helps all students meet high standards. Customisable tools like checklists, visual aids, and milestones adapt the workflow to individual needs, providing a clear framework for creativity.
Promote Disciplinary Expertise	Specialised learning resources and a scaffolded approach build foundational knowledge and encourage deeper engagement - where the student chooses to engage.
Focus on the Process, Not Just the Outcome	A dynamic log tracks progress and challenges, with workshops and feedback guiding steady growth and reflection.
Guide Self-Reflection	Consultation and feedback sections encourage students to assess their progress, view failures as learning opportunities, and refine their approach over time.

CAST (2024) Top 5 UDL Tips for Fostering Expert Learners. CAST Inc.

Available at: https://www.cast.org/products-services/resources/2017/udl-tips-fostering-expert-learners (Accessed: 24 January 2025).

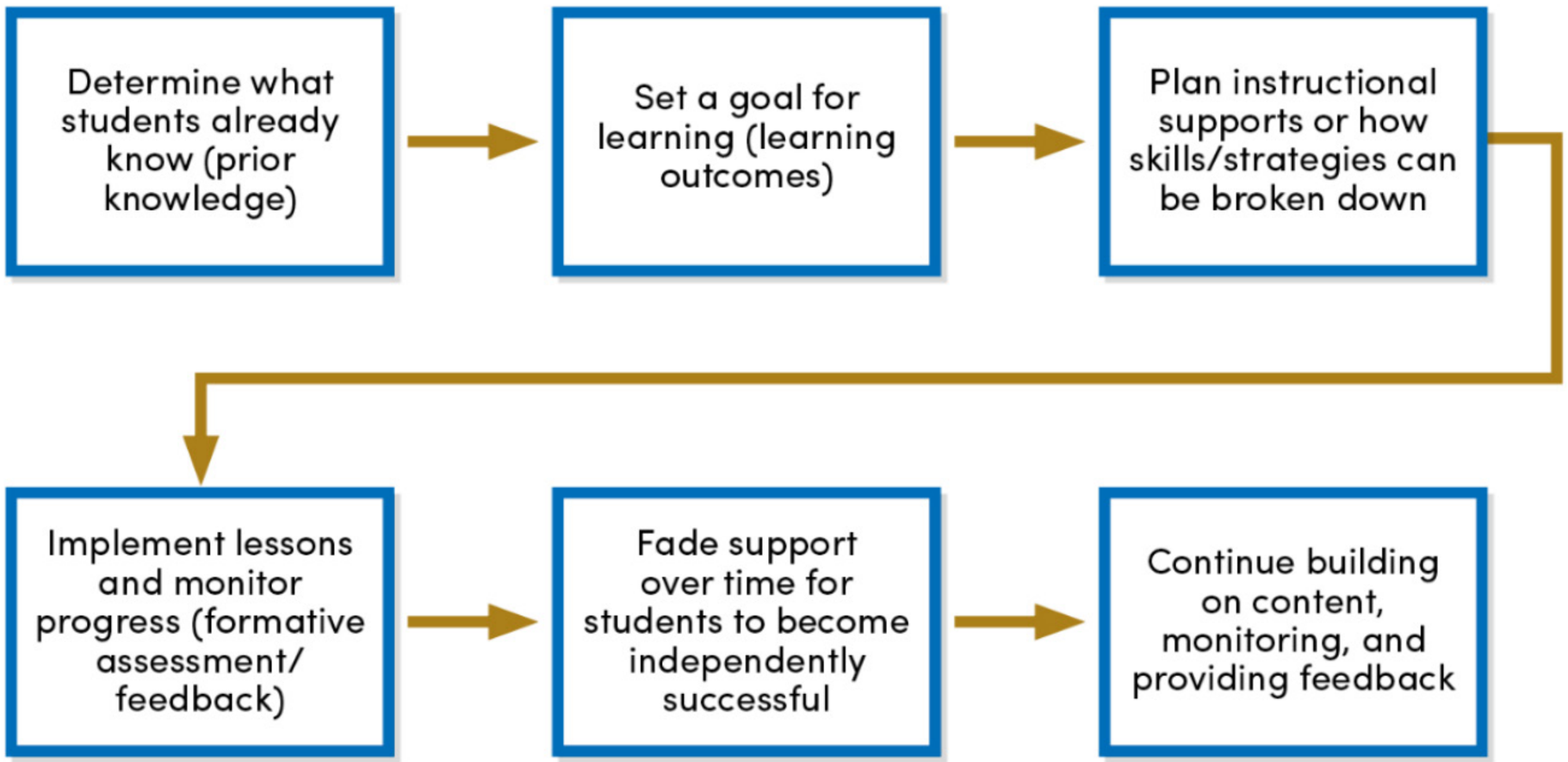
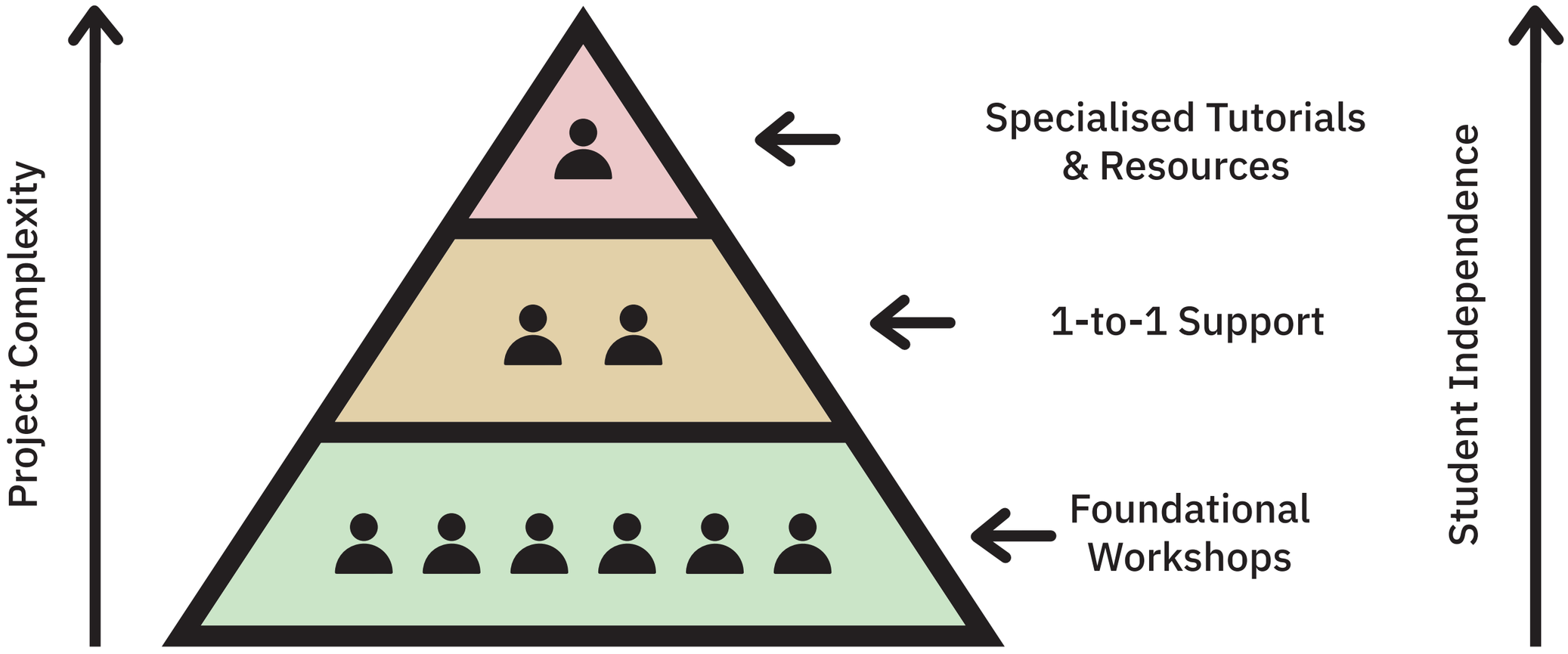


Figure 1. Office of Curriculum, Assessment and Teaching Transformation. (2025) Scaffolded Learning Process.


Project Complexity
Specialised Tutorials & Resources
1-to-1 Support
Foundational Workshops
Student Independence

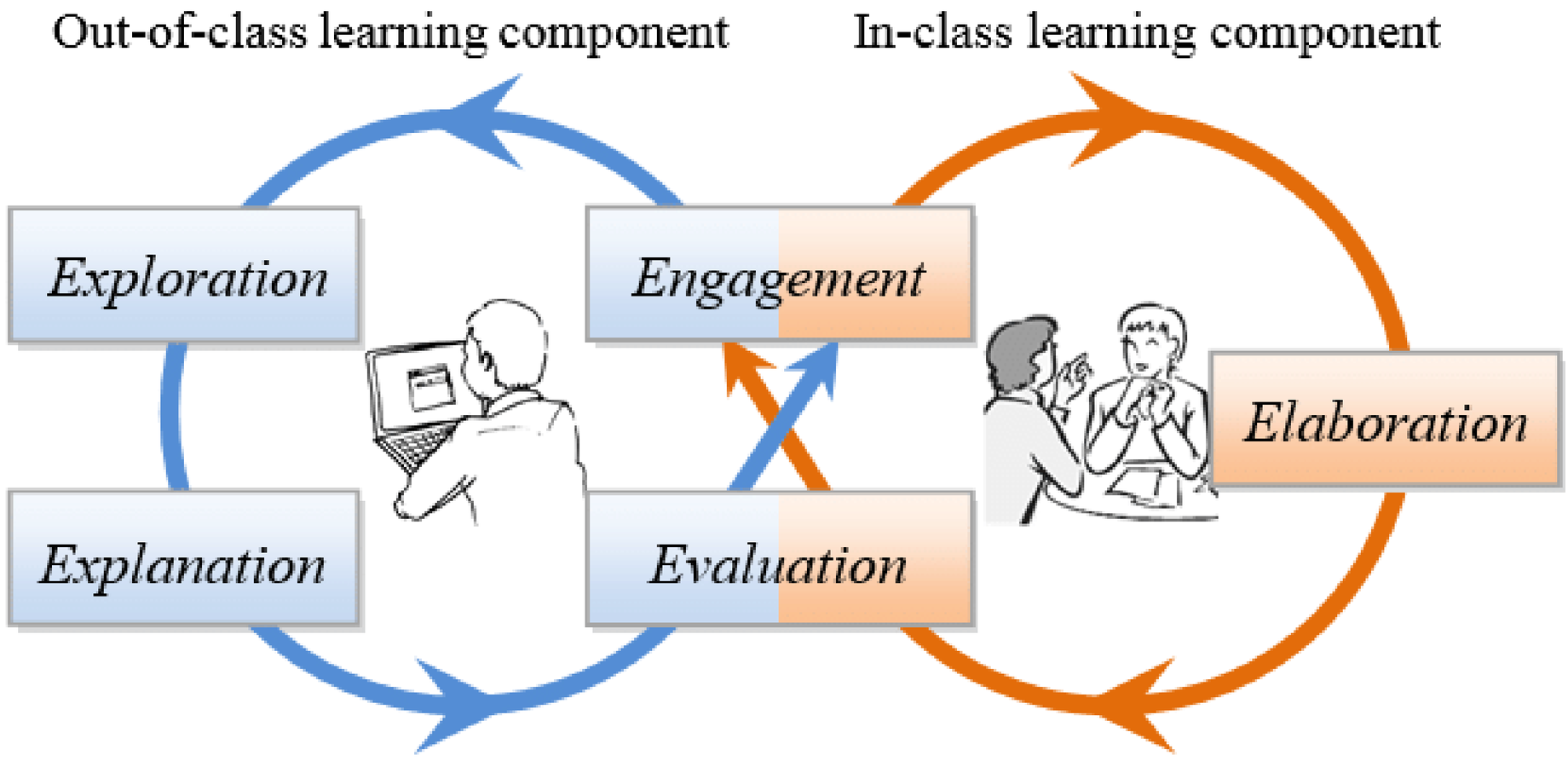


Figure 2. Lo, C. K. (2017) flipped classroom instructional model.

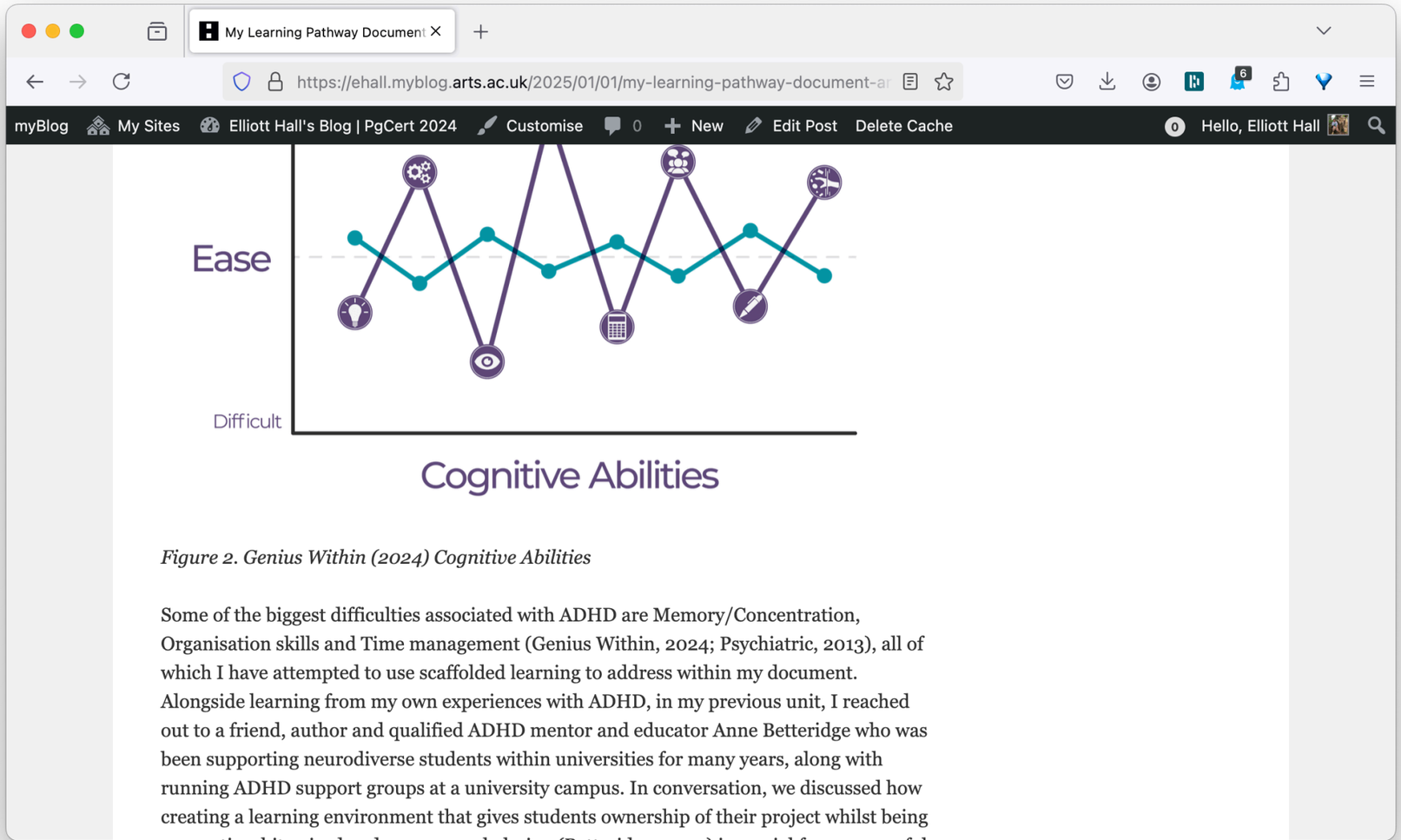
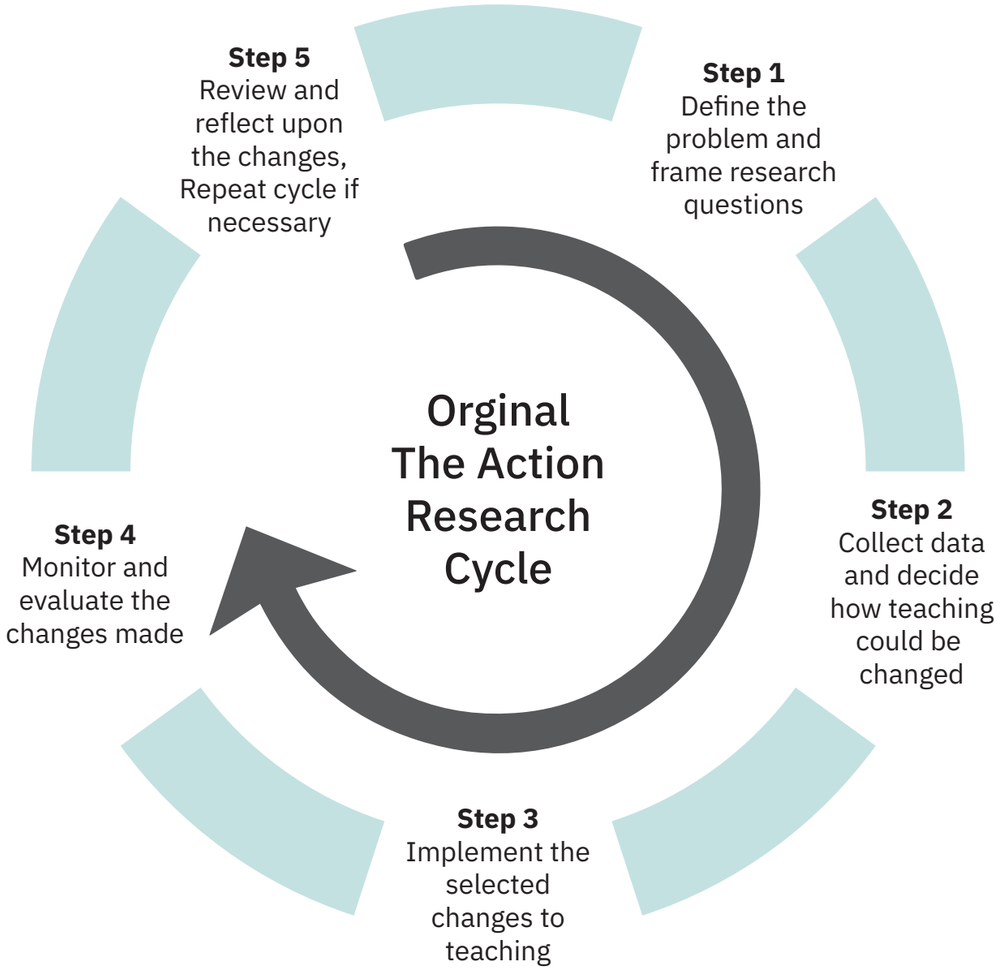
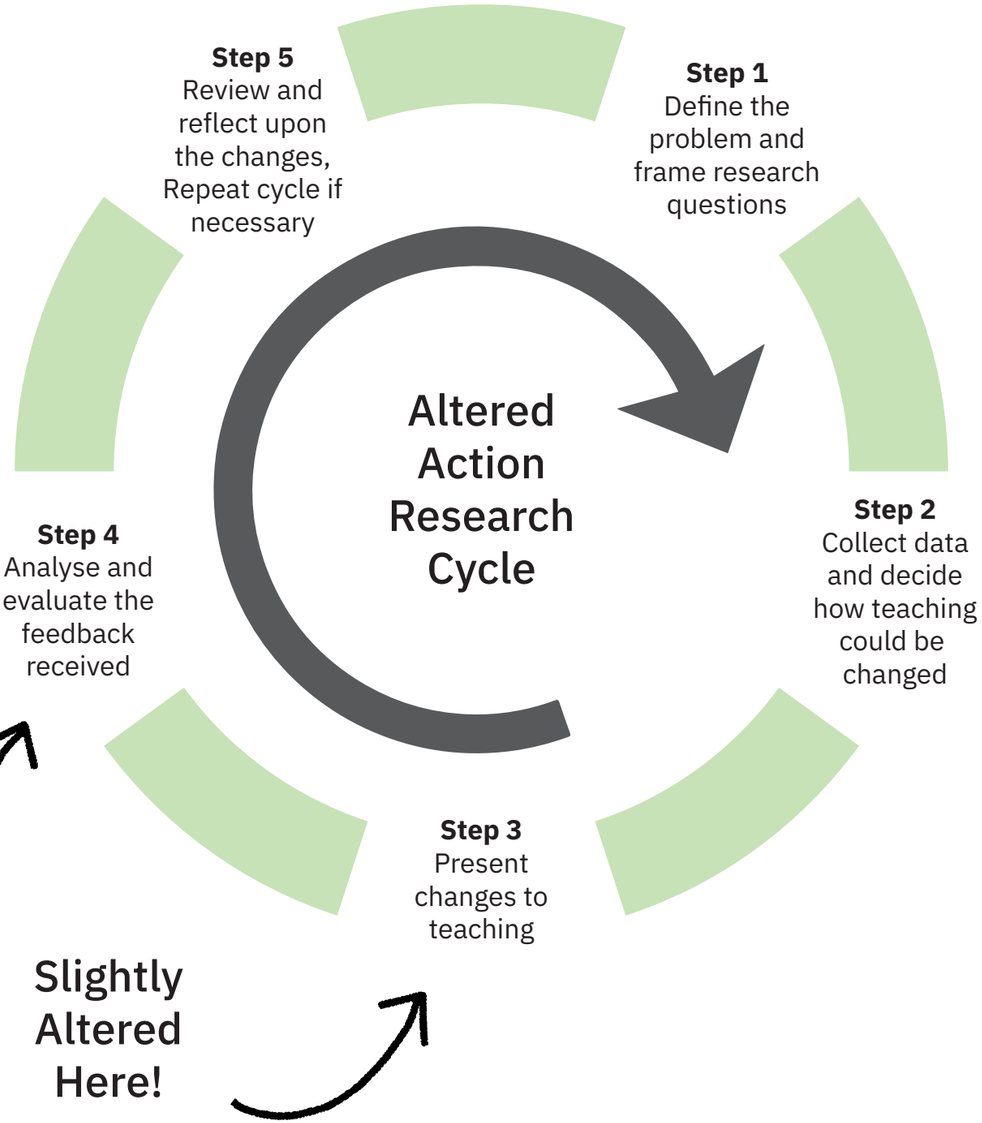


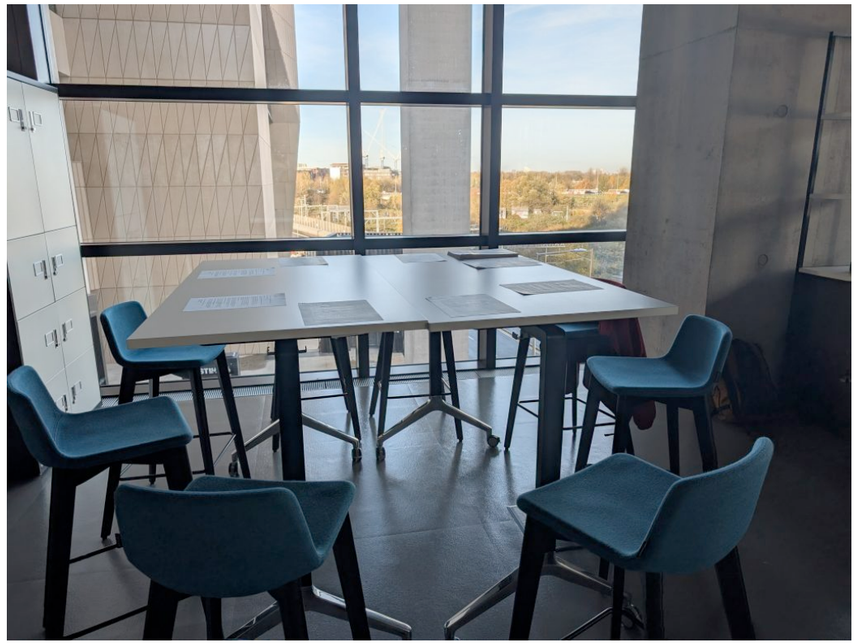
Figure 2. Genius Within (2024) Cognitive Abilities

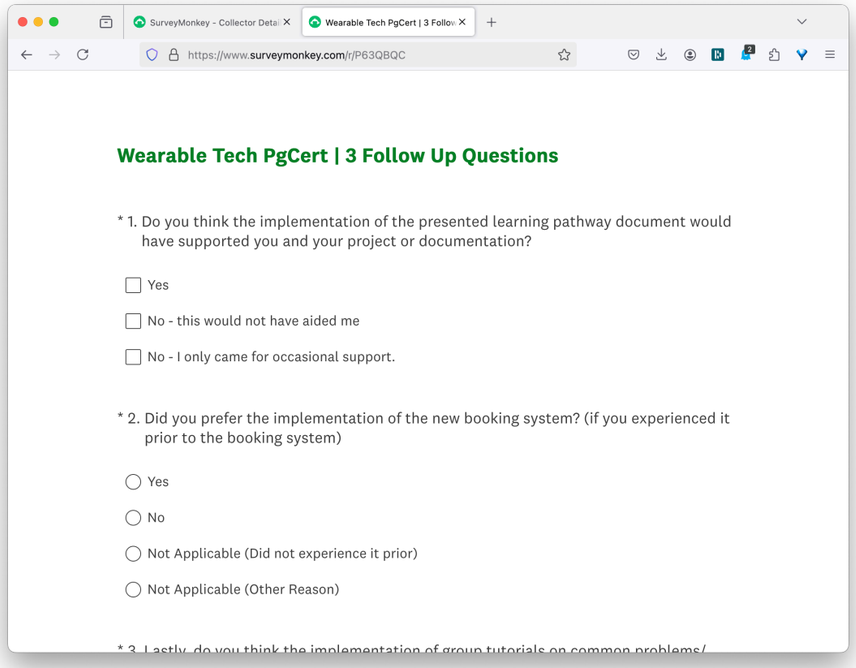
Some of the biggest difficulties associated with ADHD are Memory/Concentration, Organisation skills and Time management (Genius Within, 2024; Psychiatric, 2013), all of which I have attempted to use scaffolded learning to address within my document. Alongside learning from my own experiences with ADHD, in my previous unit, I reached out to a friend, author and qualified ADHD mentor and educator Anne Betteridge who was been supporting neurodiverse students within universities for many years, along with running ADHD support groups at a university campus. In conversation, we discussed how creating a learning environment that gives students ownership of their project whilst being

https://ehall.myblog.arts.ac.uk/2025/01/01/my-learning-pathway-document-arp/


Step 5
Review and reflect upon the changes, Repeat cycle if necessary
Step 1
Define the problem and frame research questions
Orginal The Action Research Cycle
Step 2
Collect data and decide how teaching could be changed
Step 4
Monitor and evaluate the changes made
Step 3
Implement the selected changes to teaching


Step 5
Review and reflect upon the changes, Repeat cycle if necessary
Step 1
Define the problem and frame research questions
Altered Action Research Cycle
Step 2
Collect data and decide how teaching could be changed
Step 4
Analyse and evaluate the feedback received
Step 3
Present changes to teaching
Slightly Altered Here!





In-Person Qualitative
Student Focus Group

Follow-Up Anonymous
Quantitative Questionnaire

More in-depth breakdown of the design and considerations of the focus group and questionaire can be found on my blog post: "Focus Group & Questions | ARP"

"...with a lot of these projects, I found it very overwhelming being like, I will never achieve this project. I'm fully aware that this is too big. And then if it was broken down into little tiny tasks, we're like, hey, wait a second, that's very achievable."
(Hall, 2024b, p.27)

"...it's really useful for people who are neurodivergent, because you can basically forget within a second and get so immersed into another task and another part... and another part... that you forget what... the supposed outcome [was]. {Group Agrees}"(Hall, 2024b, p.12)

1) Students appreciated the structured approach of the document.

2) It helped them articulate ideas and communicating ideas to academic teams.

3) Students felt it would help them, manage their projects effectively.

4) Making projects more achievable by breaking them into smaller steps.

5) Feedback confirmed the document acted as a helpful roadmap for large, complex projects.

6) The feedback reinforced of creating accessible learning materials that benefit all students.

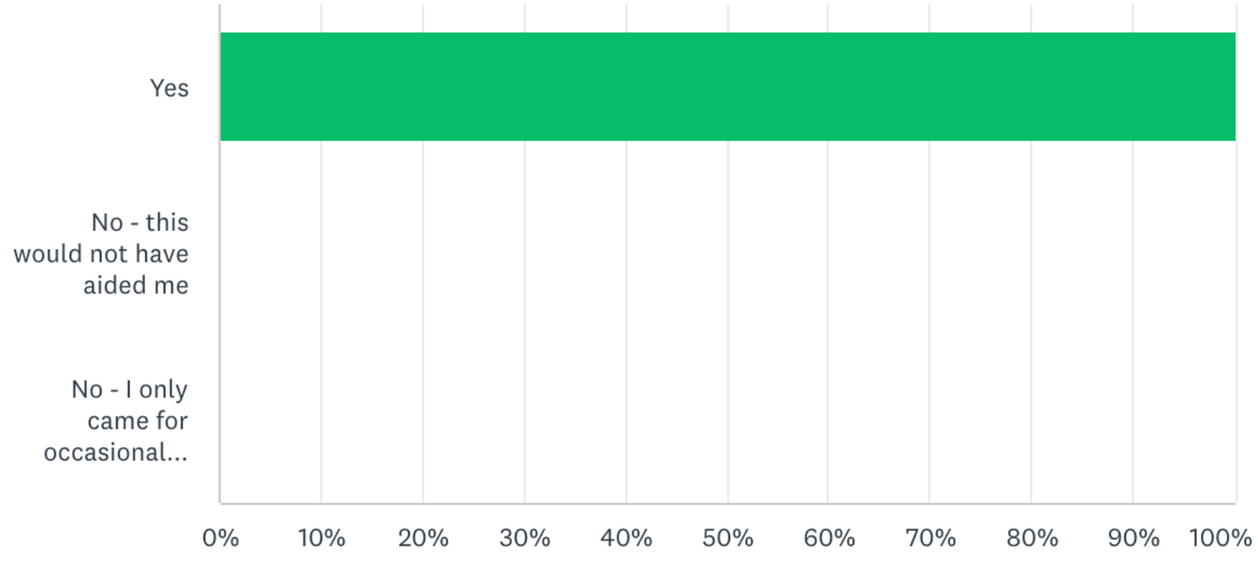
1) The document was seen as text-heavy and overwhelming by some students.

2) A greater focus on visual elements was recommended, such as drawings and imagery, to enhance understanding.

3) Students suggested the inclusion of more support with time management, like integrated timelines.

Do you think the implementation of the presented learning pathway document would have supported you and your project or documentation?

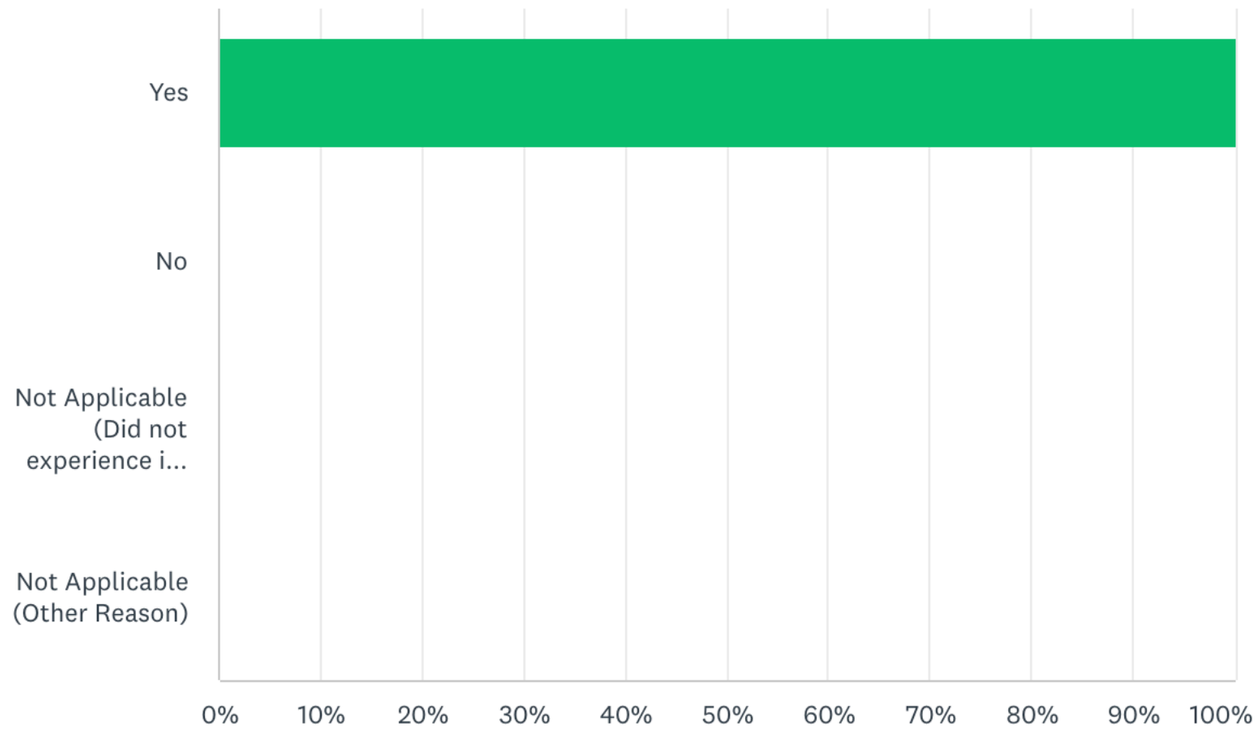
Answered: 6 Skipped: 0



Hall, E. (2024a) Follow-Up Student Quantitative Survey Image 1.

Did you prefer the implementation of the new booking system? (if you experienced it prior to the booking system)

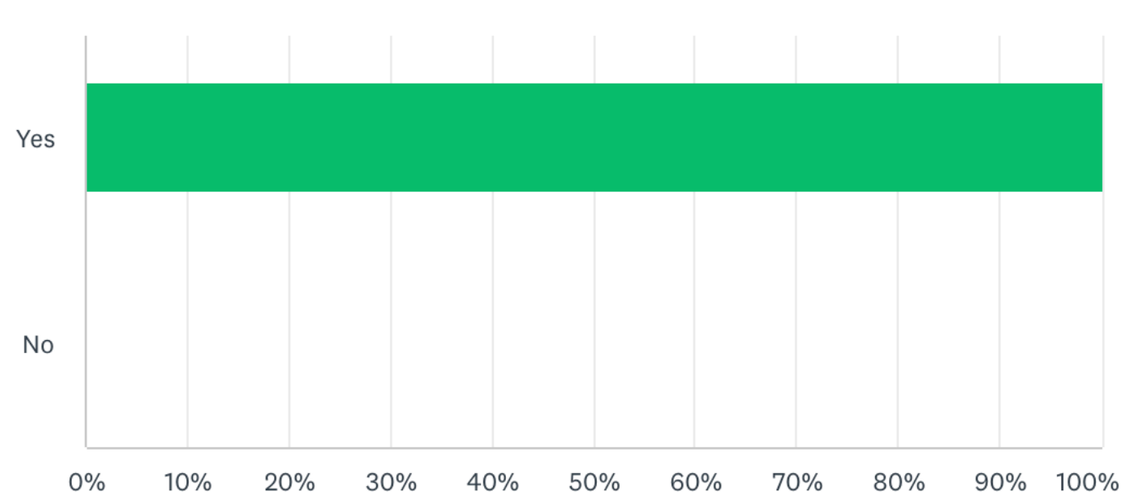
Answered: 6 Skipped: 0



Hall, E. (2024a) Follow-Up Student Quantitative Survey Image 2.

Lastly, do you think the implementation of group tutorials on common problems/topics would be useful? (i.e a scheduled drop in for for Fusion360, EasyEDA or other topic)

Answered: 6 Skipped: 0



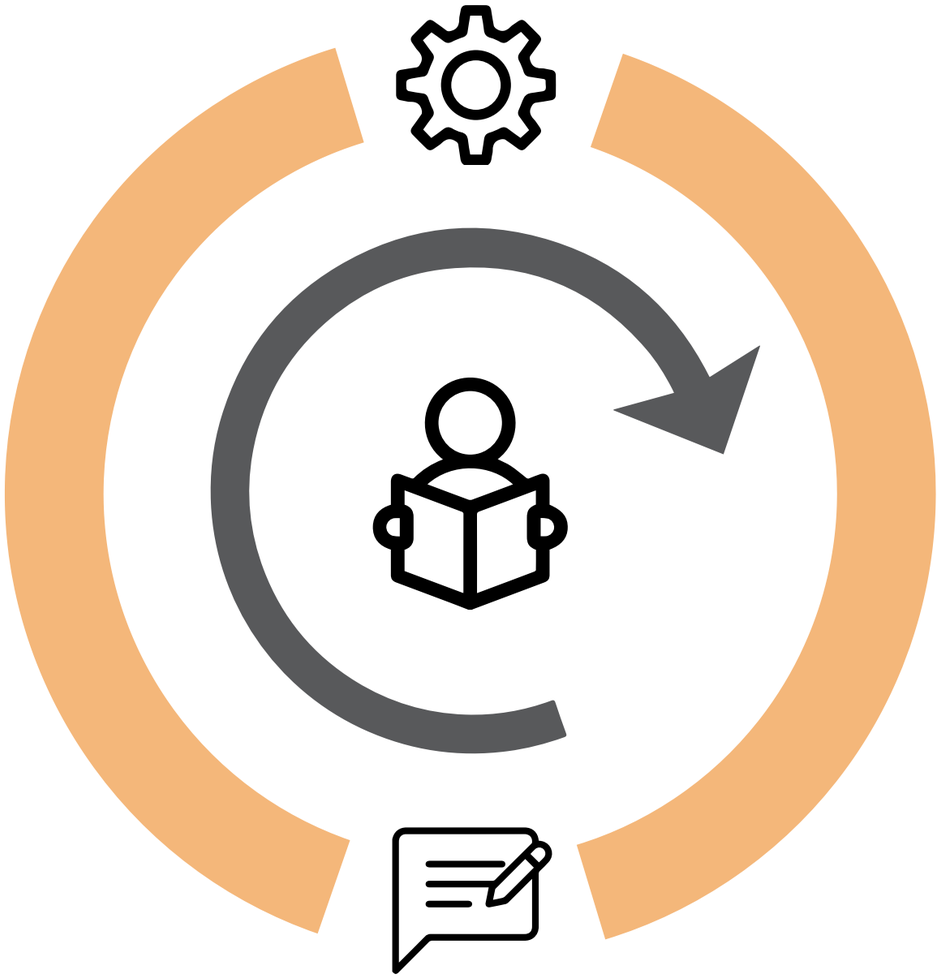
Hall, E. (2024a) Follow-Up Student Quantitative Survey Image 3.

1) More visually engaging and less text-heavy.

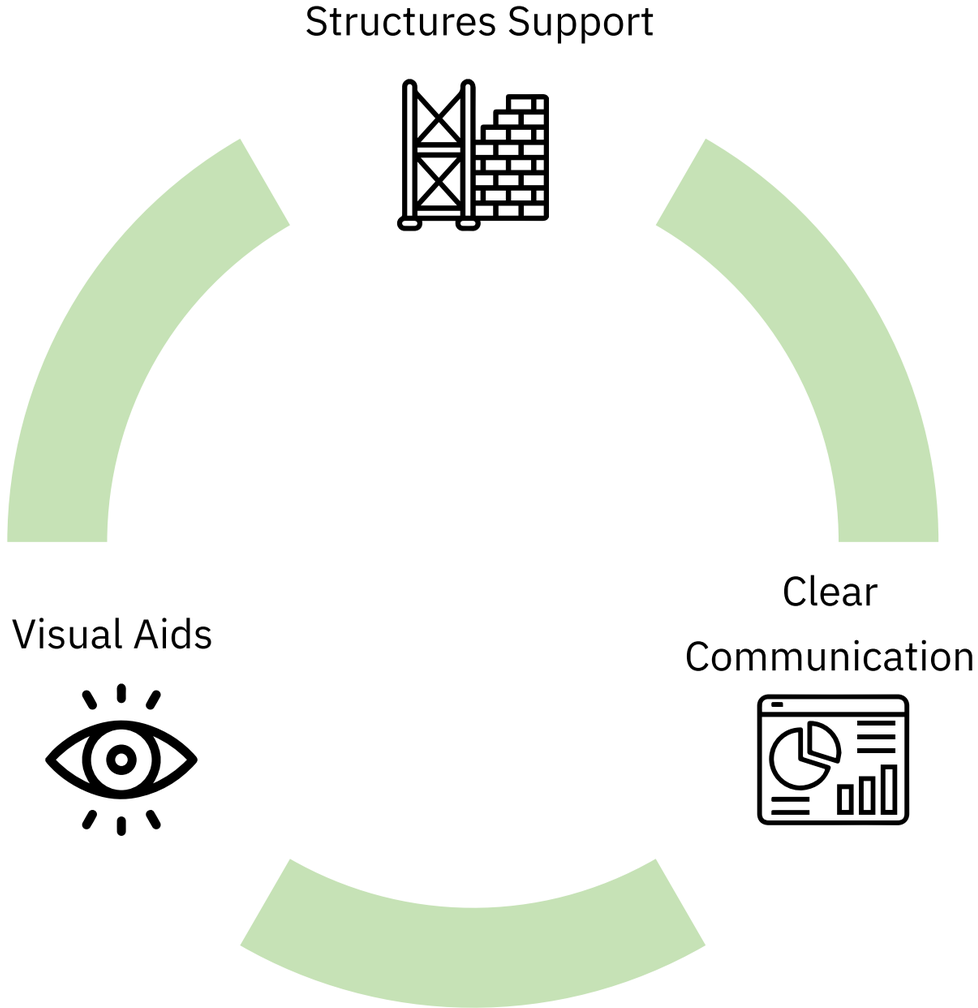
2) A greater focus on visual elements, such as drawings, imagery and diagrams.

3) Develop additional resources to support with time management, like integrated timelines.

4) Creating a clear onboarding process.

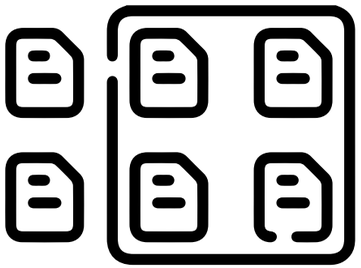


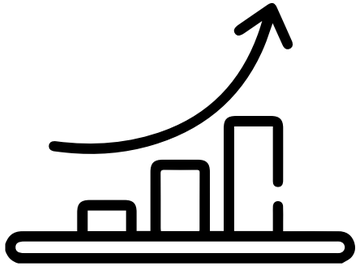
Student Centered Design



Accessible Design Practices

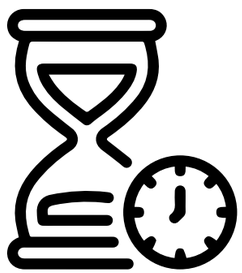
Despite A
Small Sample Size.

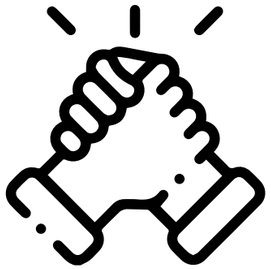




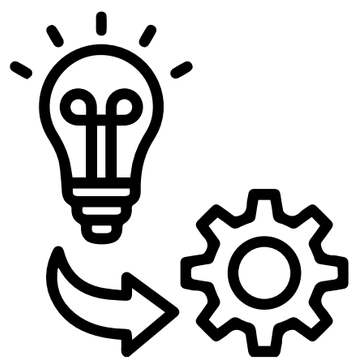
Feedback was
Overwhelmingly
Postive.

Excited to See
How This Time Saving
Will Benefit.



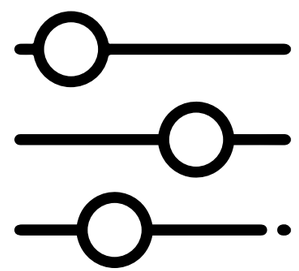


Whilst Providing More
In-Depth Project Support
& Student Autonomy.



Implement the Revised Document

Continue to Gather & Analyse Data



Further Refine the Document & Workflow

Continue to Collect Feedback

Apply My Findings to Other Teaching Resources

Share these Findings with Colleagues

I hope my presentation has peaked your interest in to the possibilities that my ARP has to offer technical education. For a more in-depth breakdown please consider taking a look at my blog ehall.myblog.arts.ac.uk

I invite you to ask any questions you may have.

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Image Index

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Figure 2. Lo, C. K. (2017) 'Toward a Flipped Classroom Instructional Model for History education: A Call for Research', IJCH, 3(1), pp. 36–43. doi: 10.18178/ijch.2017.3.1.075.

Figure 1. Office of Curriculum, Assessment and Teaching Transformation (2025) Scaffolded Learning Process. University at Buffalo. Available at: https://www.buffalo.edu/catt/teach/develop/build/scaffolding.html (Accessed: 31 January 2025).

Figure 3, 4 & 5. Hall, E. (2024a) Follow-Up Student Quantitative Survey.