PolyFeed Pilot Study Protocol

	Question
Demographic Questions	
Q1	My Name is?

Q2	I am ……
	    a. An international student
	    b. A domestic student

Q3	Is English your first language?
	    a. Yes
	    b. No

Q4	What is your age?
	    a. Below 20
	    b. Between 20 - 30
	    c. Between 30 - 40
	    d. Between 40 - 50
	    e. More than 50

Q5	What gender do you identify yourself as?
	    a. Male
	    b. Female

	c. Non-binary d. Prefer not to say

Q6	Please specify the faculty where your degree is based?
	    a. Art, Design and Architecture
	    b. Arts
	    c. Business and Economics
	    d. Education
	    e. Engineering
	    f. InformationTechnology
	    g. Law
	    h. Medicine, Nursing and Health Sciences
	    i. Pharmacy and Pharmaceutical Sciences
	    j. Science

Q7	What academic degree are you currently studying for?
	    a. Undergraduate / Bachelor's Degree
	    b. Postgraduate diploma or certificate
	    c. Honour's degree
	    d. Master's Degree
	    e. Doctoral Degree

Q8	Which year of your degree program are you currently in?
	    a. 1st Year
	    b. 2nd Year
	    c. 3rd Year
	    d. 4th Year
	    e. 5th Year

Q9	What is your learning mode? a. Full time in person

	b. Part time in person c. Full time online d. Part time online

Q10	What types of feedback do you generally receive from your teachers? (Select all that apply)
	   a. Written feedback (moodle, email)
	   b. Comments on google document on word document with track changes
	   c. Audio feedback
	   d. Video feedback
	   e. Verbal feedback
	   f. Other (Please specify)

Q11	Based on overall GPA, which category do you belong to?
	   a. High Distinction (HD)
	   b. Distinction (D)
	   c. Credit (C)
	   d. Pass (P)

Perception of Feedback	
Q12	What does feedback mean to you in your learning, and how do you usually use it?
Zhan's measurement - Appreciation of Feedback (AF)	

Q13	I have realized that feedback from other people can make me recognize my learning strengths and weaknesses.
	   1. Never
	   2. Almost never
	   3. Rarely
	   4. Sometimes

	5. Almost always 6. Always

Q14	I have realized that feedback from other people can provide me a chance to look at my work from others' eyes.
	   1. Never
	   2. Almost never
	   3. Rarely
	   4. Sometimes
	   5. Almost always
	   6. Always

Q15	I have realized that feedback from other people can enable me to learn effective learning strategies from others.
	   1. Never
	   2. Almost never
	   3. Rarely
	   4. Sometimes
	   5. Almost always
	   6. Always

Q16	I have realized that feedback from other people can enhance my self-reflection on how I can systematically improve my learning.
	   1. Never
	   2. Almost never
	   3. Rarely
	   4. Sometimes
	   5. Almost always
	   6. Always

	FBLS - Seek Feedback Information (SF)
Q17	I reflect on the quality of my own work and use my reflection as a source of information to improve my work. 1. Never 2. Almost never 3. Rarely 4. Sometimes 5. Almost always 6. Always
Q18	I seek out examples of good work to improve my work. 1. Never 2. Almost never 3. Rarely 4. Sometimes 5. Almost always 6. Always
Q19	When other people provide me with input about my work I listen or read thoughtfully. 1. Never 2. Almost never 3. Rarely 4. Sometimes 5. Almost always 6. Always
Q20	When I am working on a task, I consider comments I have received on similar tasks.

	1. Never 2. Almost never 3. Rarely 4. Sometimes 5. Almost always 6. Always
Q21	I ask for comments about specific aspects of my work. 1. Never 2. Almost never 3. Rarely 4. Sometimes 5. Almost always 6. Always
FBLS - Make Sense of Information (MS)	
Q22	I carefully consider comments about my work before deciding if I will use them or not. 1. Never 2. Almost never 3. Rarely 4. Sometimes 5. Almost always 6. Always
Q23	When receiving conflicting information about my work from different sources, I make a judgement about what I will use 1. Never 2. Almost never

	3. Rarely 4. Sometimes 5. Almost always 6. Always
Q24	When deciding what to do with comments, I consider the credibility of their sources. 1. Never 2. Almost never 3. Rarely 4. Sometimes 5. Almost always 6. Always
Q25	I consider how comments relate to criteria or standards. 1. Never 2. Almost never 3. Rarely 4. Sometimes 5. Almost always 6. Always
FBLS - Use Feedback Information (UF)	
Q26	I check whether my work is better after I have acted on comments. 1. Never 2. Almost never 3. Rarely 4. Sometimes

	5. Almost always 6. Always
Q27	I use comments on my work to refine my understanding of what good quality work looks like. 1. Never 2. Almost never 3. Rarely 4. Sometimes 5. Almost always 6. Always
Q28	When receiving comments I plan how I will use them to improve my future work, not just the immediate task. 1. Never 2. Almost never 3. Rarely 4. Sometimes 5. Almost always 6. Always
Q29	I keep comments on previous work to use again in the future. 1. Never 2. Almost never 3. Rarely 4. Sometimes 5. Almost always 6. Always

Q30	When I receive comments from others, I use them to improve what I'm working on at the time. 1. Never 2. Almost never 3. Rarely 4. Sometimes 5. Almost always 6. Always
FBLS - Provide Feedback Information (PF)	
Q31	When commenting on the work of others, I provide constructive criticism. 1. Never 2. Almost never 3. Rarely 4. Sometimes 5. Almost always 6. Always
Q32	I comment on other people's work when I am invited to. 1. Never 2. Almost never 3. Rarely 4. Sometimes 5. Almost always 6. Always
Q33	When commenting on other people's work I refer to standards or criteria. 1. Never

	2. Almost never 3. Rarely 4. Sometimes 5. Almost always 6. Always
Q34	I offer to provide feedback to my peers. 1. Never 2. Almost never 3. Rarely 4. Sometimes 5. Almost always 6. Always
Q35	I try to be very clear when providing feedback comments to others. 1. Never 2. Almost never 3. Rarely 4. Sometimes 5. Almost always 6. Always
FBLS - Manage Affect (MA)
Q36	I am open to reasonable criticism about my work. 1. Never 2. Almost never 3. Rarely

	4. Sometimes 5. Almost always 6. Always
Q37	I deal well with any negative emotional responses I have to feedback information. 1. Never 2. Almost never 3. Rarely 4. Sometimes 5. Almost always 6. Always
Q38	When a feedback message is valuable but upsetting or annoying, I still find a way to make use of it. 1. Never 2. Almost never 3. Rarely 4. Sometimes 5. Almost always 6. Always
Q39	Critical comments motivate me to improve my work. 1. Never 2. Almost never 3. Rarely 4. Sometimes 5. Almost always 6. Always

Q40	I make use of critical comments even if they are difficult to receive.
	1. Never
	2. Almost never
	3. Rarely
	4. Sometimes
	5. Almost always
	6. Always

Activity 2: Lab Session - Detailed Session Plan

Time	Activity	Description
00.00 - 00.15	**Introductions [15 mins]** Good [morning / afternoon / evening], and thank you for taking the time to participate in this lab study. My name is [Your Name], and I along with [Co-facilitator's Name], will be facilitating this session. Your participant ID for this session will be **PFPT[01/02/03…]** Today we are here to discuss and evaluate PolyFeed, a learning analytics based feedback management system we developed. The main idea behind this tool is to facilitate students to manage received feedback and use the insights derived from the tool to improve their learning. Please note that this session will be **audio and video recorded** for the purposes of our data analysis. In addition, PolyFeed records your interactions with features and functionalities as trace data. Any data used in publications will strictly adhere to the principle of anonymity.	Introductions and setting up PolyFeed extensions in participants' laptops. This includes signing up the user into the tool using their monash credentials. Participants will be provided their participant ID for the lab session (used to enter session notes and SUS conducted at the end of the session)

	Before we begin, are there any questions you would like to ask us? PolyFeed consists of a google chrome extension and a dashboard. We will now install the chrome extension into your browser. PolyFeed is using monash credentials to authenticate your login. **Can you please open a chrome window and log into it using your monash credential.?** Thank you Now when you go to your moodle, select a unit and go to the assessment page, you will see the polyfeed icon appear on the right hand side of the window. When you click it you can open the sidebar. **Can you click on the dashboard button? [Asking them to go to Dashboard to complete login]** Now click the Login button in the top right hand corner. Please use your monash credentials to log in. Once you successfully logged in you will see the two initials of your name appear in the top right hand corner of the browser extension.		
00.15 - 00.25	**Initial Exploration [3 mins for instructions, 12 minutes for the task]** Now that we are all settled in, I want you to navigate to one of the feedback you brought to this session and complete the following tasks. Before that I would like to brief you about PolyFeed. Using PolyFeed you can highlight feedback and label them. Then you can create a personal note or a to-do list based on the feedback. Apart from that you can seek further clarification from ChatGPT using PolyFeed. Also, you can rate your teachers' feedback. **Can you please open the feedback of one unit you selected for this lab session?**	Participant initial exploration of PolyFeed using one of the feedback they bring to the session. Think aloud protocol will be used to capture students initial reactions with the tool. Field notes: What the students, review what they did ask why did you do this? Whether it had something to do with the feedback they received

	Now I want you to explore the tool by yourself. While you are doing this exploration please think aloud. Let me show you how to think aloud **[Facilitator demonstrate a think aloud scenario in their own machine]** You have 12 minutes to complete the task	
00.25 - 00.35	**Follow up Questions [10 mins]** **[Facilitators will ask questions based on the observation notes they made during the Initial Exploration activity]** While you were going through the tool, I saw you were doing [Action A]. Why did you do this? Is it because of the feedback you received or something else? **[Above is a sample prompt. The facilitators have to think on the feet and ask questions based on the students actions]**	In the previous activity students will freely explore the tool and while they do that they will think aloud. When they do this activity the facilitator needs to make notes on their behaviour and based on that we need to ask questions from the students. Since the behaviour of students can vary, we cannot go for a general set of questions.
00.35 - 00.55	**Scenario 1: Navigating the Chrome Extension [20 mins]** Now that you are familiar with PolyFeed, I want you to highlight and label the next two feedback you selected for this session. Please complete the following tasks. *Feedback 1* 1. Insert the correct unit details including the marks you received for this assignment 2. Click start highlighting button 3. Read the feedback, highlight the text, label it from the pop up box for Strength, Weakness, Action Point, Confused or Other 4. Create a note or a to-do list (if it is a to-do list it should have at least 3	Participants are asked to create two notes, two to-do lists with at least 3 items, seek further clarifications from Chat GPT and rate the feedback for the remaining two feedback. Participants will be provided the steps (e.g., First add unit details, Next …)

	to-do list items)
	5. For to-do lists:
	    a. Add the to-do list item
	    b. Label it from the given options in the dropdown
	    c. Create a deadline you want to complete it
	6. Repeat steps 3-5 until you have 2 notes and 2 to-do lists for this feedback
	7. Click Explanation from ChatGPT (Only once per feedback)
	8. Select the whole feedback and click ASK CHAT GPT button
	9. Read the response you receive from Chat GPT and rate it
	10. Now click on Rate this feedback button and rate the overall feedback
	
	Feedback 2:
	1. Insert the correct unit details including the marks you received for this assignment
	2. Click start highlighting button
	3. Read the feedback, highlight the text, label it from the pop up box for Strength, Weakness, Action Point, Confused or Other
	4. Create a note or a to-do list (if it is a to-do list it should have at least 3 to-do list items)
	5. For to-do lists:
	    a. Add the to-do list item
	    b. Label it from the given options in the dropdown
	    c. Create a deadline you want to complete it
	6. Repeat steps 3-5 until you have 2 notes and 2 to-do lists for this feedback
	7. Click Explanation from ChatGPT (Only once per feedback)
	8. Select the whole feedback and click ASK CHAT GPT button
	9. Read the response you receive from Chat GPT and rate it
	10. Now click on Rate this feedback button and rate the overall feedback	

00.55 - 01.10	**Scenario 2: Exploring feedback analytics dashboard [15 mins]** In this scenario you will explore the dashboard consisting of visualisations based	Participants will explore the dashboard and answer few questions relating to the

	on your interactions with feedback.
	
	Can you click on the Dashboard button? [Asking them to go to Dashboard] - it will open the landing page of the dashboard
	
	To-do list calendar that you currently see shows an overview of your created to-do lists.
	
	Question:
	● What do you understand from this visualisation?
	   ○ Prompt: any challenges in understanding/interpreting the visualisation?
	● Do you think the calendar view (both month and week) would be helpful ?
	● Why / Why not?
	
	Can you click one to do list item in the calendar? [Asking them to open up the pop up] - it will open the pop up window containing description about the to-do list item
	
	Question:
	● Do you think this popup is useful?
	● Why / Why not?
	
	Can you click on the Weakness Across Units tab? [Ask them to open the weaknesses across units graph]
	
	Question:
	● What do you understand from this visualisation?
	   ○ Prompt: any challenges in understanding/interpreting the visualisation?
	● Do you think visualising the strengths and weaknesses across units could be helpful to you?
	● Why / Why not?
		presented visualisations, interpretability, and their usefulness

	Can you click on the Strengths Across Assessments and Weakness Across Assessments tabs? [Ask them to open the strengths across assessment and weaknesses across assessments graphs] **Question:** ● What do you understand from these visualisations? ○ Prompt: any challenges in understanding/interpreting the visualisations? ● Do you think visualising the strengths and weaknesses across assessment could be helpful to you? ● Why / Why not? **Can you click Manage Feedback tab from the menu - [Ask them to open the page that allows them to work on the notes and to-do lists they created]** Please select a unit from the drop down Now you see the list of Notes, to-do lists you created along with feedback extractions. **Question:** ● Do you think this function is useful? ● Why / Why not?	
01.10 - 01.15	**Complete the Usability Metric for User Experience [5 mins]** Thank you very much for completing both the scenarios. Based on your experience with PolyFeed today, please fill the following survey. [Facilitator provides the survey opened in their machine]	Participants will complete the UMUX created using google form. The interviewer will provide their laptop or share the url to the participant via email and ask them to fill that in. Specifically, the facilitators need to mention that we are interested in gathering their

		When you fill the survey please enter your participant ID as **PFPT[01/02/03…]**	experiences with PolyFeed today.

01.15 - 01.30		**Short Interview [15 mins]**
		
		Now we have come to the last activity of this lab session. I will ask a few questions from you and would like to collect your responses. Please respond based on your experience with PolyFeed.
		
		Question:
		● Do you think PolyFeed can be useful to your learning? Yes / No
		    ○ Prompt: Can you elaborate on your response? In what ways can PolyFeed be useful to your learning?
		● Is there any part that you found less useful?
		    ○ Prompt: How would you suggest improving it?
		
		Question:
		● Do you think you will use PolyFeed in future? Yes / No
		    ○ Prompt: What is the motivation for you to use it?
		    ○ Prompt: What could be possible barriers or practical challenges in using it?
		    ○ Prompt: What concerns do you have about the tool?
		Questions
		● What sort of support do you think teachers could provide to make PolyFeed work well as a learning aid?
		
		Question (Optional)
		● Do you have any suggestions to improve PolyFeed?
			We will ask the participant to elaborate on the questions:
			How do you think PolyFeed can help with your learning? with multiple prompts
			
			How do you think PolyFeed can help you to better communicate with your teacher?

		Instructions for Activity 3 and 4 During the rest of the semester, we would like you to use PolyFeed for any feedback you have received within moodle for the units you have informed us. We want you to use PolyFeed for at least 6 pieces of feedback (at least 3 pieces	

	of the chosen feedback needs to be good quality feedback containing at least the following information: strengths, weakness, suggestions to improve learning). We will send you an email containing these details. We will invite you for an online interview after week 12 to capture your experience with feedback. Please also note that there will be mini surveys sent out to you to understand your confidence in assignment performance before you receive feedback, and a mini survey after the unit results are published in July to collect your unit marks.	

Usability Survey - UMUX

Q1	Please enter your participant ID	Lets create a participant ID for each participant on the session day and use it afterwards
Q2	On a scale of 1-7, 1 being strongly disagree and 7 being strongly agree please rate the following statements on overall usability of PolyFeed Scale: 1 - Strongly Disagree, 2 - Disagree 3 - Somewhat Disagree 4 - Neutral 5 - Somewhat Agree	

6 - Agree
7 - Strongly Agree

PolyFeed's capabilities meet my requirements	1	2	3	4	5	6	7
Using PolyFeed is a frustrating experience	1	2	3	4	5	6	7
PolyFeed is easy to use	1	2	3	4	5	6	7
I have to spend too much time correcting things with PolyFeed	1	2	3	4	5	6	7

Activity 3: - Using PolyFeed within Semester

Participants will be using the tool during the semester. The participants will be instructed to work with at least 6 pieces of feedback (at least 3 pieces of the chosen feedback needs to be good quality feedback containing at least the following information: strengths, weakness, suggestions to improve learning) using PolyFeed. Although the participants are recruited through specific units, they can use this tool to annotate any Moodle feedback they received for other units. They are free to use the feedback that they've received prior to and after they join the PolyFeed study as long as the feedback is received in S1 2024.

The tool will be recording their interactions with feedback and use this information to develop the questions for activity 4.

Activity 4: - Interview at the end of the Semester (Optional)

Good [morning/ afternoon / evening]. My name is [Your name] and I will be conducting the interview today with you. Thank you very much for taking time to share your experience with PolyFeed.

As you know PolyFeed captures, analyses and visualises your interactions with feedback. We call these analytics as Feedback Analytics. In todays interview, we gonna discuss how feedback analytics and the process of capturing them [helped / did not help] with your learning

Topics	Main Question	Prompts / Follow up questions
Usefulness	Do you find PolyFeed useful in your learning?	**If Yes**: - In what ways was the tool useful? - What motivates you to continuously use the tool? - Do you find the visualisations in the dashboard were useful for your learning? Yes / No - Can you elaborate your response - From your point of view, how can we further enhance your interaction with feedback? **If No:** - In what ways was the tool not useful? - What demotivates you from using the tool? - From your point of view, how can we help you to interact better with feedback?

Appreciation of feedback	How do you normally perceive the role of feedback in your learning process?	- Has your mindset towards feedback changed after using PolyFeed? If so, why? - Has PolyFeed helped you develop a greater appreciation for the role of feedback in learning? Can you explain how? - Do you feel that PolyFeed encouraged you to take an active role in the feedback process? - Has PolyFeed helped you recognise the value of feedback in identifying learning strengths and strategies for improvement?
Seek feedback information	Do you consider yourself proactive in seeking feedback on your work? Why?	- Has PolyFeed helped you become more proactive in seeking feedback on your work? In what ways? - Has PolyFeed encouraged you to reflect on the quality of your own work? How? - Has the ChatGPT function encouraged you to seek clarifications on the feedback you received? - Did PolyFeed prompt you to reach out to your teachers for feedback or clarification? In what ways (any specific features or aspects of PolyFeed)?
Make sense of information	How do you usually process and decide how to use the feedback you receive?	Has PolyFeed helped you in processing and making decisions based on the feedback you receive? In what ways?

		● Did PolyFeed help you think carefully about feedback before using it? How? ● Did PolyFeed help you self-evaluate your work and identify areas for improvement? ● Did PolyFeed make it easier for you to see how feedback relates to the criteria or standards of good work? In what ways?
Manage Emotions	How do you usually feel when you receive feedback, particularly when it's critical?	● Why do you feel that way about feedback, and how do you usually deal with those feelings? ● Do you think PolyFeed / a tool like PolyFeed can support you in managing these negative feelings? How? ● Do you think PolyFeed helped you use critical comments as motivation to improve your work, rather than feeling discouraged? How? ● How do you think teachers can support you in managing the negative feelings?
Use feedback information	How do you usually use feedback to improve your work and learning?	● Has PolyFeed helped you in effectively utilising feedback to improve your learning? ● Has PolyFeed helped you set goals and plan your learning strategies for academic tasks or assignments? ● Has PolyFeed supported you in monitoring your progress and performance?

		● Has PolyFeed made it easier for you to keep and revisit past feedback for future use? ● Has PolyFeed helped you self-regulate your learning, such as managing your time, tracking progress, or reflecting on your work?
Challenges	Were there any challenges you faced while using PolyFeed, or reasons that made you hesitant to use it?	● Were there any technical difficulties? ● Was the quality of the feedback affecting your interaction with feedback? How? ● Any other issues or concerns? Please elaborate

Future Implications	Will you continue to use PolyFeed in future?	● If Yes:
		  ○ What motivates you to use it in future?
		  ○ Any new features or functions you think would be useful in future?
		● If No:
		  ○ What demotivates you from using it in future?
		  ○ Any features of functions to be included to encourage you to use the tool?
		● How do you think teachers can use this data to improve their feedback?