CPCECPR Conference 2022

Web-based eAssessment Tool for Effective Oral Presentation Assessment and Enhancing Students' Learning

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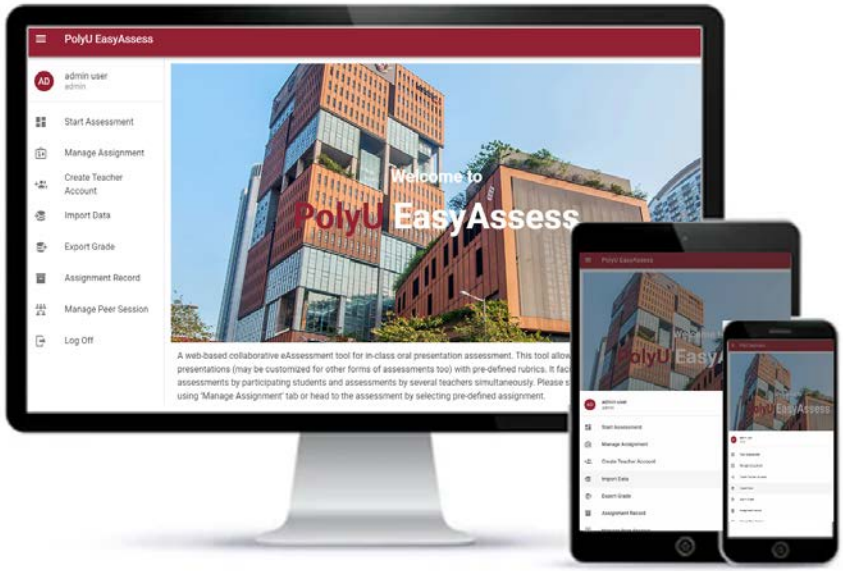
Outline

- Introduction
- Issues and Challenges of Oral Presentation Assessments
- Use of Technology for Assessment
  - Introduction to eAssessment Tool ‘EasyAssess’
- Direction for research



Introduction

- Oral presentation is an essential assessment element for some subjects in degree/sub-degree programmes
  - Project-based learning
  - Case-based learning
- Individual or group presentations
- Assessed by the subject teacher or by a panel

Introduction

- Objectives of oral presentations in academic setting
  - To judge knowledge, understanding, problem solving skills and other abilities through the oral medium.
  - Assessing students' language or communication skills
- Many theories of learning emphasize the importance of students' ability to articulate their ideas, body of knowledge, research/project proposals, outcome of a group project, processes used for problem solving, etc. through speaking.
  - It develops their ability and confidence to communicate in work-like environments
  - Oral presentations is a **higher-order cognitive task** and therefore of immense value as an assessment task

Van Ginkel, S., Gulikers, J., Biemans, H., & Mulder, M. (2017). The impact of the feedback source on developing oral presentation competence. *Studies in Higher Education (Dorchester-on-Thames), 42*(9), 1671-1685.

Oral assessment is a direct means of assessing students' learning outcomes
It presents minimal risk of academic misconduct.

Issues and Challenges

- Oral presentation assessment is very time-consuming - it is an expensive way of assessing
- Sometimes there is no proper record of the process of assessment to ensure its fairness.
- Issues with providing feedback
  - Difficult to provide detailed written feedback due to time constraints.
  - Students may not be in a proper frame of mind (may be nervous) to digest the oral feedback provided
- Peer engagement in assessment and feedback
  - Limited opportunities for interaction with peers
  - Getting and managing peer feedback is difficult

The research shows that peer evaluation and feedback has a positive effect on oral presentation skills of students, especially when they are provided with some support instruments such as rubrics.
Murillo-Zamorano, L. R., & Montanero, M. (2018)Assessment & Evaluation in Higher Education

Issues and Challenges

- Timing of the oral presentation assessment
  - Oral presentations are normally arranged towards the end of the semester after students complete a major project work or case study

Mainly conducted as a summative assessment

Assessment *of* Learning

Impact of Oral Presentation Assessment on Learning??

- Need:

Assessment *of* Learning → Assessment *for* Learning

- Giving rich learning experience to students through effective feedback
- Enhance the engagement of peers
- Provide real value for the students' efforts
- Making the assessment fair and transparent

Use of Paper-based Rubrics for Assessment

- Good way of providing feedback for students to study and reflect on ways for further improvement
- Difficult to write detailed comments due to time restrictions
- Peer assessment
  - Provide a good guide for students to make proper assessment and feedback
  - Getting students to use papers is bit challenging in modern smart phone era
- Managing assessment results and giving back written feedback to students
  - Generating consolidated grades is challenging
  - Collecting and sending back paper-based assessments to students is even more challenging
  - More clerical work …

Use of Technology for Assessment

- Use of Learning Management Systems

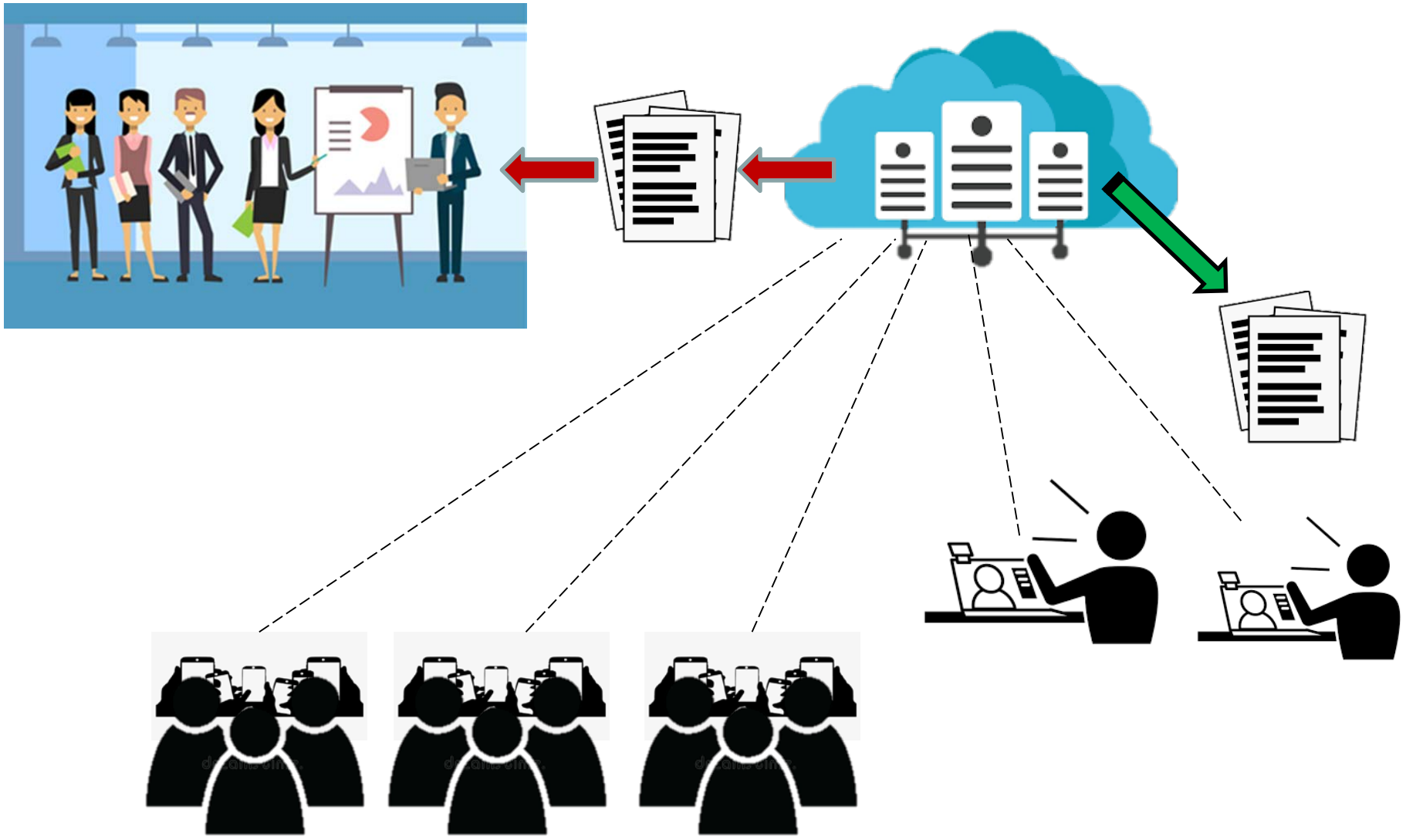
Limitations:
- Difficult to integrate peer assessment
- Rubric function is difficult to deploy when more than 1 assessor is involved
- Involving assessors from the industry?

- Web-based eAssessment Tool

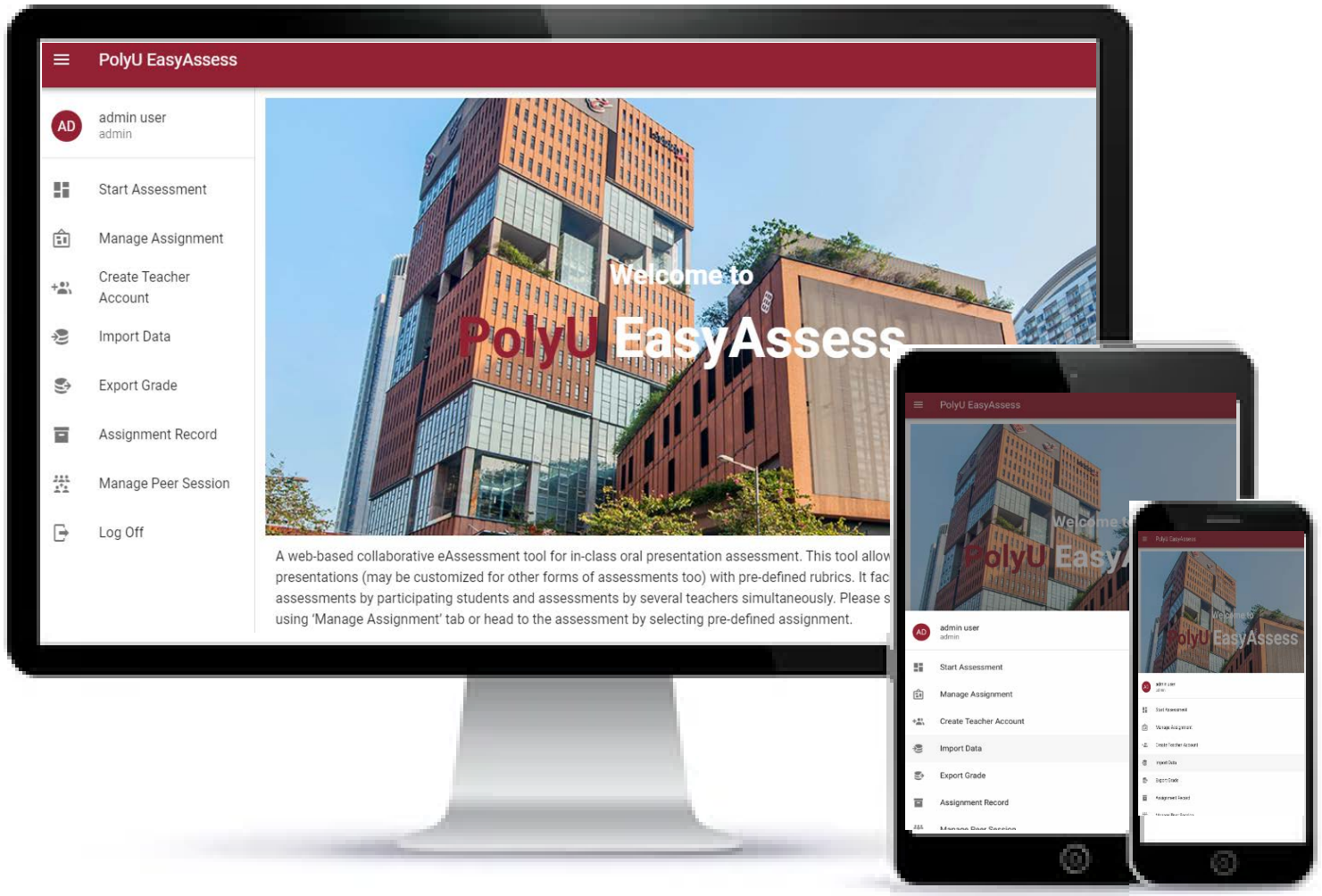
CPCE Pedagogical Innovation Fund (PIF) on e-learning

Project Coordinator: Udaya Kahangamage
Co-Project Coordinator: Ken Tsang
Software Developers:
Students from HKCC Associate in Information Technology Programme

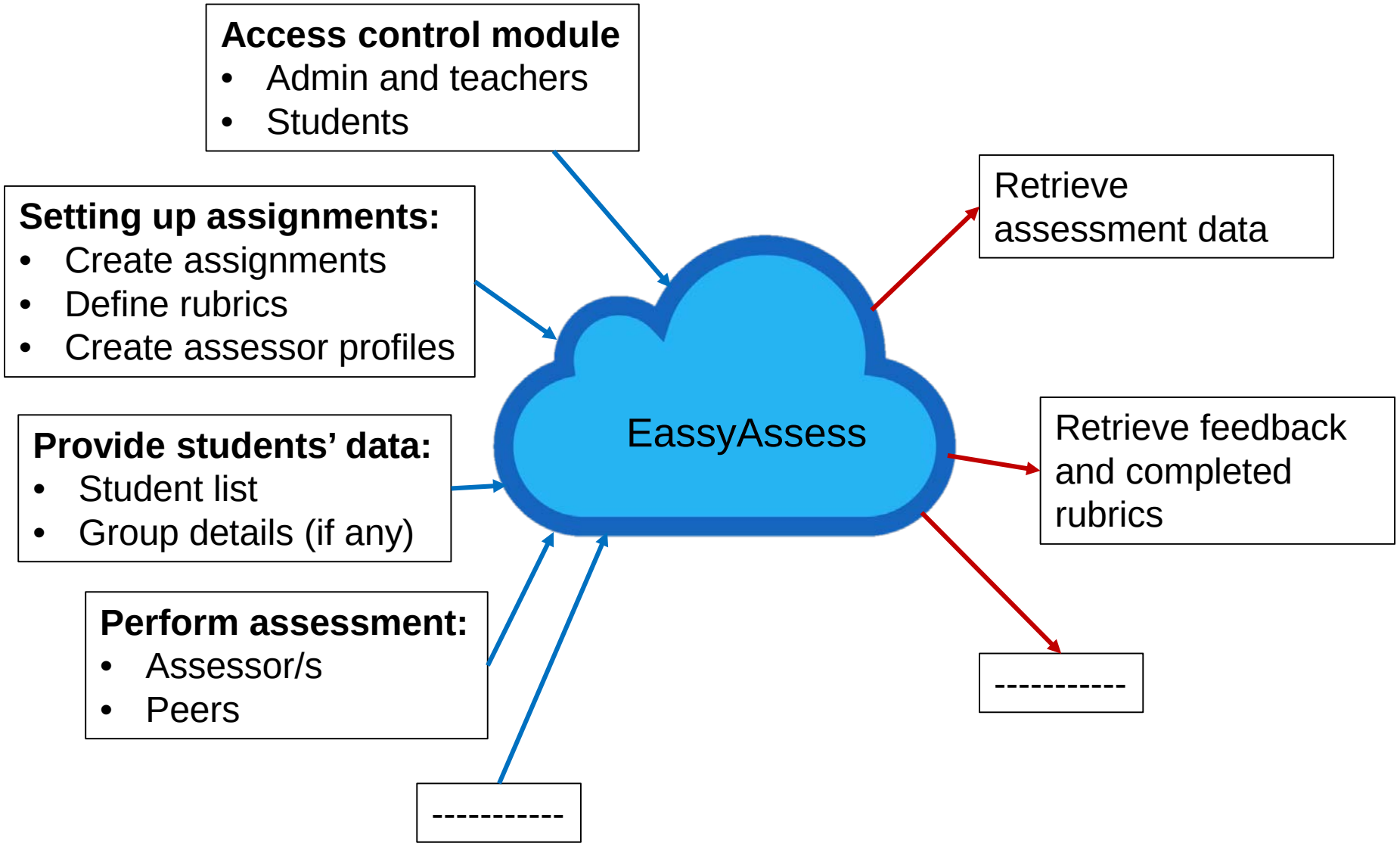
Web-based eAssessment Tool



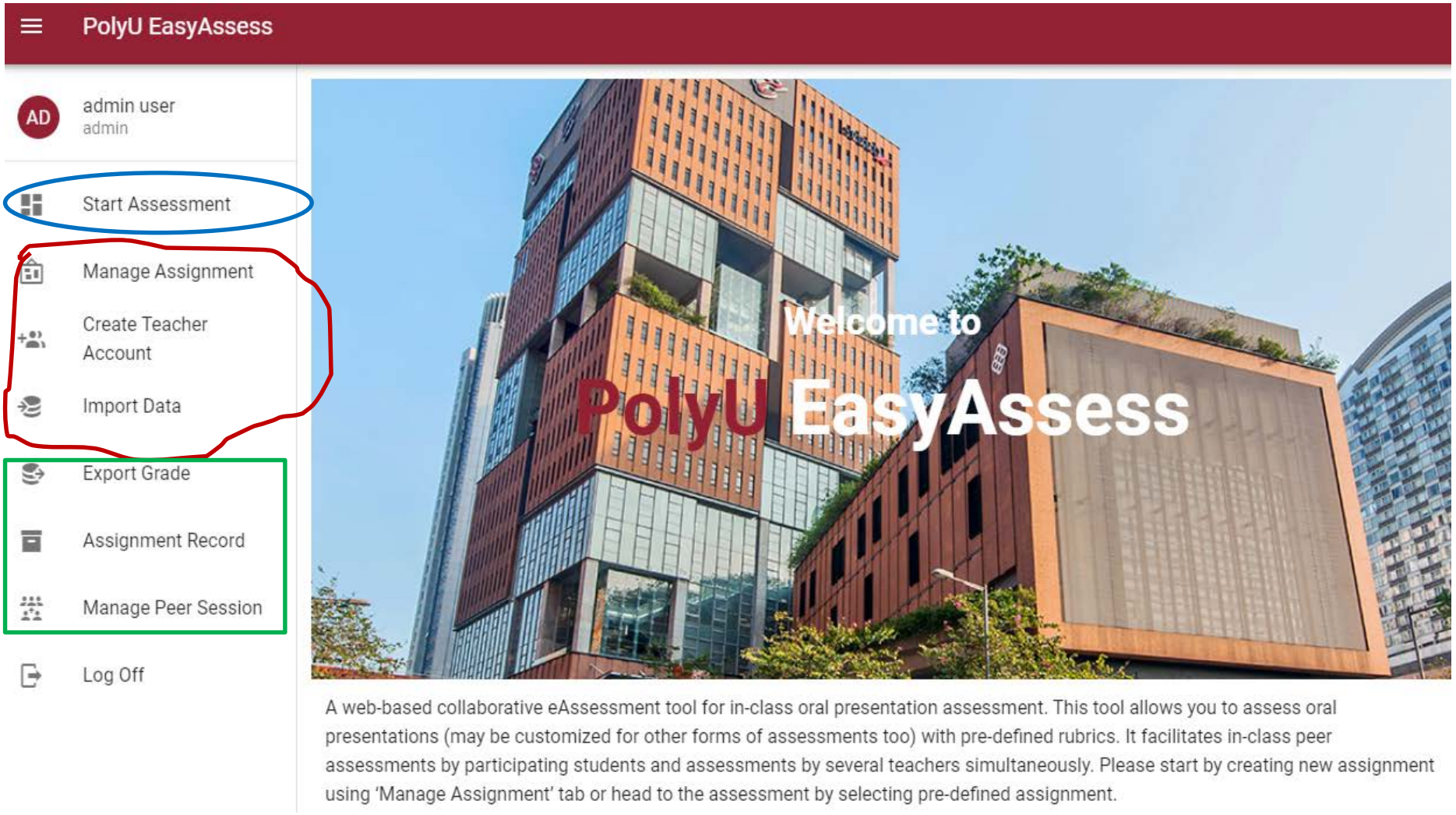
Introduction to eAssessment Tool ‘EasyAssess’



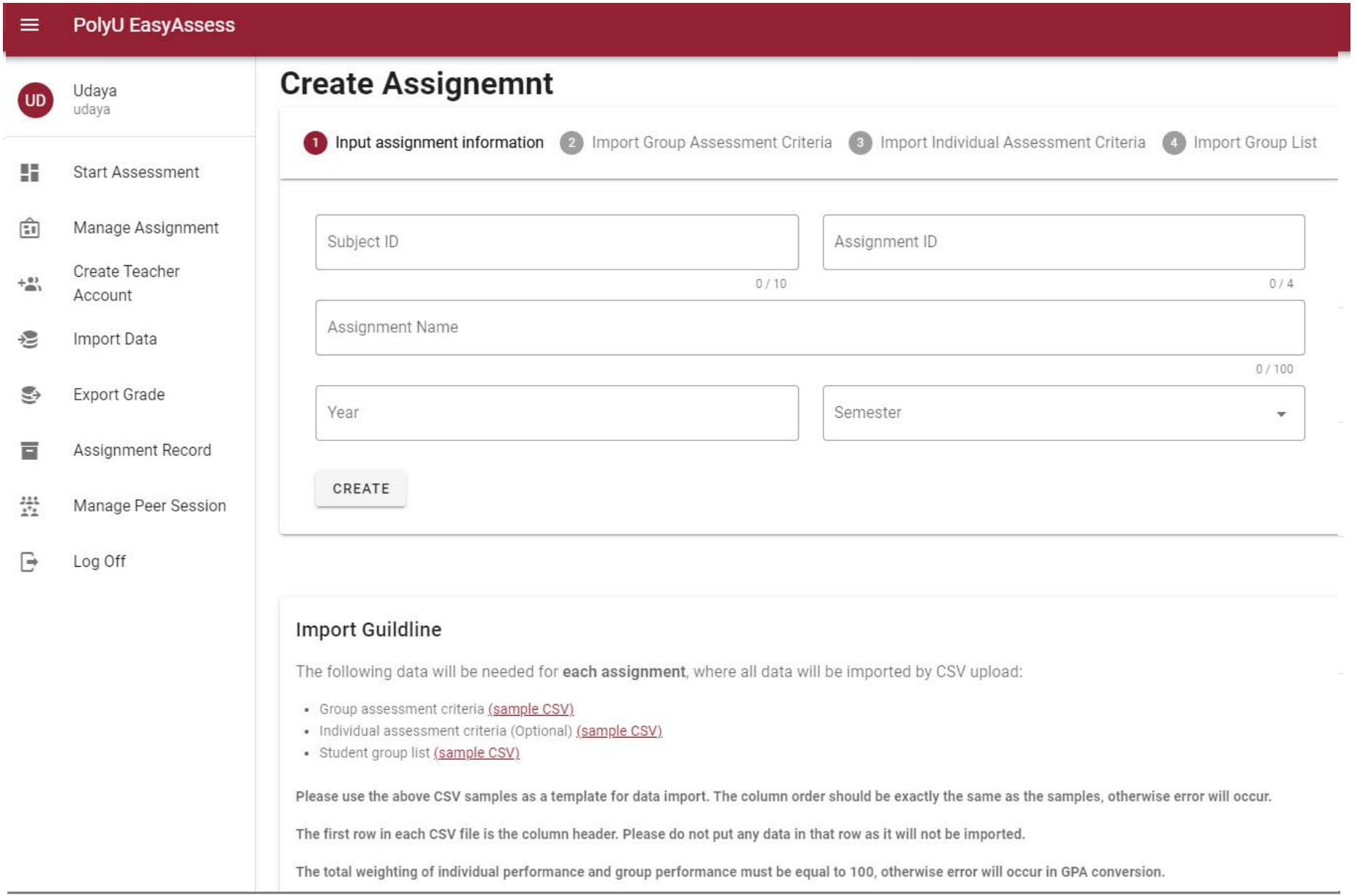
eAssessment Tool: Basic Architecture



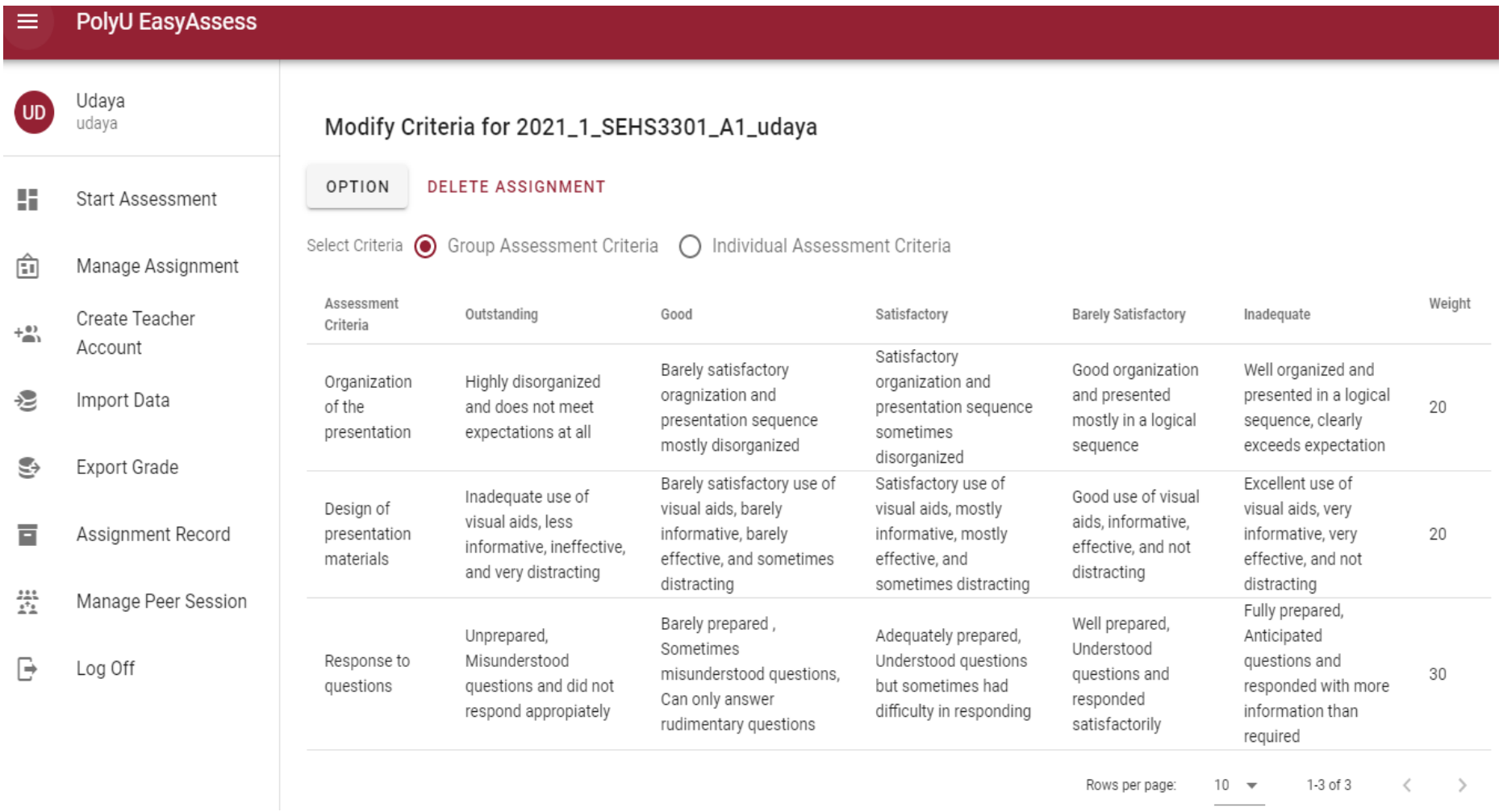
EasyAssess: User Interface



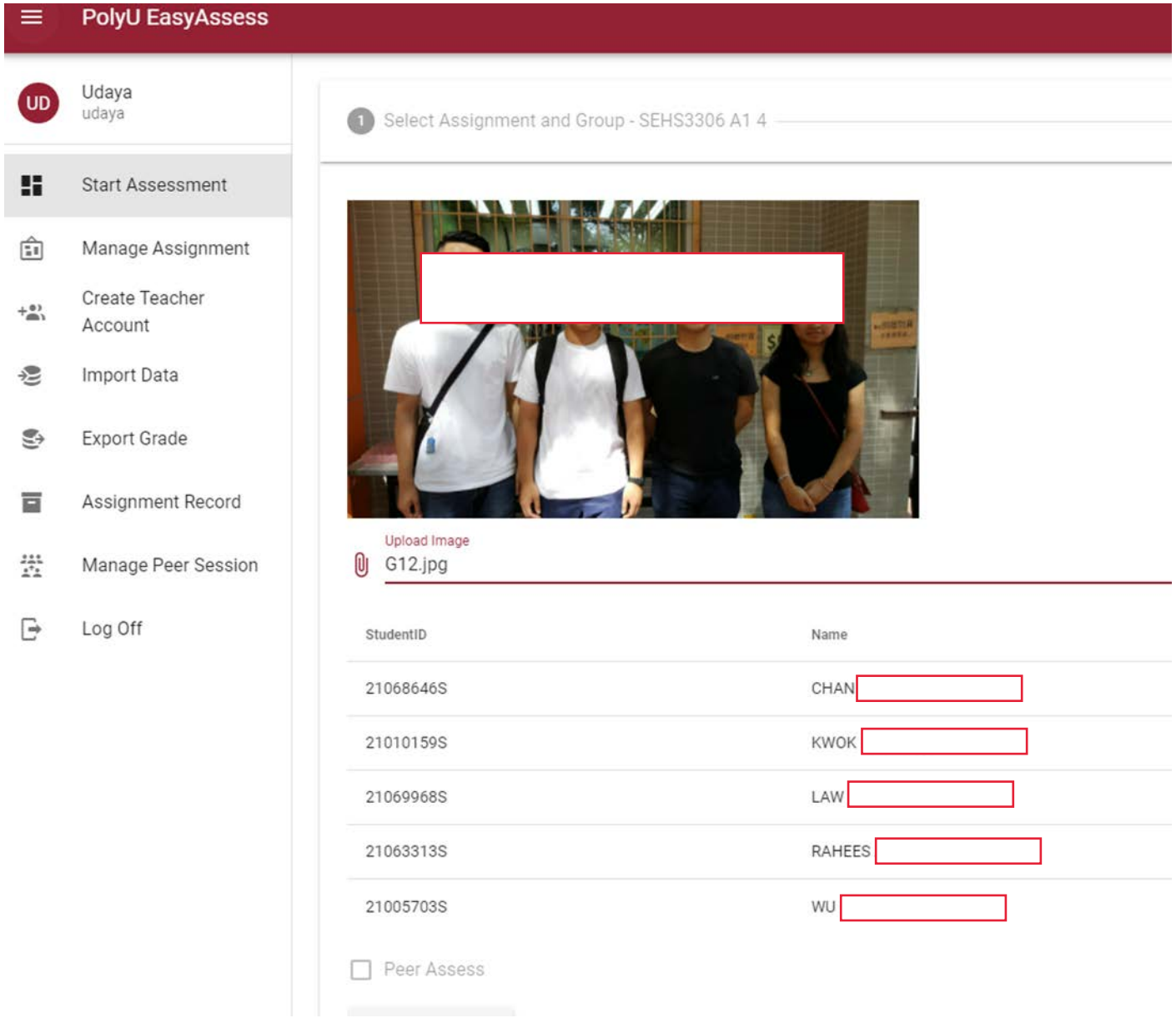
EasyAssess: Setting up Assignment



EasyAssess: Setting up Assignment



EasyAssess: Performing an Assessment



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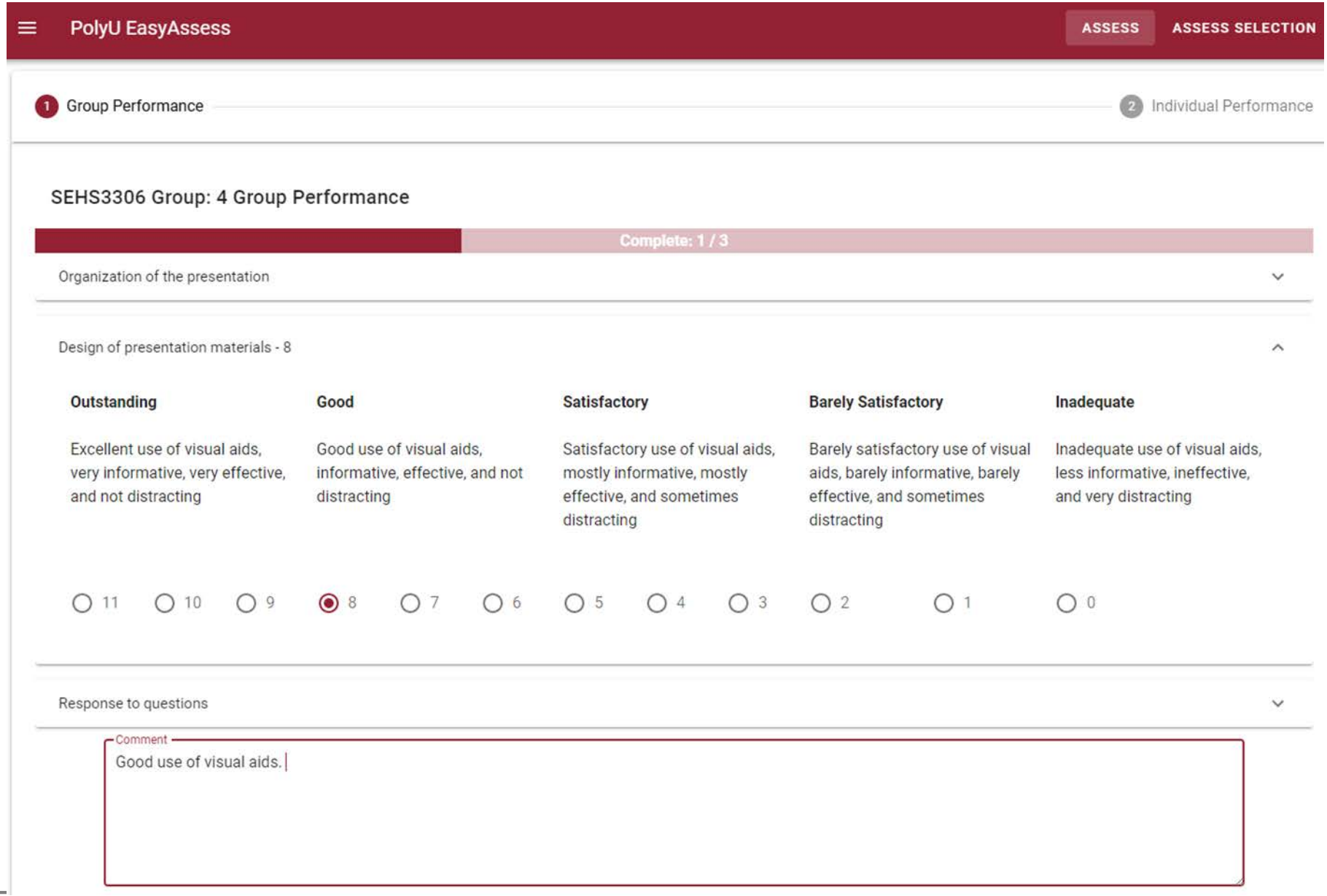


EasyAssess: Performing an Assessment

PolyU EasyAssess

ASSESS | ASSESS SELECTION

1 Group Performance — 2 Individual Performance

SEHS3306 Group: 4 Individual Performance

SUBMIT

CHAN [redacted] KWOK [redacted] LAW [redacted] RAHEES [redacted] WU [redacted]

Relevance and quality of content delivered - 3

Outstanding	Good	Satisfactory	Barely Satisfactory	Inadequate
Rich and highly relevant content, showed excellent understanding of the content	Rich and relevant content, showed good understanding of the content	Mostly relevant content, showed satisfactory understanding of the content	Barely relevant content, showed limited understanding of the content	Most of the content is irrelevant, showed no or very limited understanding of the content

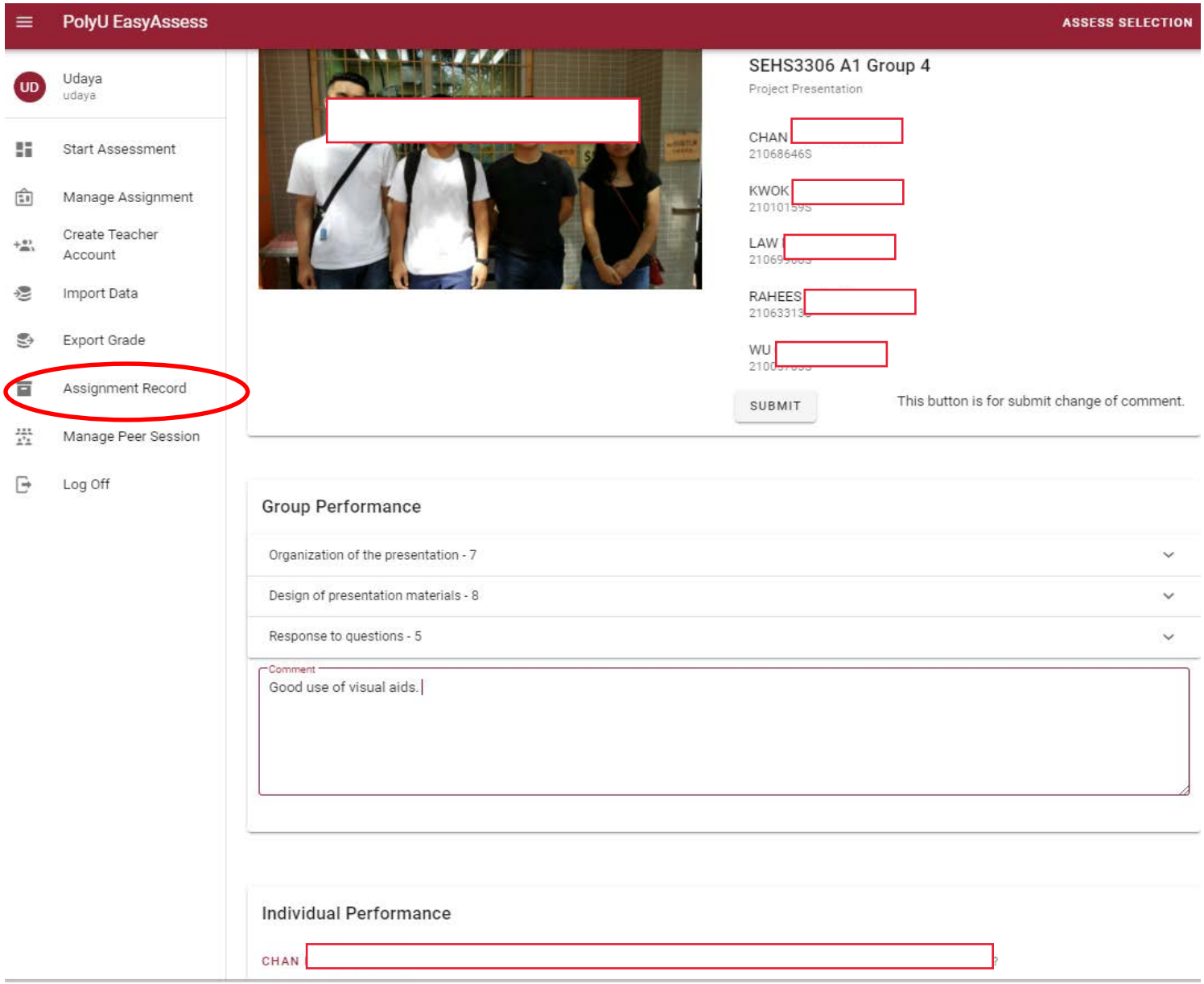
○ 11 ○ 10 ○ 9 ○ 8 ○ 7 ○ 6 ○ 5 ○ 4 ◉ 3 ○ 2 ○ 1 ○ 0

Presentation Skills -

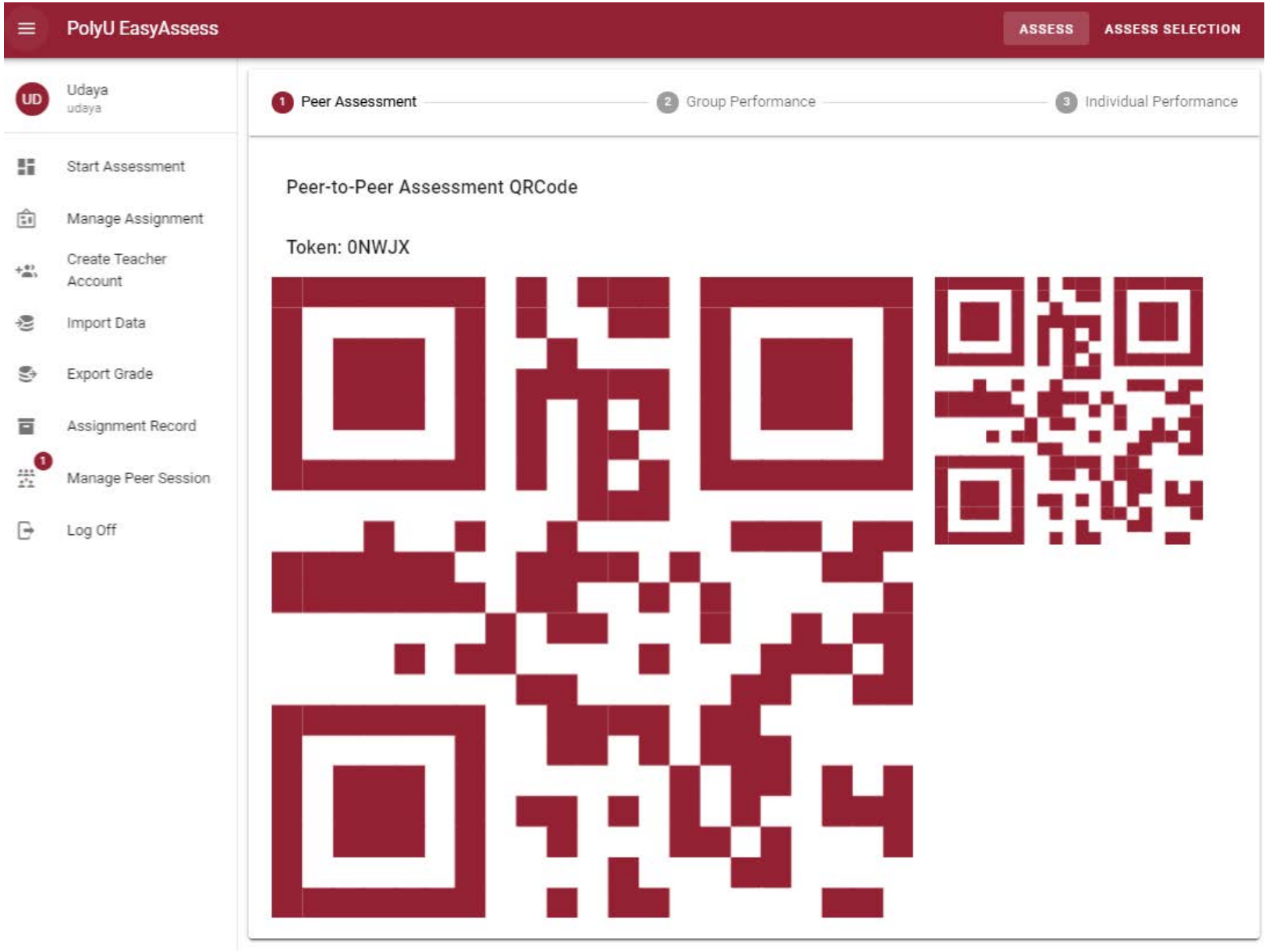
Comment

Need to provide more detailed information to clarify the key concepts presented.

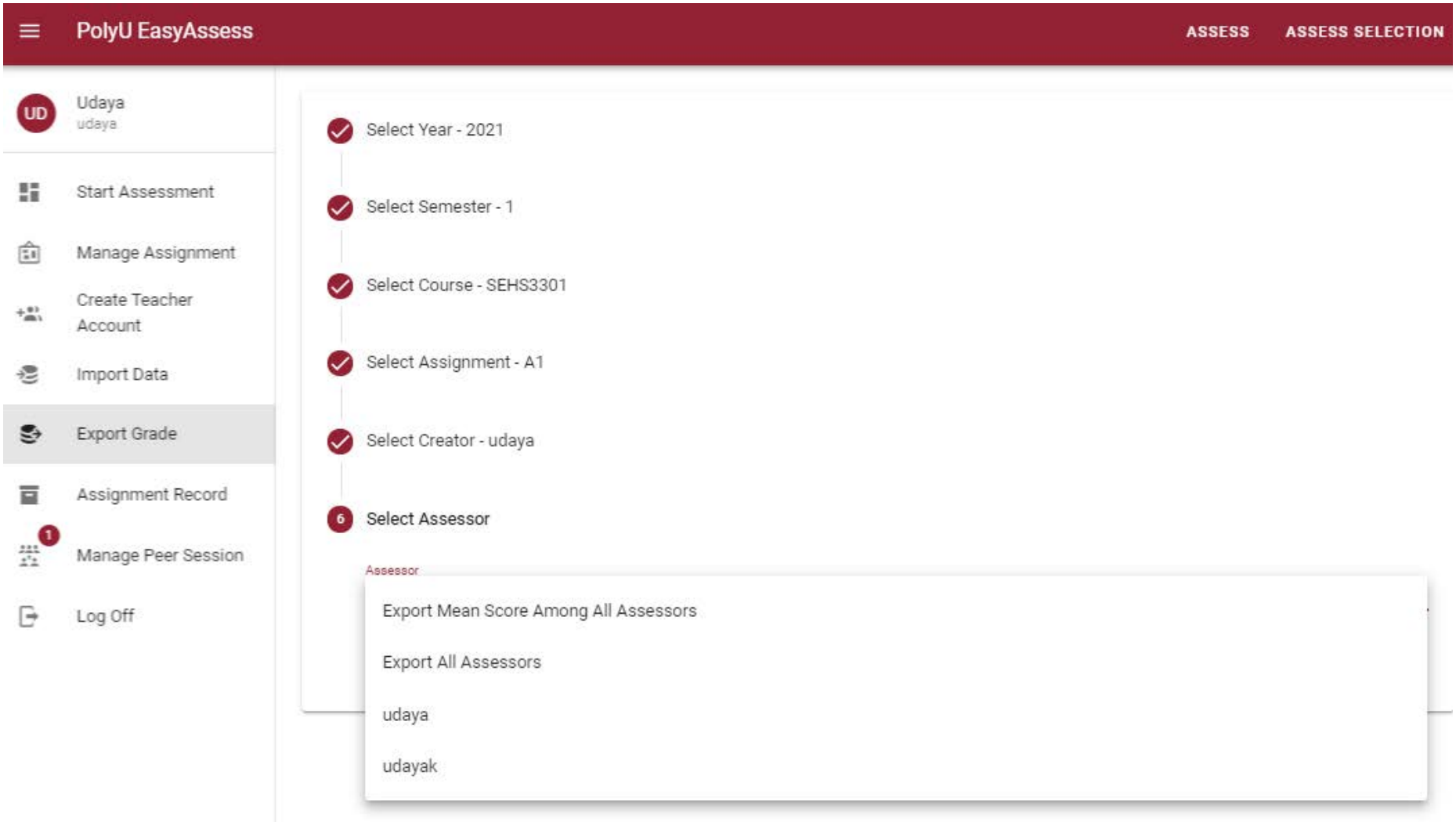
EasyAssess: Performing an Assessment



EasyAssess: Peer Assessment



EasyAssess: Retrieving Data



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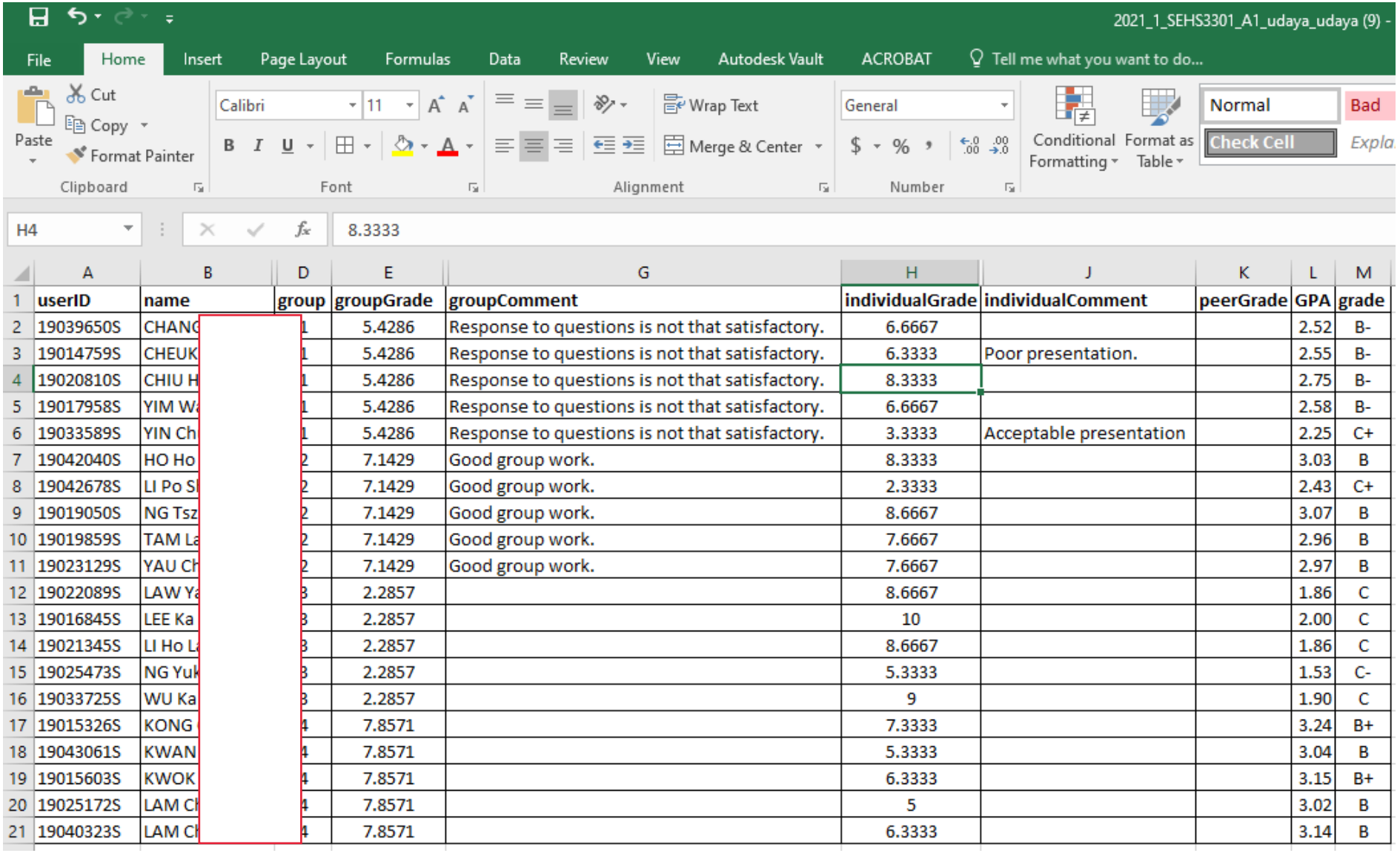

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Calibri 11 Font

Wrap Text Merge & Center Alignment

General Number

Conditional Formatting Format as Table

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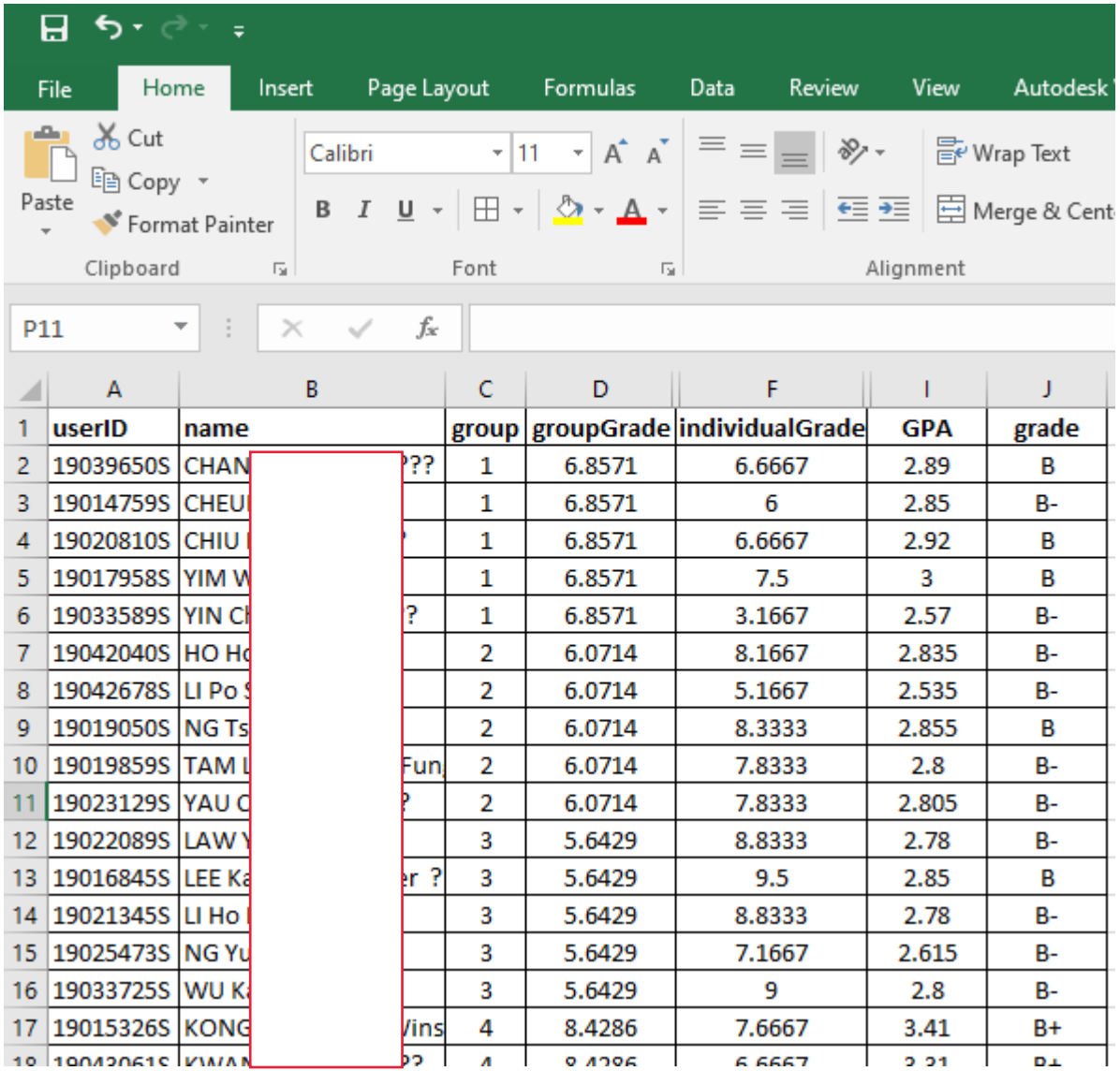
H4 8.3333

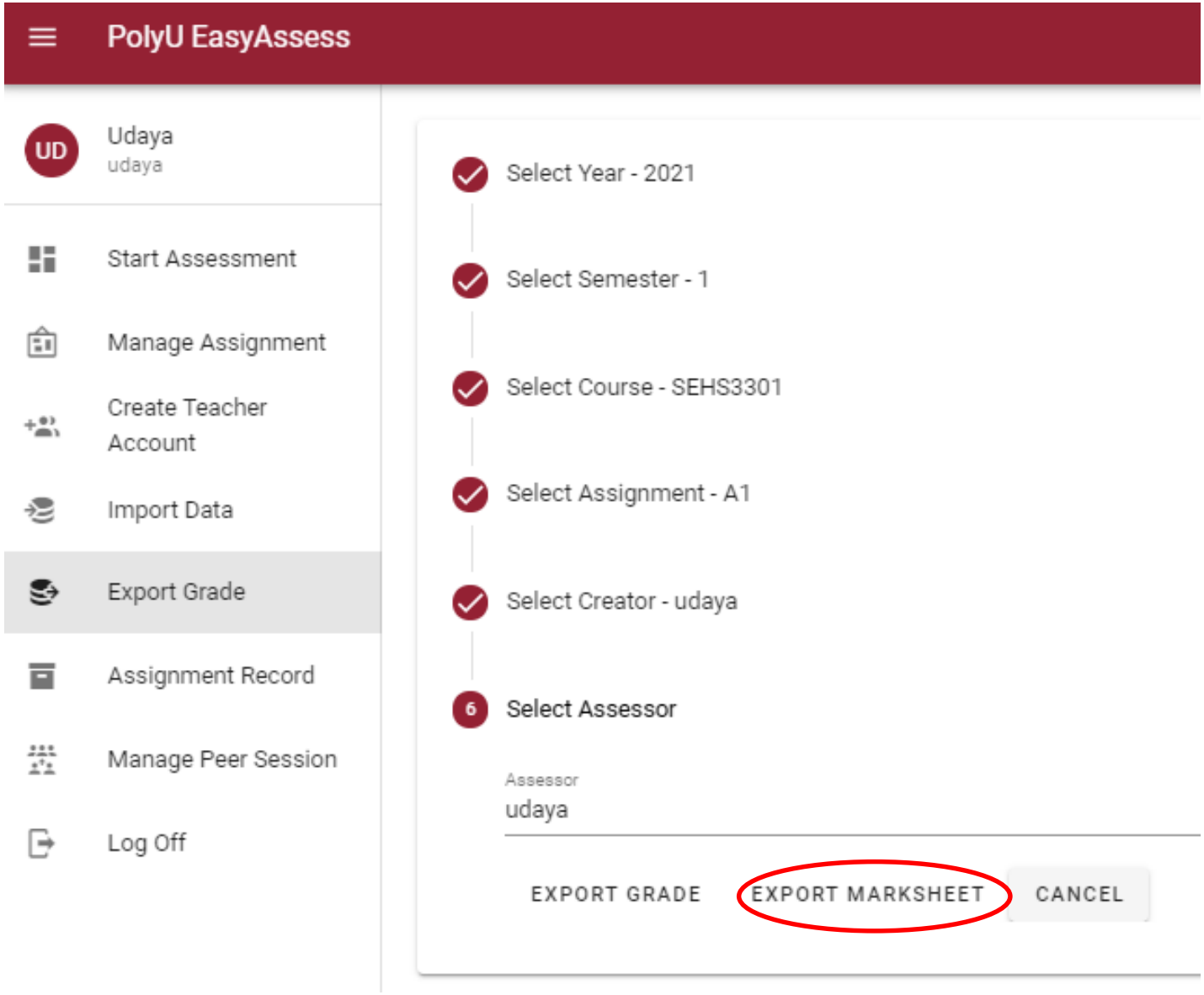
	A	B	D	E	G	H	J	K	L	M
1	userID	name	group	groupGrade	groupComment	individualGrade	individualComment	peerGrade	GPA	grade
2	19039650S	CHANG	1	5.4286	Response to questions is not that satisfactory.	6.6667			2.52	B-
3	19014759S	CHEUK	1	5.4286	Response to questions is not that satisfactory.	6.3333	Poor presentation.		2.55	B-
4	19020810S	CHIU H	1	5.4286	Response to questions is not that satisfactory.	8.3333			2.75	B-
5	19017958S	YIM W	1	5.4286	Response to questions is not that satisfactory.	6.6667			2.58	B-
6	19033589S	YIN Ch	1	5.4286	Response to questions is not that satisfactory.	3.3333	Acceptable presentation		2.25	C+
7	19042040S	HO Ho	2	7.1429	Good group work.	8.3333			3.03	B
8	19042678S	LI Po Sl	2	7.1429	Good group work.	2.3333			2.43	C+
9	19019050S	NG Tsz	2	7.1429	Good group work.	8.6667			3.07	B
10	19019859S	TAM La	2	7.1429	Good group work.	7.6667			2.96	B
11	19023129S	YAU Ch	2	7.1429	Good group work.	7.6667			2.97	B
12	19022089S	LAW Ya	3	2.2857		8.6667			1.86	C
13	19016845S	LEE Ka	3	2.2857		10			2.00	C
14	19021345S	LI Ho La	3	2.2857		8.6667			1.86	C
15	19025473S	NG Yuk	3	2.2857		5.3333			1.53	C-
16	19033725S	WU Ka	3	2.2857		9			1.90	C
17	19015326S	KONG	4	7.8571		7.3333			3.24	B+
18	19043061S	KWAN	4	7.8571		5.3333			3.04	B
19	19015603S	KWOK	4	7.8571		6.3333			3.15	B+
20	19025172S	LAM Ch	4	7.8571		5			3.02	B
21	19040323S	LAM Ch	4	7.8571		6.3333			3.14	B

EasyAssess: Retrieving Data



	A	B	C	D	F	I	J
1	**userID**	**name**	**group**	**groupGrade**	**individualGrade**	**GPA**	**grade**
2	19039650S	CHAN	1	6.8571	6.6667	2.89	B
3	19014759S	CHEU	1	6.8571	6	2.85	B-
4	19020810S	CHIU	1	6.8571	6.6667	2.92	B
5	19017958S	YIM W	1	6.8571	7.5	3	B
6	19033589S	YIN Ch	1	6.8571	3.1667	2.57	B-
7	19042040S	HO Ho	2	6.0714	8.1667	2.835	B-
8	19042678S	LI Po	2	6.0714	5.1667	2.535	B-
9	19019050S	NG Ts	2	6.0714	8.3333	2.855	B
10	19019859S	TAM L	2	6.0714	7.8333	2.8	B-
11	19023129S	YAU C	2	6.0714	7.8333	2.805	B-
12	19022089S	LAW Y	3	5.6429	8.8333	2.78	B-
13	19016845S	LEE Ka	3	5.6429	9.5	2.85	B
14	19021345S	LI Ho	3	5.6429	8.8333	2.78	B-
15	19025473S	NG Yu	3	5.6429	7.1667	2.615	B-
16	19033725S	WU Ka	3	5.6429	9	2.8	B-
17	19015326S	KONG	4	8.4286	7.6667	3.41	B+

EasyAssess: Retrieving Data



EasyAssess: Retrieving Data

SEHS3301 Case Study Presentation mark sheet
Group: 1

Group Performance

Criteria	Outstanding			Good			Satisfactory			Barely Satisfactory		Inadequate
Organization of the presentation	Highly disorganized and does not meet expectations at all			Barely satisfactory oragnization and presentation sequence mostly disorganized			Satisfactory organization and presentation sequence sometimes disorganized			Good organization and presented mostly in a logical sequence		Well organized and presented in a logical sequence, clearly exceeds expectation
	11	10	9	8	7	6	5	4	3	2	1	0
	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐
Design of presentation materials	Inadequate use of visual aids, less informative, ineffective, and very distracting			Barely satisfactory use of visual aids, barely informative, barely effective, and sometimes distracting			Satisfactory use of visual aids, mostly informative, mostly effective, and sometimes distracting			Good use of visual aids, informative, effective, and not distracting		Excellent use of visual aids, very informative, very effective, and not distracting
	11	10	9	8	7	6	5	4	3	2	1	0
	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐
Response to questions	Unprepared, Misunderstood questions and did not respond appropiately			Barely prepared , Sometimes misunderstood questions, Can only answer rudimentary questions			Adequately prepared, Understood questions but sometimes had difficulty in responding			Well prepared, Understood questions and responded satisfactorily		Fully prepared, Anticipated questions and responded with more information than required
	11	10	9	8	7	6	5	4	3	2	1	0
	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐

Group comment: Response to questions is not that satisfactory.

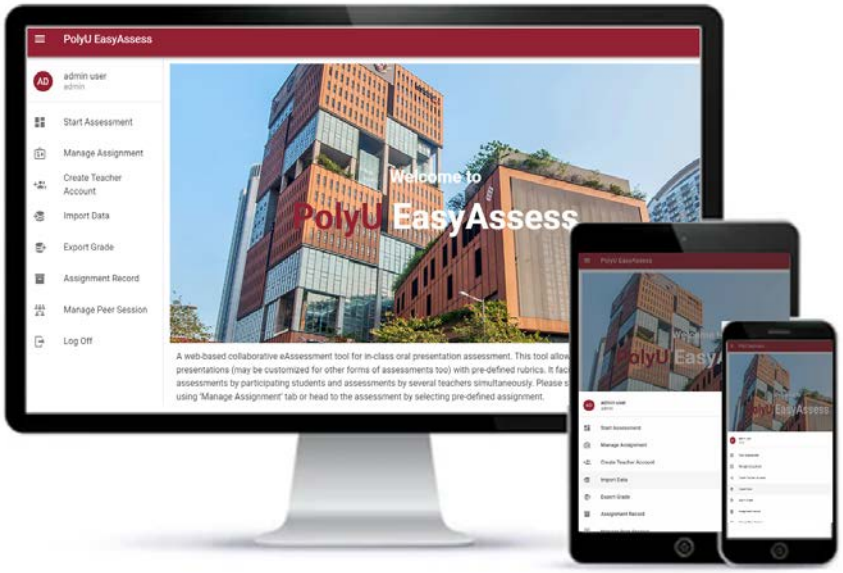
Individual Performance - YIN

Criteria	Outstanding			Good			Satisfactory			Barely Satisfactory		Inadequate
Relevance and quality of content delivered	Most of the content is irrelevant, showed no or very limited understanding of the content			Barely relevant content, showed limited understanding of the content			Mostly relevant content, showed satisfactory understanding of the content			Rich and relevant content, showed good understanding of the content		Rich and highly relevant content, showed excellent understanding of the content
	11	10	9	8	7	6	5	4	3	2	1	0
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐
Presentation Skills	Very limited eye contact, poor language skills, delivery is poor and not confident at all			Barely maintains eye contact, barely adequate language skills, delivery is poor and not confident			Maintains eye contact sufficiently, satisfactory language skills, delivery is somewhat poised, controlled, and smooth			Maintains good eye contact, good language skills, delivery is mostly poised, controlled, and smooth		Maintains good eye contact, excellent language skills, delivery is poised, controlled, and smooth
	11	10	9	8	7	6	5	4	3	2	1	0
	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐

Individual comment: Acceptable presentation

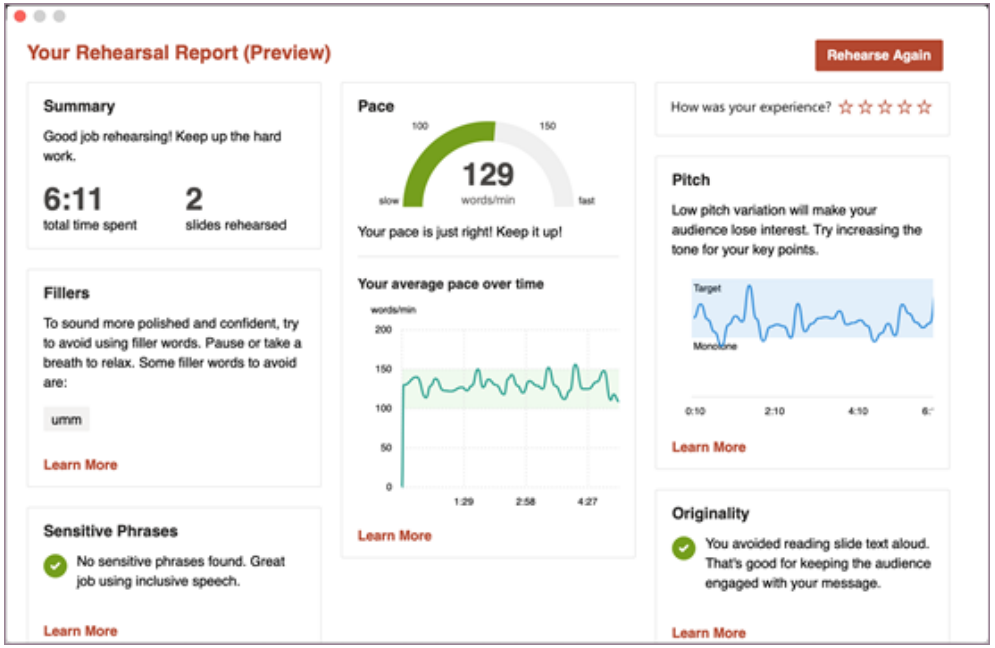
Pilot Testing

- Pilot testing was done with real-time assessment of Mechanical Engineering Final Year Capstone Project presentations
  - Face-to-face presentations
  - 5 assessors did the assessment simultaneously
  - System generated the consolidated final grade
  - Successfully generated the feedback files for individual students
  - Peer assessment module has not been tested yet
- Further improvements have been done based on the feedback received from the users
- A new version is ready for testing



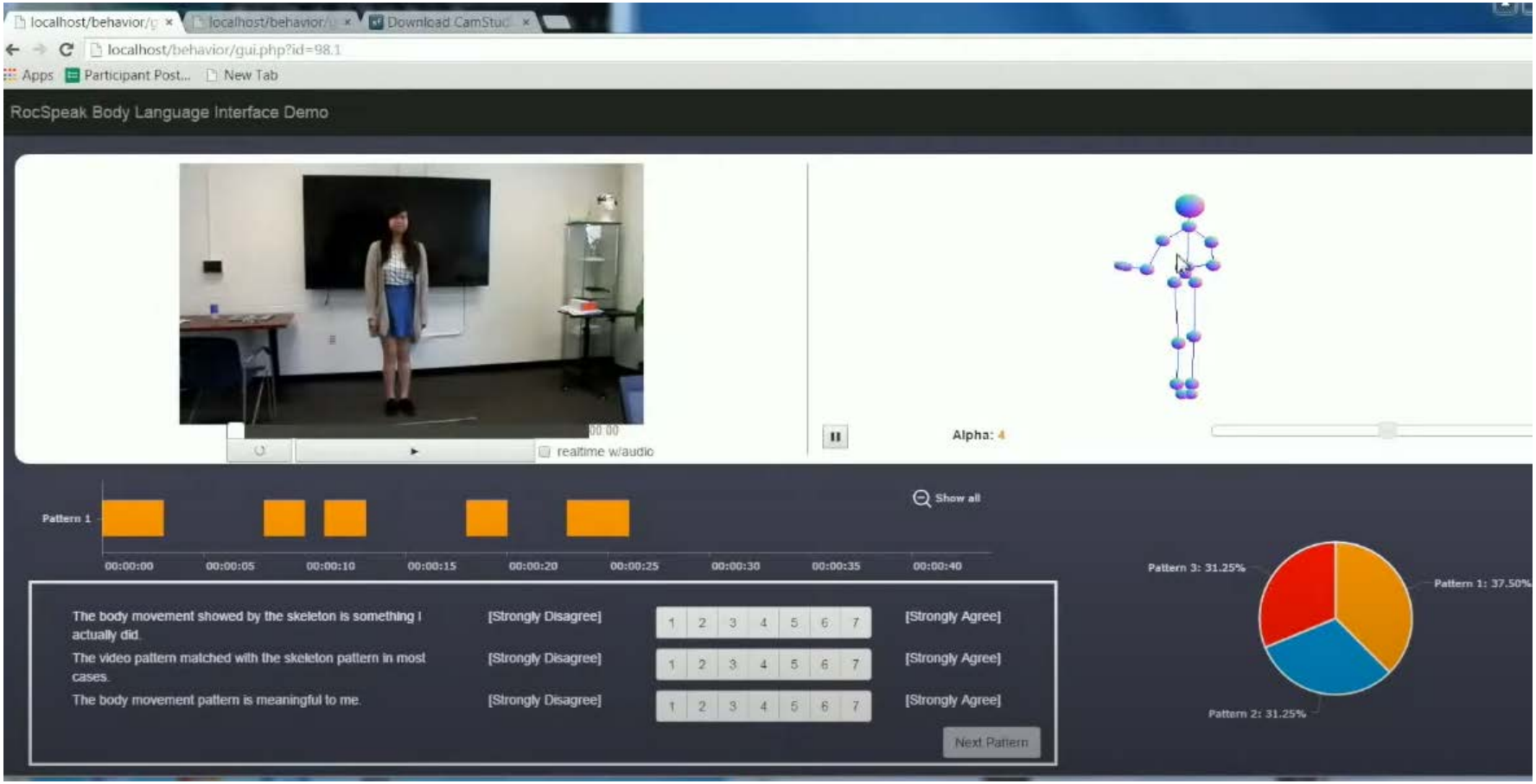
Further Improvements

- Integration of the eAssessment tool with Moodle LMS
  - Better access control
  - Improved facilities to email the feedback files to students
- Facility to calibrate assessment activity when more than 1 assessor involved in assessment
- Enhancing data visualization
- Automated feedback on presentation skills by integrating other tools available:
  - Eg.: Microsoft Presenter Coach
- Integrating speech recognition software for language skill assessment?



Further Improvements

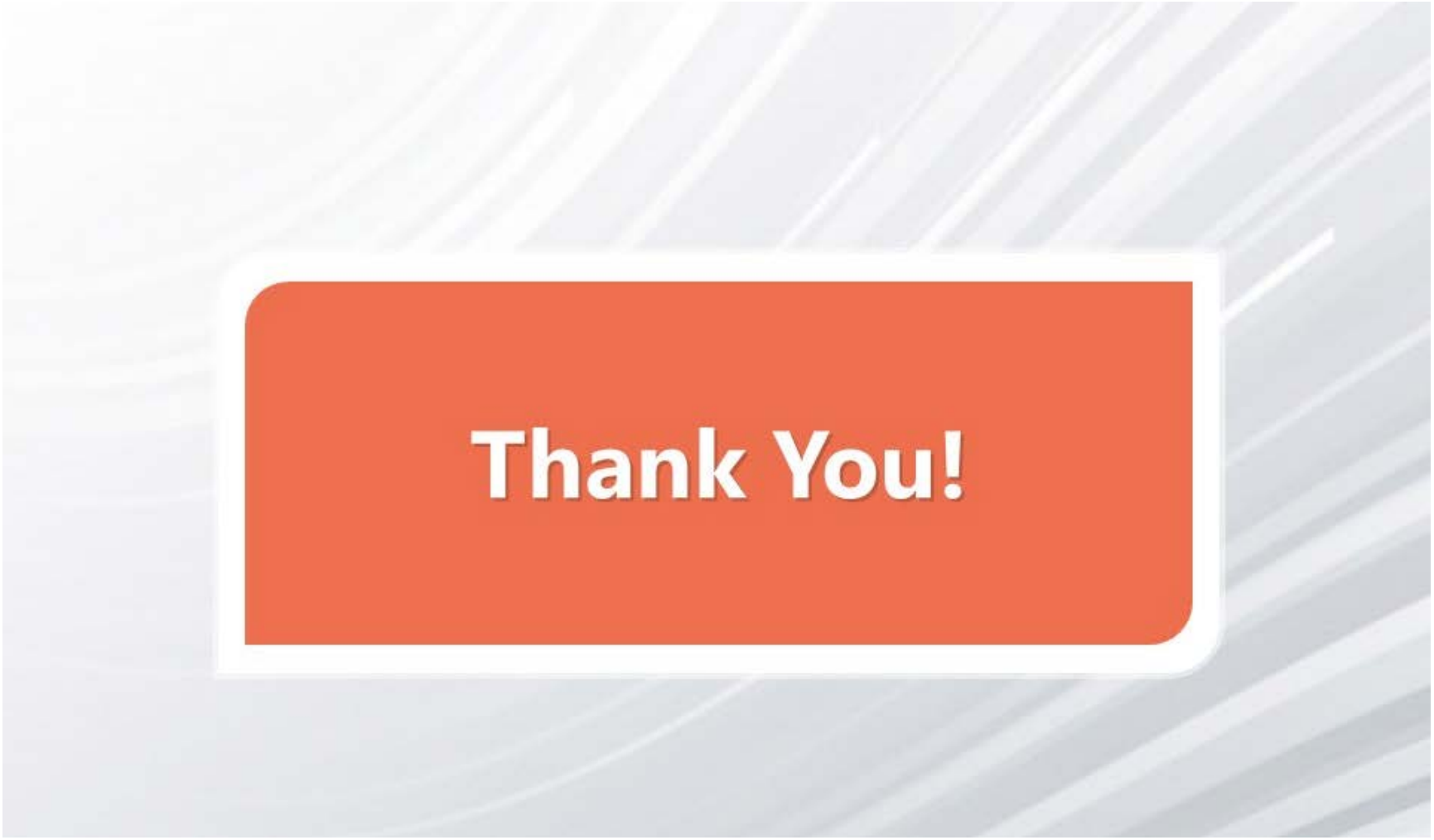
- Explore the feasibility of using gesture recognition technology of Microsoft Kinect to assess non-verbal communication
  - E.g.: **AutoManner**- An Automated Interface for Making Public Speakers Aware of Their Mannerisms



Direction for Research

- eAssessment tool will generate rich set of data that may be used for pedagogical research

- Study of impact of feedback on enhancement of students' oral presentation skills and learning
  - Impact of peer and teacher feedback on students' presentation skill development
  - Longitudinal studies of students' skills development
- Exploring automated performance assessment by integrating Machine Learning / Artificial Intelligence
- Studying/assessing oral presentations in multimodal approach
- …



Acknowledgement: This work is financially supported by the CPCE Pedagogical Innovation Fund (PIF) on e-learning.