Department of Special Education & Counselling
特殊教育與輔導學系

Using Video Annotation Tool to enhance students' reflective practices and communication competence through a collaborative learning community

Presenter:

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Outline of Presentation

- *Teacher's parental consultation and life coaching*
- What is *reflective thinking*?
- What is *communication competence*?
- *Overview of the learning process with the aids of VAT*
- Evaluations of learning effectiveness
- Discussion

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Project summary

- **Project Team**: Dr. Mabel Shek (SEC/SPFEO), Dr. Charles Leung (SEC), Dr. Stella Kong (ELE/SPFEO) & Dr. Vincent Hung (LTTC)
- Involved **6** course instructors teaching “Comprehensive school guidance”, “Life coaching with the aid of peer support” and “Professional development and field experience learning”
- Involved **258** students in total, including **118** students enrolling “Comprehensive school guidance”, **73** students enrolling the course “Life coaching with the aid of peer support” and **67** students enrolling “Professional development and field experience learning”
- ***Aims:*** investigate how Video Annotation Tool (VAT) can be applied by learners to enhance their reflective practices and communication competence of their own performance by providing feedback for other learners at an online Video-based Learning Community (VBLC)

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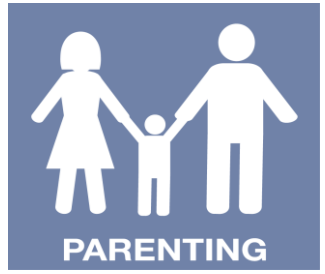
Teacher’ s parental consultation

It refers to a helping process in which teachers help parents work better and more effectively with their children, and it usually includes the following features:

Mutual information exchange	Joint intervention	Problem-based	Development/ Prevention-based
• Teachers and parents exchange information on children each other to generate a comprehensive picture of children's behaviors for better treatment strategies	• Teachers and parents collaboratively investigate, plan, take actions, evaluate and review the treatment outcomes	• Parental consultation process mainly revolves around children's presenting concerns	• Parental consultation targets at developing children's potentials, self-actualization and resilience against potential crisis

Communication skills: E.g. questioning, organization, empathic understanding, attentive behaviors, guidance



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(Brown, Pryzwansky & Schulte, 2006; Davis, 2005):

Life coaching

It is a form of helping profession that aims to facilitate client' (or coachee's) development of ability to attain goals and personal or professional growth

- It has been widely applied in many aspects, such as education, business, administration, family education

Features of life coaching:

Theory-based	Outcome-oriented	Searching for resource	Insight-oriented
• Life coach implements coaching theoretical models to facilitate coachee's development and goal attainment	• Both life coach and coachee jointly set goal during the helping process, and evaluate if the goal has been achieved	• Life coach collaboratively work with coachee to find out his/her inner resources and external resources around the coachee to help achieve the goal	• Life coach may facilitate coachee to identify and break through the coachee's erroreous/irrational thoughts that hinder him/her from goal striving

Communication skills: E.g. Listening, encouraging, reflection of feelings, challenging, goal-setting

(Association for Coaching, 2008; Grant, 2016)

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What is reflective thinking?

- Can be simply defined as the process of **analyzing** and **making judgements** of what has happened
- "a process of **looking back** on what has been done and **pondering on** it and **learning lessons** from what did or did not work" (Conway, 1994, p.114-115)
- "active, persistent, and careful **consideration** of any **belief** or **supposed form of knowledge**" (Dewey, 1933, p.9)
- "paying **critical attention** to **the practical values** and **theories** which inform everyday actions, by examining practice reflectively and reflexively. This leads to **developmental insight**" (Bolton, 2010, p.3)

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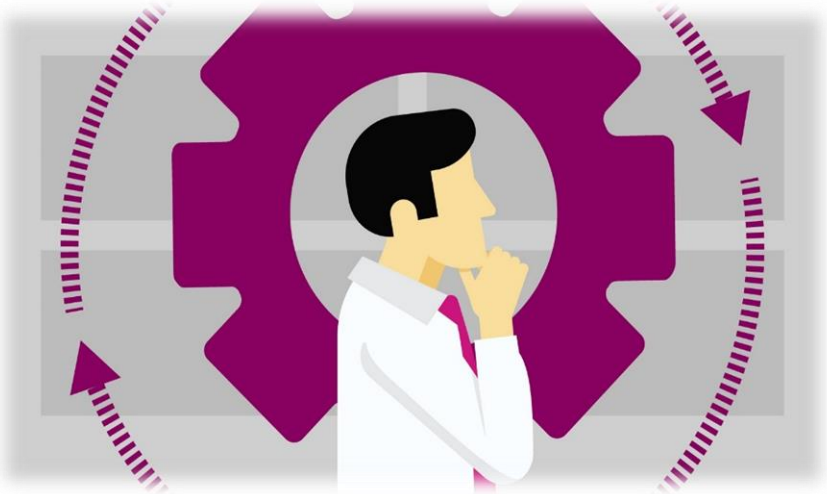
Why reflective thinking?

Reflective thinking becomes increasingly important for different professional training programs, which can help students…

- critically analyze and reflect upon their practice to better integrate theoretical concepts into teaching practices
- carefully examine their **uses of communication skills** in their professional practices



(Hatton & Smith, 1995; Korthagen & Vasalos, 2010; Moon, 2006)

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Major models of reflective thinking

Schön's (1983) classification of reflection

Two types of reflection – *reflection-on-action* and *reflection-in-action*

Reflection-on-action →

reflecting on how practice can be developed, changed or improved after the event has occurred

Example: A student-teacher reflects on his/her skills used in micro-teaching activity

Reflection-in-action →

Reflecting on the situation where changes can still be made to change the outcome, rather than waiting until a later time to reflect on how things could be different in the future.

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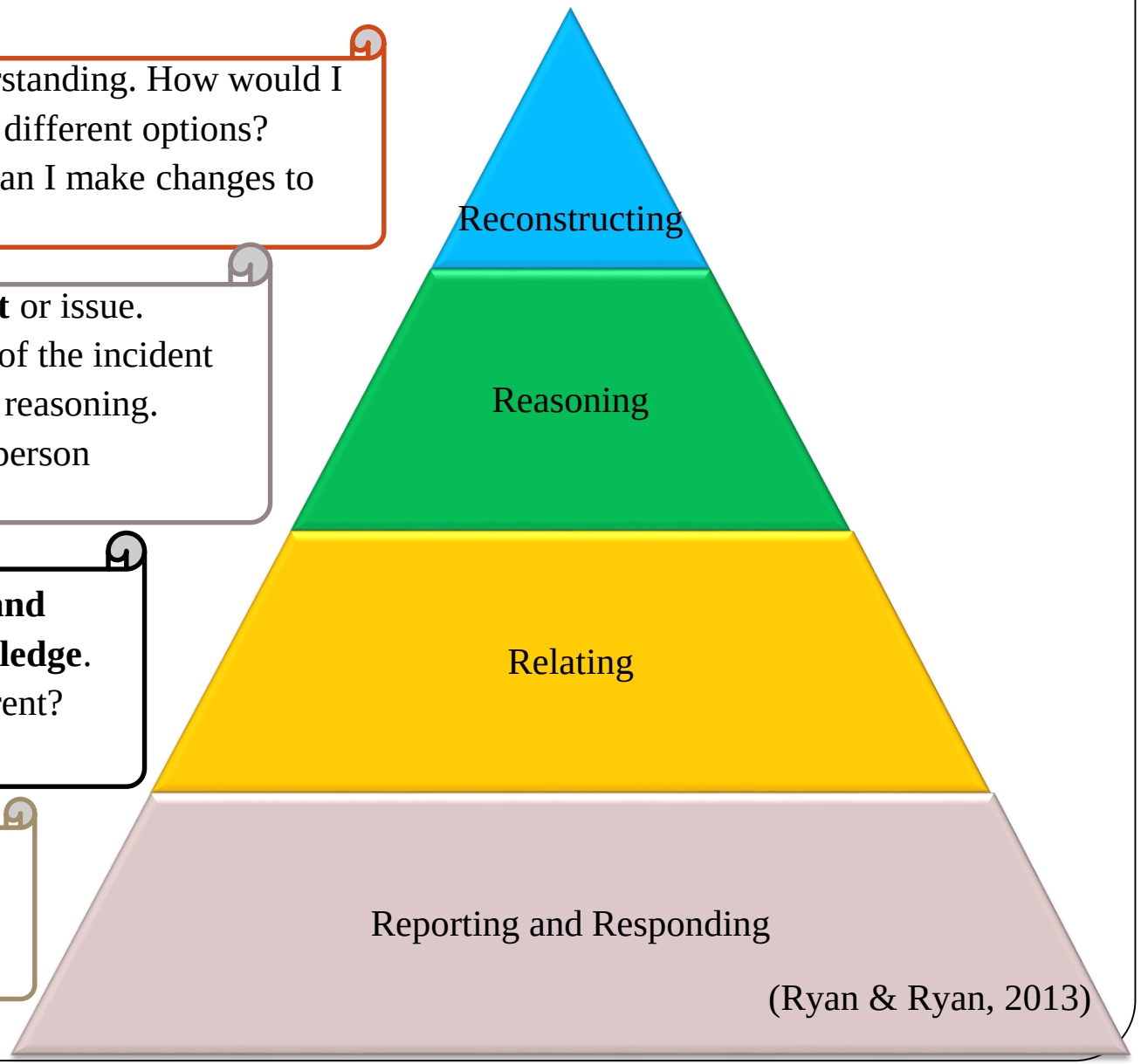
Model for Teaching and Assessing Reflective Learning (TARL)

Reframe or reconstruct future practice or professional understanding. How would I deal with this next time? What might work and why? Are there different options? What might happen if ...? Are my ideas supported by theory? Can I make changes to benefit others?

Highlight in detail **significant factors underlying the incident** or issue. Explain and show why they are important to an understanding of the incident or issue. Refer to relevant theory and literature to support your reasoning. Consider different perspectives. How would a knowledgeable person perceive/handle this? What are the ethics involved?

Relate or make a connection between the incident or issue and your own skills, professional experience, or discipline knowledge. Have I seen this before? Were the conditions the same or different? Do I have the skills and knowledge to deal with this? Explain

Report what happened or what the issue or incident involved. Why is it relevant? Respond to the incident or issue by making observations, expressing your opinion or asking questions.



(Ryan & Ryan, 2013)

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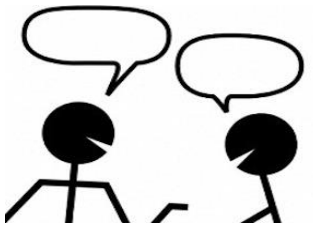
What is communication competence?

It refers to the ability to communicate in a *personally effective* and *socially appropriate* manner

- Personal effectiveness → whether one can express what he/she really thinks and feels
- Social appropriateness → whether one can determine if a particular way of communication is contextually appropriate



(Trenholm & Jensen, 2008)

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Development of video-based learning

Phase 1: Display of video-taped skill practices on the screen during classes

- Teachers and students gave comments afterwards based on their overall impressions (Kong, 2010; Sherin, 2007)

Phase 2: Video-based platform

- Videos could be uploaded and shared to classmates
- Students watched these videos and gave comments to each other (Wu & Kao, 2008)

Phase 3: Video Annotation Tool (VAT)

- Mostly embedded in the video-based platform
- Capturing specific segment from the whole video and attaching corresponding comments on the segment
- Allowing students to conduct video-analyses (Bryan & Recesso, 2006)

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New video-based learning pedagogy

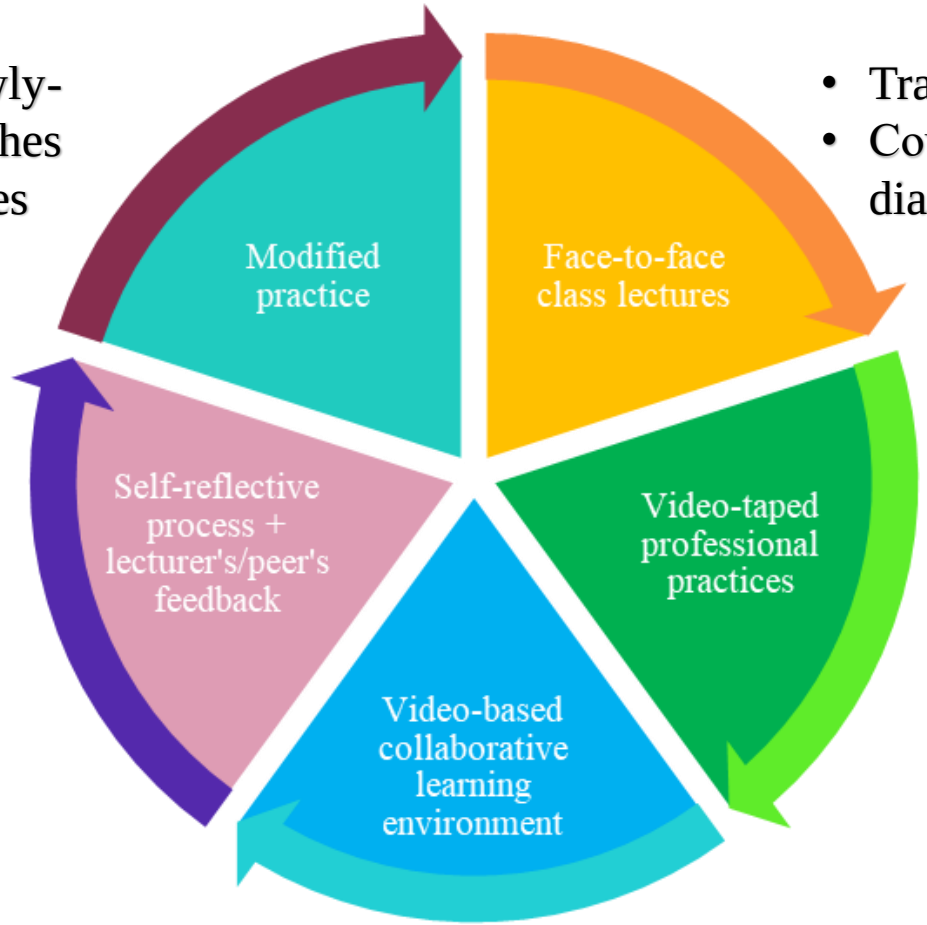
- Transmissions of content knowledge
- Course instructors' professional dialogues with students

- Students video-taped their professional practices for subsequent collaborative learning online

- Students uploaded their videos for them and others to browse
- Students applied VAT to make video analyses for giving comments

- Allowing students to reflect upon their practices individually

- Students apply the newly-learning skills/approaches in professional practices



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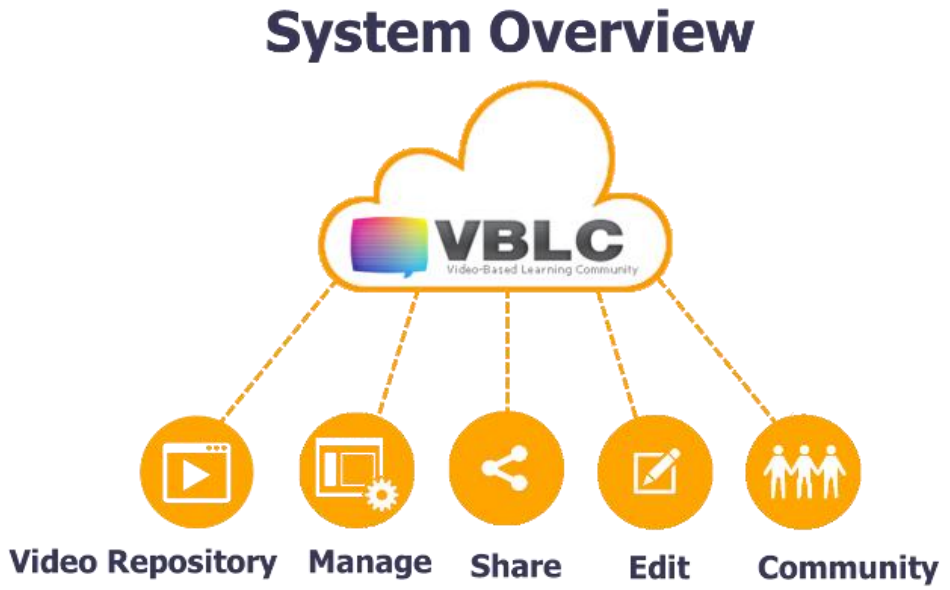
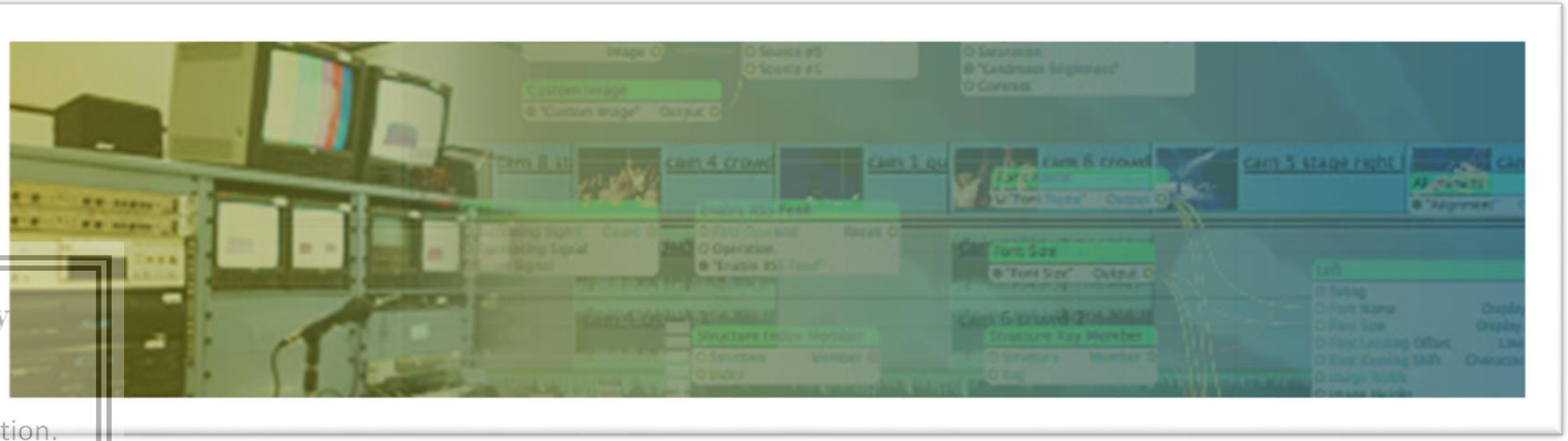
Short demonstration

Applying VAT in VBLC to give peer comment





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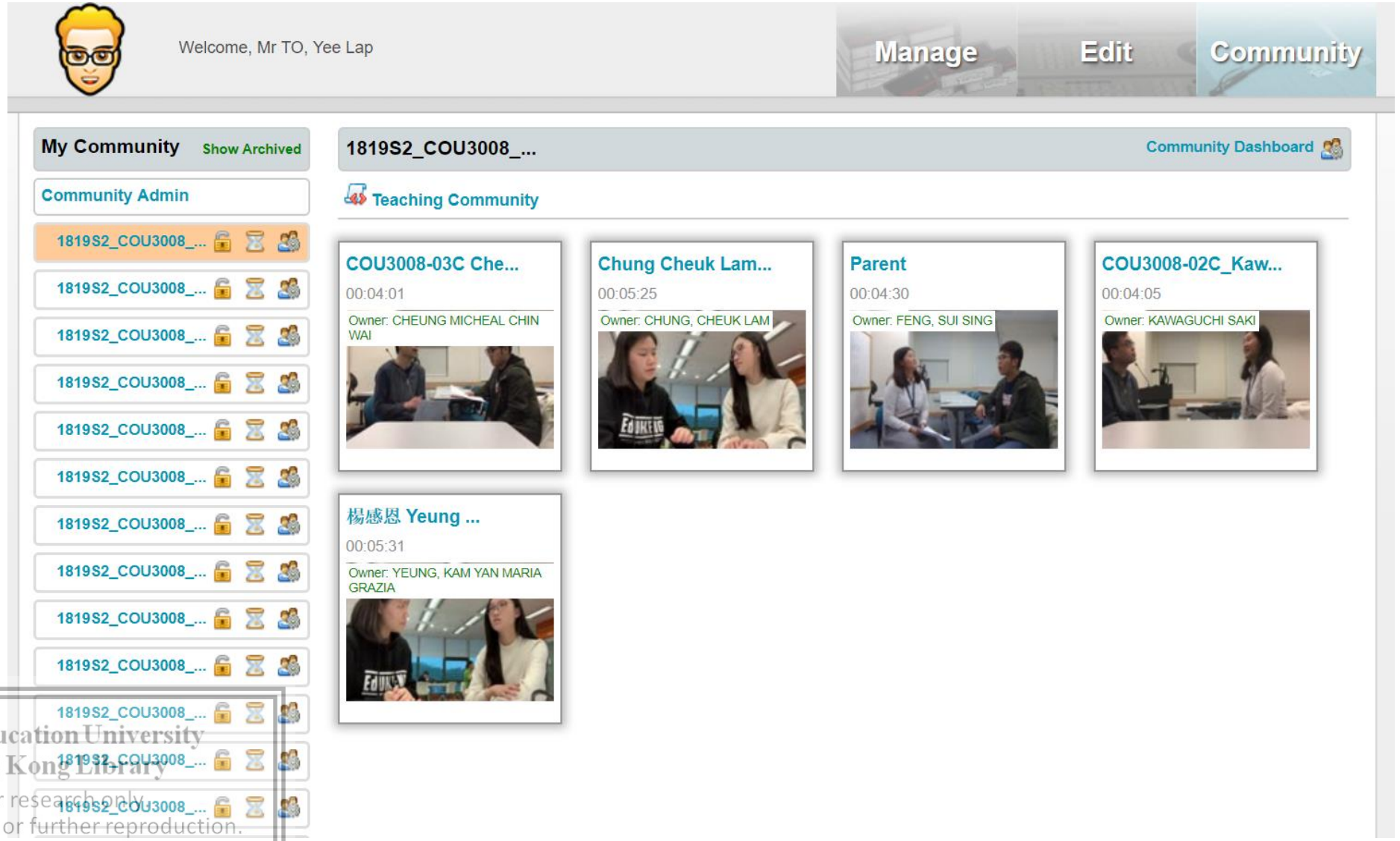
Interface of the VBLC learning community



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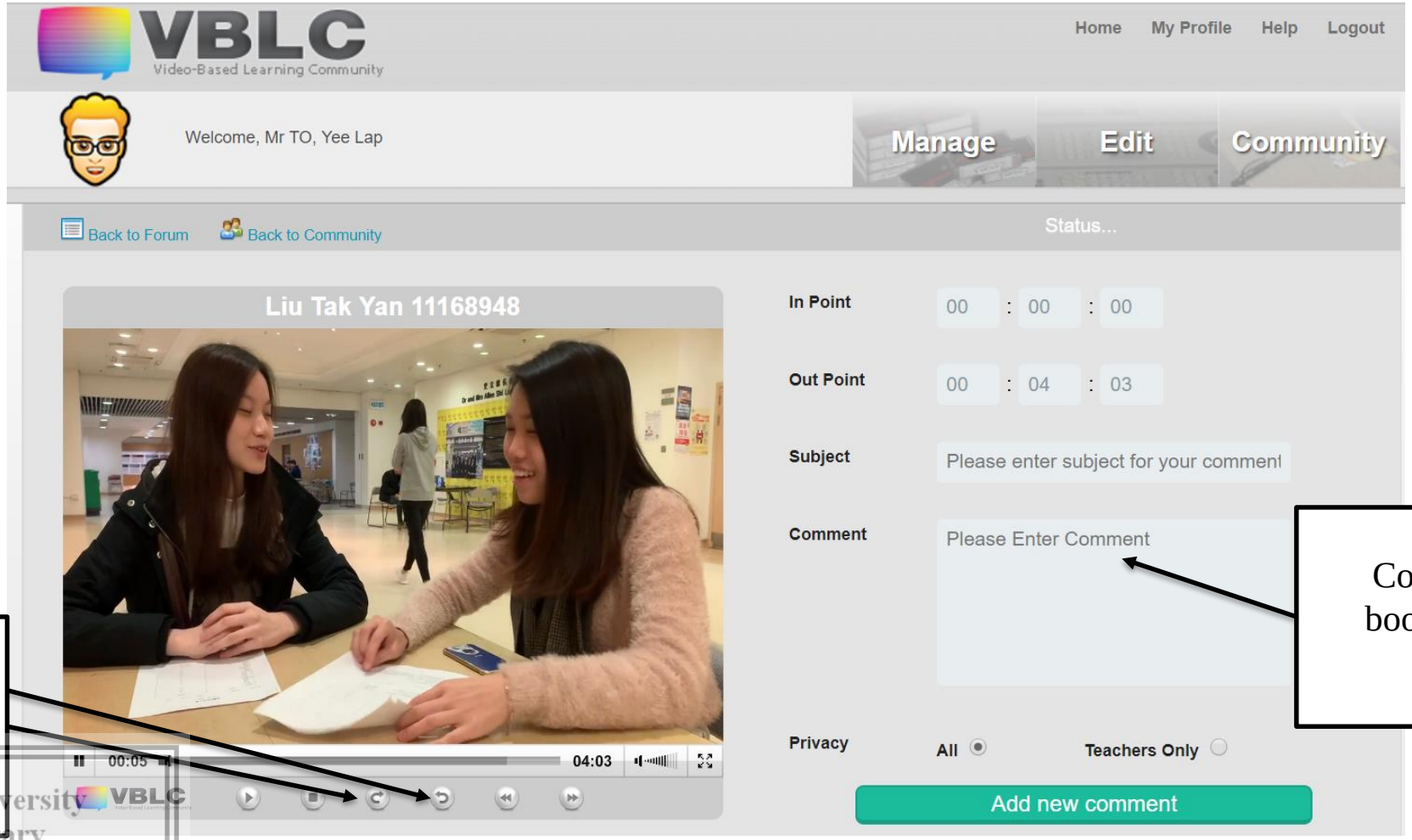
Interface of the VBLC video communication panel in VBLC



The "Mark-in" and "Mark-out" buttons for creating a bookmarked (annotated) comment

Comments on the bookmarked video segment

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Interface of the VBLC community bulletin board

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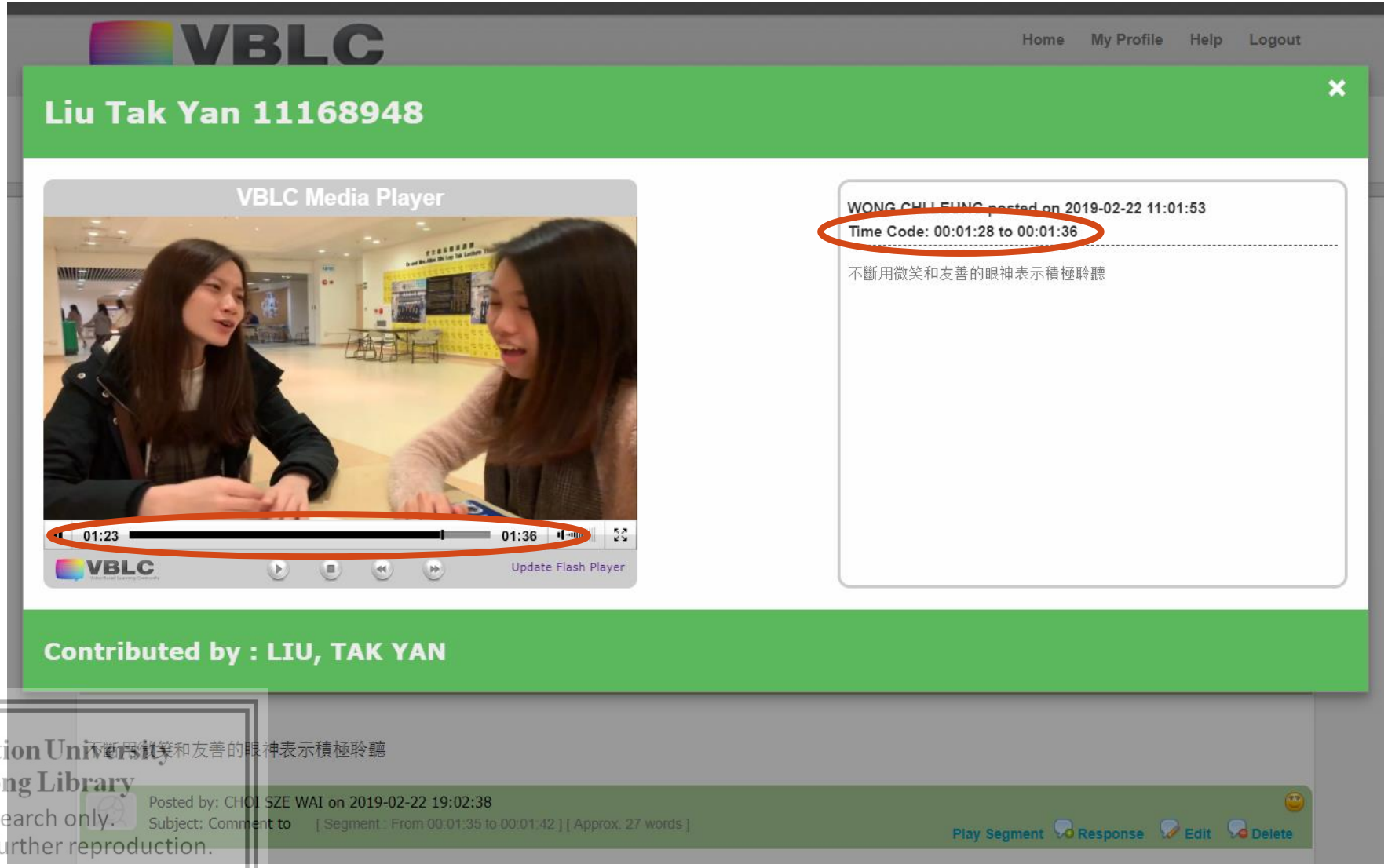
Play segment which allows student to reflect on the comment



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Evaluations of the effectiveness of using VAT

1. Would students using VAT during their collaborative learning on video-based platform have greater improvement in reflective thinking and communication competence in consultation and life coaching practices respectively?

2. What are the advantages of VAT that facilitate students' learning?

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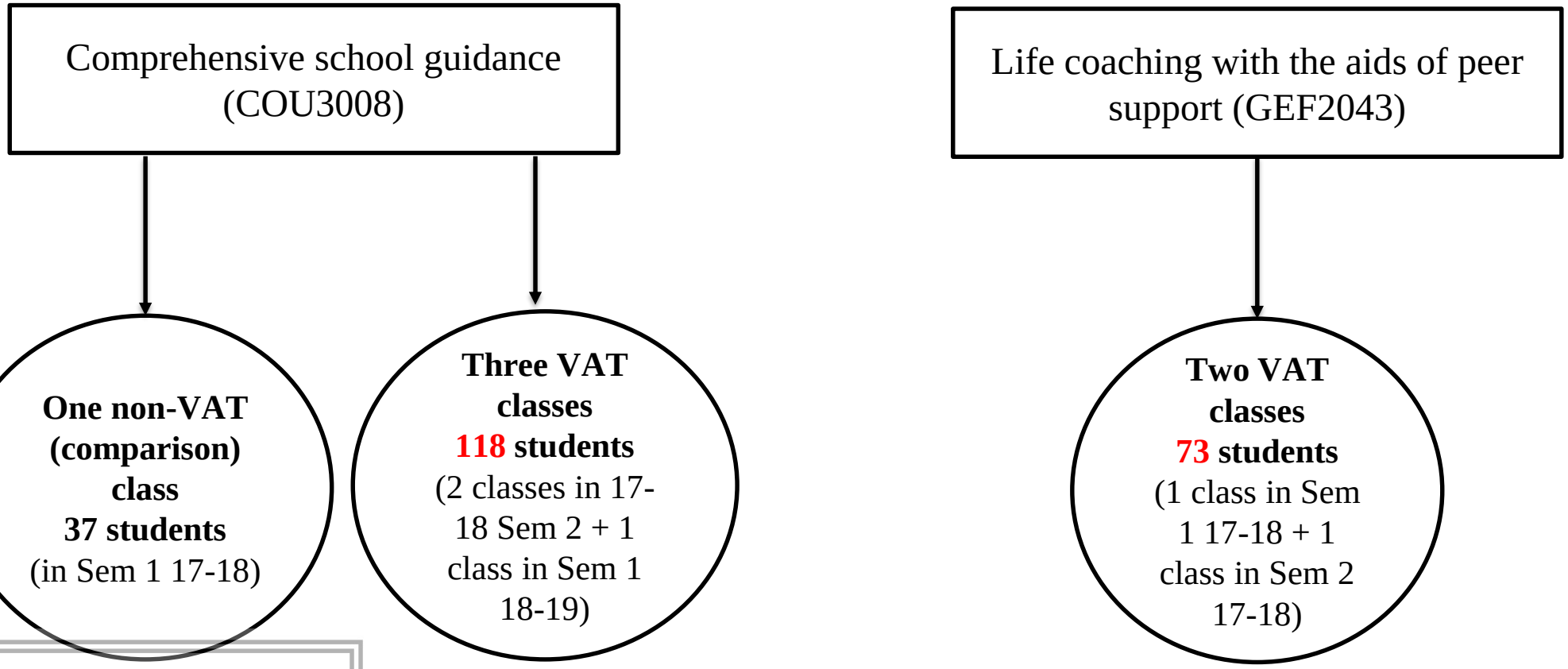
Methodology (Participants)



Total number of students in VAT class = **191**

Total number of students in non-VAT class = **37**

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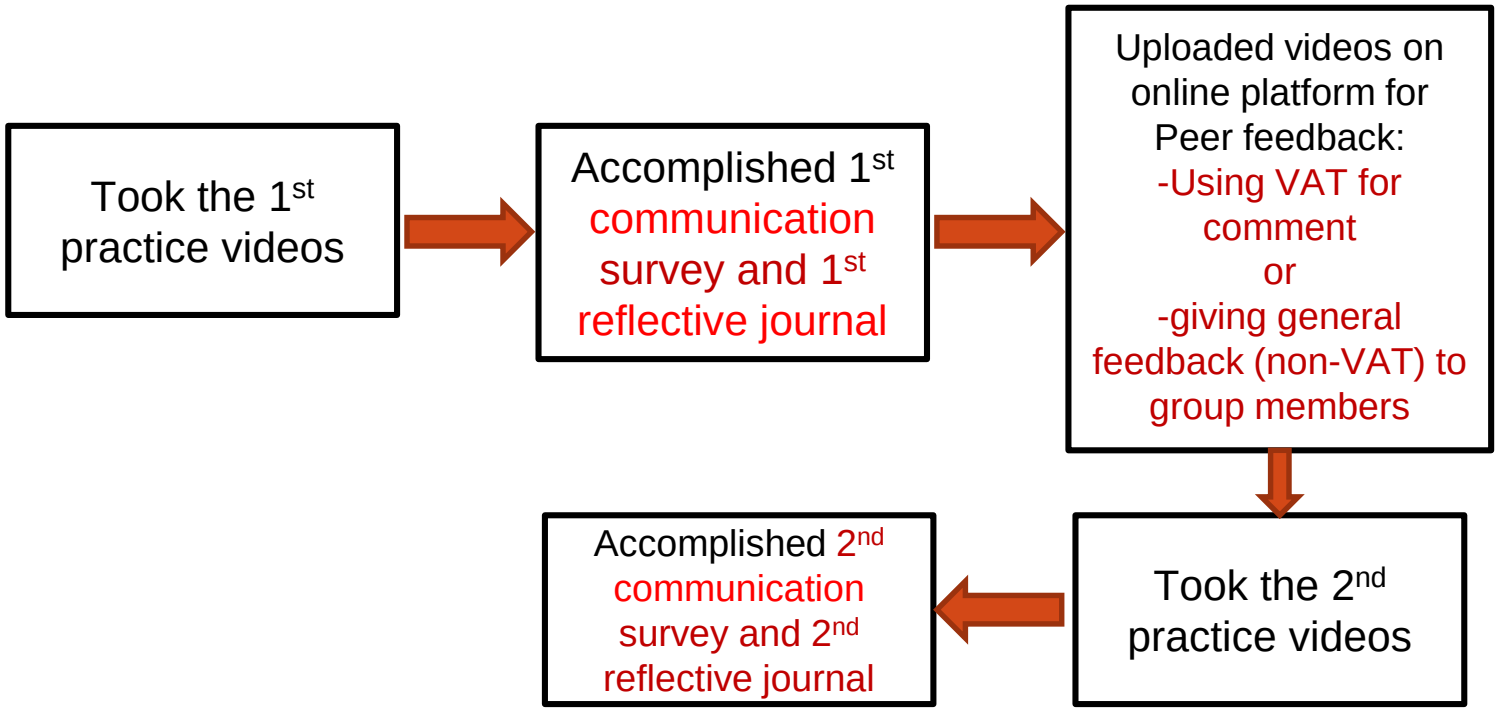
Methodology (Data-collection process)



Focus group interviews: 22 students participated
(18 students from COU3008
and 4 students from GEF2043)
Question to address:
Advantages of using VAT?

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Methodology (Measures)

1. Self-reflective journals (200-300 words)

Using ***content analysis*** method for coding the reflective journal

- Divided each reflective journal into different segments
- Analyzed reflective segments in each journal by numbering the level of reflection adopted from the model of Ryan & Ryan (2013)
- Both average score of reflective thinking and maximum score of reflective thinking in each journal was used to indicate student's reflective thinking level

- Calculation of inter-rater reliability (Cronbach's alpha)
  - 16 journals were co-rated by two independent raters
  - Discussed the discrepancy when it was numerically large and re-coded again
  - Results: Score assignment: **0.93**

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Level	Name	Description	Example
1	Reporting and Responding	The reflective note includes description(s) of some scenarios or events, expression(s) of writer's feeling(s) and subjective judgement(s) or identification(s) of either knowledge understand, skills applied, one's strength or weakness pertinent to the professional practice.	...I found that I am too nervous when having the mock consultation, have too many pauses and always look downwards... (Student A)
2	Relating	The reflective note indicates writer's articulation of skill, knowledge applied (e.g. theoretical concept) or own strength and weakness, supplemented by description of corresponding scenario in the professional practice.	...I encouraged the parent to express his feelings and opinion by using some phrases such as "Yes, I understand that". This can let the parent feel more comfortable and willing to have a deeper conversation with the teacher... (Student A)
3	Reasoning	The reflective note illustrates writer's identification and elaboration of implicit significant factor(s) underlying the scenarios that are crucial to the in-depth understanding of the whole process in the professional practice.	...I think that the skills of minimizing parent's emotions and normalizing the "problems" are crucial. I can let the parent know that student's misbehavior is not a shameful issue, which in turn increases the chance to co-operate with class teachers... (Student B)
4	Transformative	The reflective note discusses how the reasoning process can contribute to the writer's new insights or perspectives, which subsequently leads to writer's advancement and transformation in professional practice.	...It is undesirable to ask the parent "does your daughter have any friend in school?", since it may create a delusion that having no friend is a problematic issue and threaten the parent unnecessarily. In future, this question can be replaced by the question like "do you know any of your daughter's best friend(s) in school?" ... (Student C)

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The average score of reflective thinking = Total score summed up from all reflective segments ÷ number of reflective segments

The maximum score of reflective thinking = *The* ***highest score*** *assigned to* ***any reflective segment*** *in each journal*

Survey on communication competence (parental consultation)

Active Listening

* 1) Use body movements or facial expression to show your attentiveness

	1	2	3	4
Skill level	○	○	○	○

* 2) Keep your eye contact to the parent

	1	2	3	4
Skill level	○	○	○	○

* 3) Appropriate use of short response (um, yes, tell me more) to encourage parent to explore his/her concerns

	1	2	3	4
Skill level	○	○	○	○

Responding

* 4) Use open-ended questions to gather lots of information or facilitating parents to understand student's experience

	1	2	3	4
Skill level	○	○	○	○

* 5) Demonstrates appropriate use of feeling reflections including appropriate delivery and accuracy.

	1	2	3	4
Skill level	○	○	○	○

* 6) Appropriate use of paraphrases, content reflections and summaries to restate what the parent said and highlight the main points of a presentation or conversation

	1	2	3	4
Skill level	○	○	○	○

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Survey on communication competence (parental consultation)

Consultation Process

* 7) Create a supportive environment for parent to express his/her concerns (recognition, non-judgmental, empathetic response)

	1	2	3	4
Skill level	○	○	○	○

* 8) Facilitate parent to focus on student's developmental needs

	1	2	3	4
Skill level	○	○	○	○

* 9) Facilitate parent to identify effective ways to support student's development

	1	2	3	4
Skill level	○	○	○	○

* 10) Avoidance of advice-giving and inappropriate problem-solving

	1	2	3	4
Skill level	○	○	○	○

Internal reliability = .78

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Survey on communication competence (Life coaching)

1. **Questionnaire on evaluating the improvement in communication practices**

Please rate the following questions in 5-point Likert scale (to be completed by the Coach)

		Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
1.	I can express my ideas to my classmates clearly					
2.	I am confident in talking with my classmates					
3.	I can maintain good interactions with my classmates					
4.	I am willing to receive feedback from my classmates					
5.	I can understand my classmates during our talk					
6.	My classmates are willing to talk with me					

Self-rated reliability (Cronbach's alpha) = .82

2. **Observation checklist on the improvement in communication practices**

Please rate the following questions in 5-point Likert scale (to be completed by the Observer)

		Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
1.	Appropriate eye contact					
2.	Appropriate gesture					
3.	Appropriate pace of expression					
4.	Appropriate tone of expression					
5.	Appropriate interaction					

Observer-rated reliability(Cronbach's alpha)= .75

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Methodology (Data-analyses)

- Analyzing quantitative data (Parental consultation practice)
  - 1 paired-sampled *t*-tests (reflective thinking)
    - Did students using VAT have significant improvement in reflective thinking over time?
      - Calculating student-teachers' score of reflective thinking in each journal
  - 1 paired-sampled *t*-test (communication competence)
    - Did students using VAT have significant improvement in communication competence over time?
      - As measured by the mean score of each student's survey on communication competence

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Methodology (Data-analyses)

- A **comparison (non-VAT) class** of Comprehensive school guidance in Semester 1 of 17-18, which included 37 students, was used to compare how students with the support of VAT improve differently in reflective thinking and communication competence than those without VAT support

- 2 One-Between-One-Within ANOVAs
  - Did students in the experimental (VAT) classes have greater improvement in reflective thinking **and** communication competence over time?

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Methodology (Data-analyses)

- Analyzing quantitative data (Life coaching practice)
  - 1 paired-sampled *t*-test (reflective thinking)
    - Did students have improvement in reflective thinking over time?
      - Calculating student-coaches' score of reflective thinking in each journal
  - 2 paired-sampled *t*-tests (communication competence)
    - Did students have improvement in communication competence over time?
      - As measured by coach's **self-administered** survey and observer's (observer-rated) **observation checklist**

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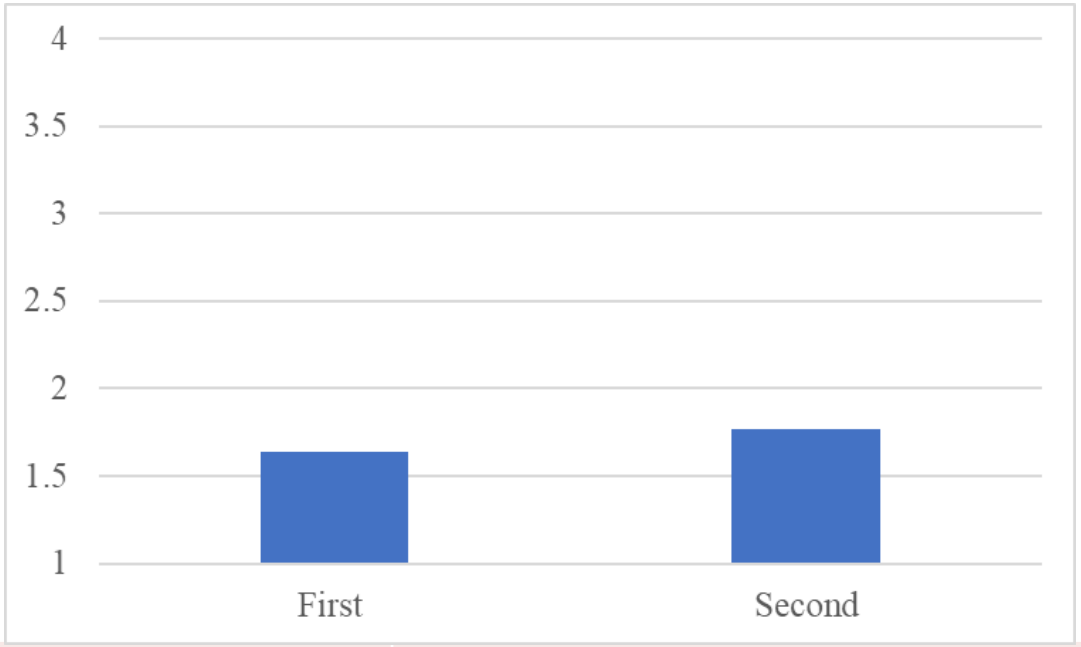
Results (consultation practice)

Graphical representation of how 3 classes of students using VAT changed their average reflective thinking scores in their parental consultation practice for COU3008 (total number = 118)



- **Interpretation**
- Students using VAT could significantly improve their reflective thinking score over time, $t(108) = 3.19$, $p < .05$, Cohen'$d = 0.33$.

	Score of reflective thinking	
	M	*SD*
First role-play	1.64	0.40
Second role-play	1.77	0.39

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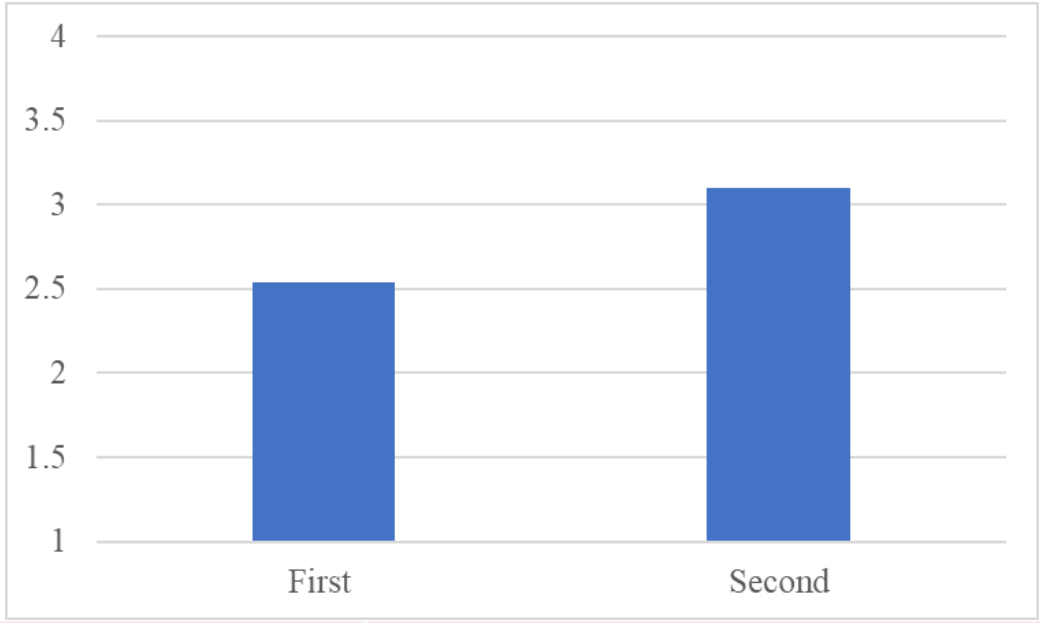
Results (consultation practice)

Graphical representation of how 3 classes of students using VAT changed their self-rated communication competence scores in their parental consultation practice for COU3008 (total number = 118)



- **Interpretation**
- Students using VAT could significantly improve their communication competence score over time, $t(107) = 12.329$, $p < .001$, Cohen'd = 1.45.

	Score of communication competence	
	M	*SD*
First role-play	2.54	0.41
Second role-play	3.10	0.36

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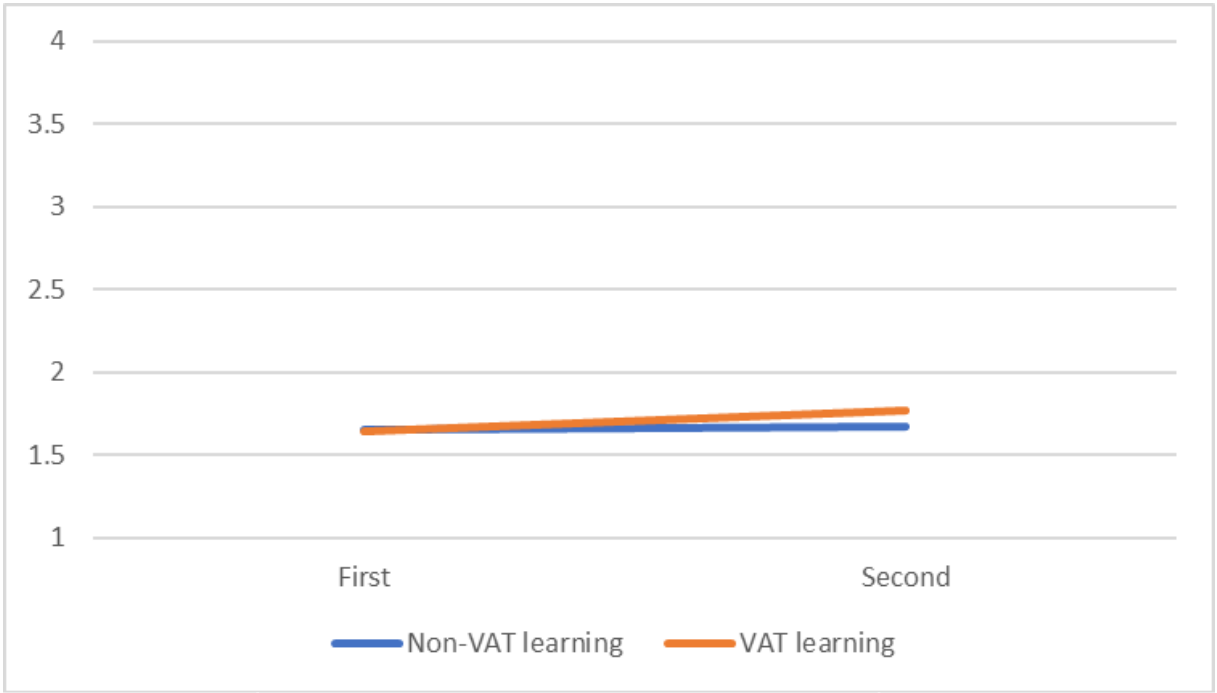
Consultation Practice
Comparison between all VAT-classes and comparison class

- **Interpretation**
- Students using VAT in peer-learning tended to increase their reflective thinking more than those without the support of VAT, but the difference was not significant $F(1, 147) = 2.005$, $p = .159 > .05$, partial eta square = .013.

Graphical representation of how 3 classes of students using VAT plus 1 class of students without VAT changed their average reflective thinking scores in their parental consultation practice for COU3008 (total number = 155)



Learning type	VAT peer-learning		Non-VAT peer-learning	
	M	*SD*	*M*	*SD*
First reflection score	1.64	0.40	1.66	0.45
Second reflection score	1.77	0.39	1.67	0.41

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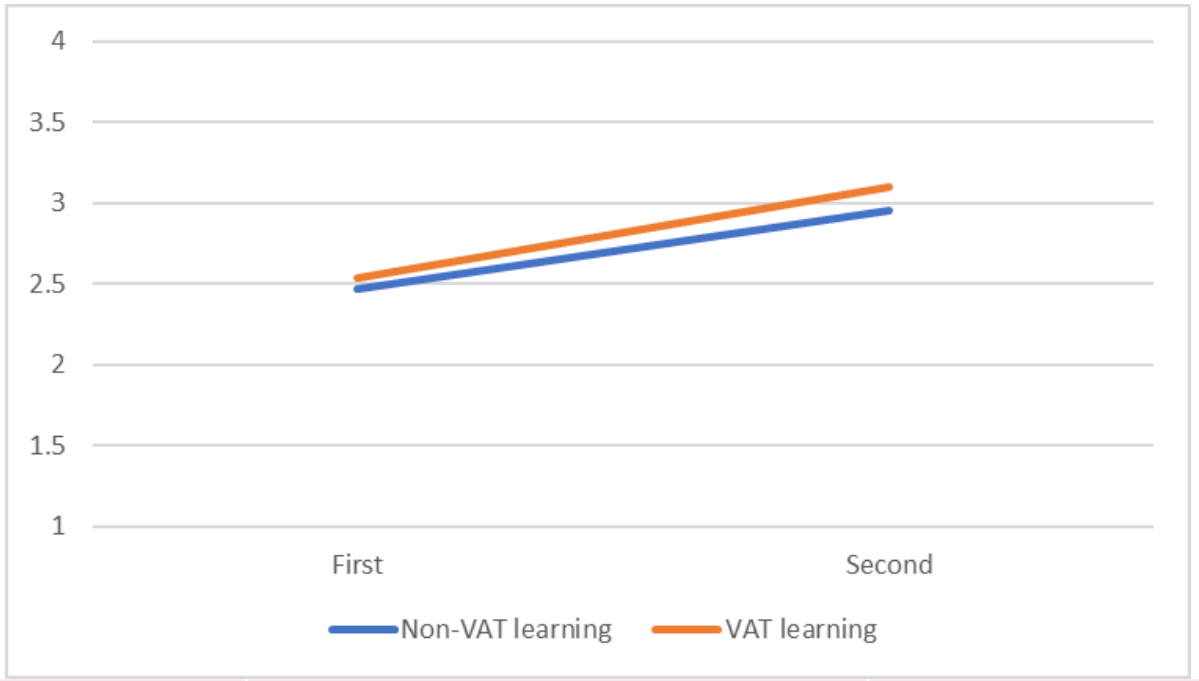
Consultation Practice
Comparison between all VAT-classes and comparison class

- **Interpretation**
- Students using VAT in peer-learning tended to increase their communication competence scores more than those without the support of VAT, but the difference was not significant $F(1, 137) = .636$, $p = .427 > .05$, partial eta square = .005.

Graphical representation of how 3 classes of students using VAT plus 1 class of students without VAT changed their communication competence scores in their parental consultation practice for COU3008 (total number = 155)



Learning type	VAT peer-learning		Non-VAT peer-learning	
	M	*SD*	*M*	*SD*
First survey	2.54	0.41	2.47	0.34
Second survey	3.10	0.37	2.96	0.42

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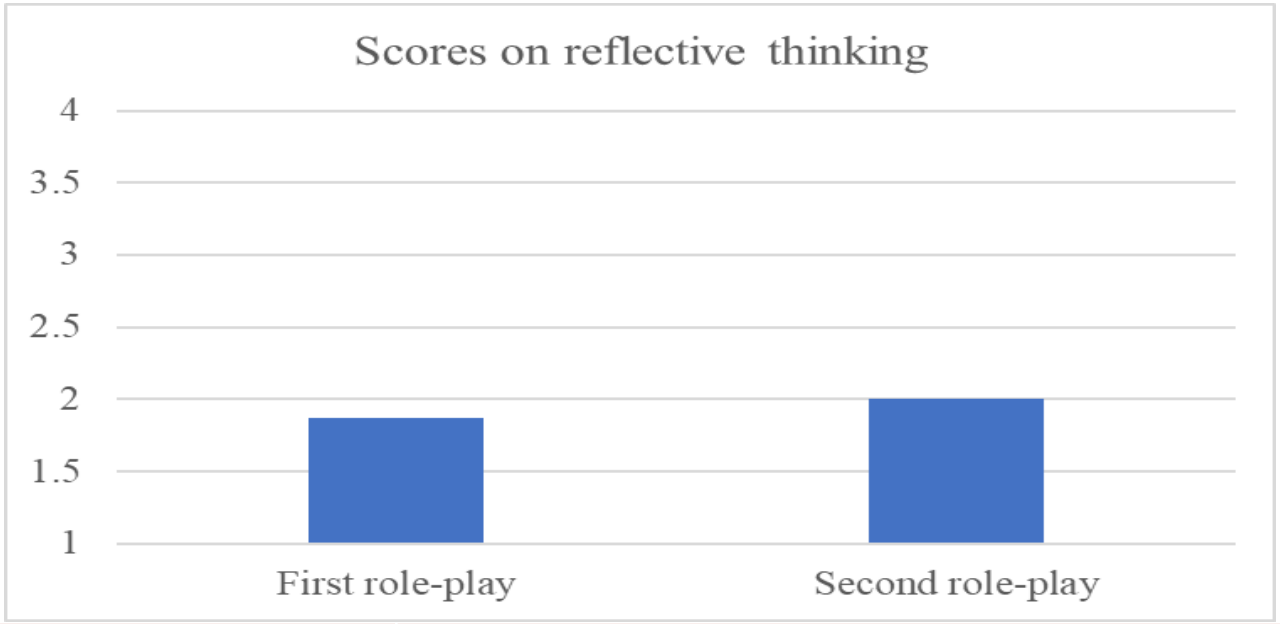
Results (life coaching)

- **Interpretation**
- Students using VAT in two classes increased their scores of reflective thinking significantly over time, $t(68) = 2.26$, $p < .05$, Cohen'd = .26.

Graphical representation of how students changed their maximum scores of reflective thinking in their coaching skills for GEF2043 (total number = 73)



	Score of reflective thinking	
	M	*SD*
First role-play	1.91	0.68
Second role-play	2.10	0.77

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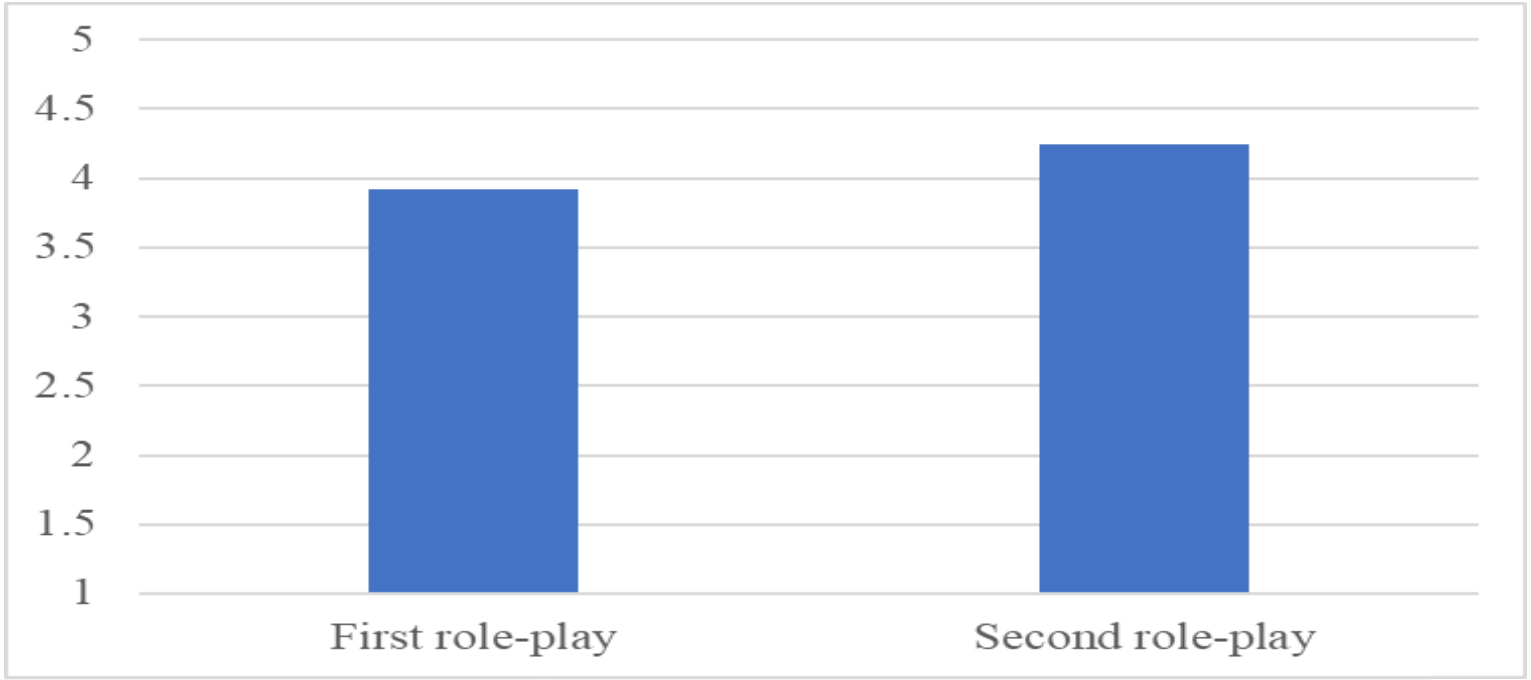
Results (life coaching)

- **Interpretation**
- Students using VAT in two classes increased their self-rated scores of communication competence significantly over time, $t(69) = 4.46$, $p < .001$, Cohen's $d = .66$.

Graphical representation of how students changed their self-rated communication competence in their coaching skills for GEF2043 (total number = 73)



	Score of communication competence	
	M	*SD*
First role-play	3.93	0.43
Second role-play	4.25	0.53

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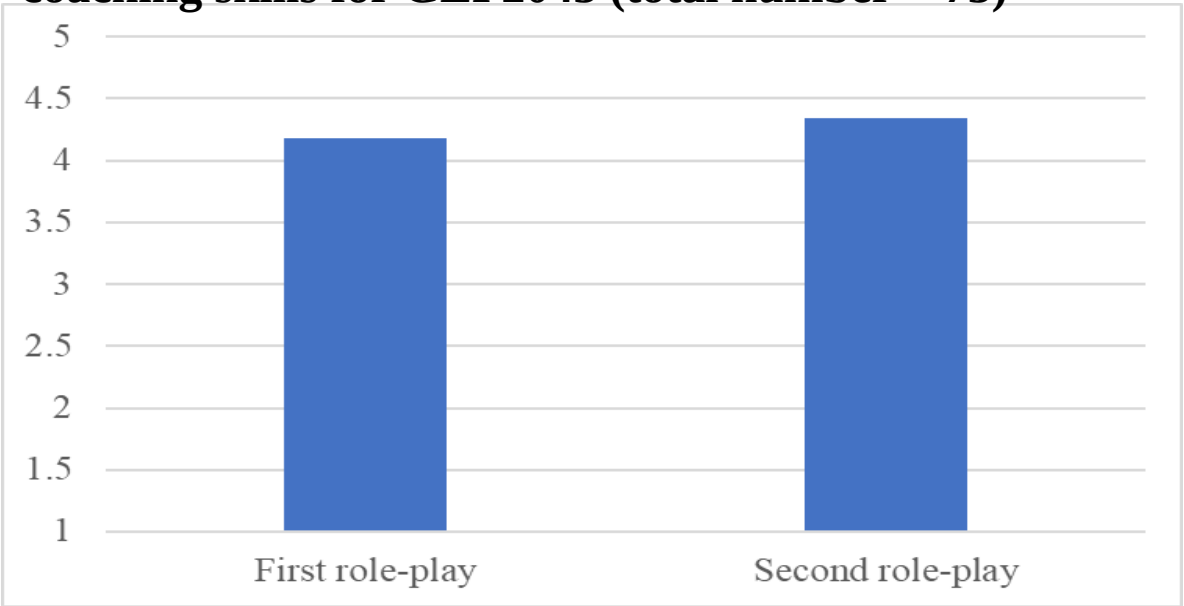
Results (life coaching)

- **Interpretation**
- Students using VAT in two classes significantly increased their observer-rated (observation checklist) scores of communication competence over time, $t(69) = 2.58$, $p < .05$, Cohen'$d = .27$.

Graphical representation of how students changed their observer-rated communication competence in their coaching skills for GEF2043 (total number = 73)



	Score of communication competence	
	M	*SD*
First role-play	4.19	0.44
Second role-play	4.34	0.65

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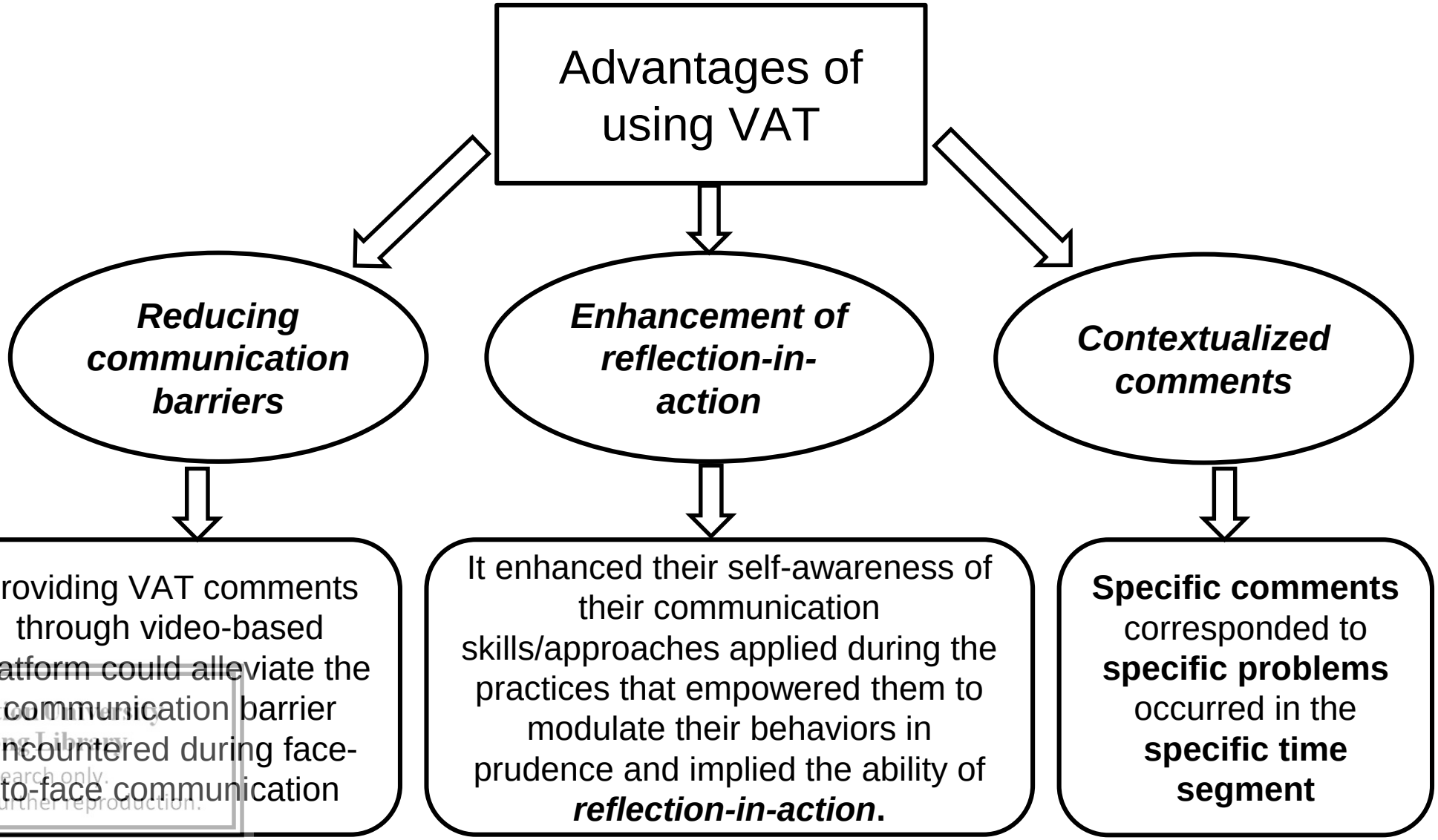
Results (focus group interviews)



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Extending VAT practice to FE course

- The practice of using VAT for learning skill practices were shared to 4 classes of students (**67 students in total**) in Sem 2 2017-18 and Sem 1 2018-19 who enrolled in the course "Professional development and field experience learning" (FEX2145)
- Students uploaded their microteaching videos to VBLC, and both students and course instructors applied VAT for giving comments on their videos

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Discussion

VAT in VBLC and communication competence

Creating a positive and supportive environment to enhance one's own communication competence

- Providing opportunities to observe how others would perform in similar scenarios that facilitated students to be open to receive comments for improvement and model others' practice. It created a positive and supportive learning environment
- Comparing ones' strengths and weaknesses with others' enabled students to learn from peers by viewing and receiving specific feedback at the online platform and boosting their confidence in communication

Sharpening communication skills by receiving multiple peer feedback

- Different perspectives and feedback provided students with various approaches to a situation or scenario which deepened their understanding in human interactions
- Feedback from a specific segment was more objective/unbiased that could facilitate students to deepen their reflection on one's skills

Improvement in communication competence might need to take more time.

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Discussion

Effects of VAT on reflective thinking

- Easily matched the feedback with specific video segments that facilitated students to review one's own skills performance
- Made annotated feedback while browsing videos to lower the possibilities of memory decay and the feedback would be more accurate. Reduced cognitive loads during video learning that would be an incentive for engaging student in the self-directed learning process (Chiu et al., 2016)
- Multiple perspectives to reflect on personal and others' communication skills through interacting with peers and by receiving diverse but specific feedback on specific segment of video
- Deepening reflective thinking through observing, analyzing and reflecting on one's own performance
- Augmented Reflection-in-action by Reflection-on-action

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Conclusion and future study

- The current study demonstrated…

  benefits of video-based platform and VAT function on promoting learning effectiveness in communication skills

- However…

  not all students could improve to higher level of reflective thinking over time (even those in VAT class)

Further study

- To investigate the students' motivation and ways of providing feedback to their peers, e.g. no. of comments given for each video/nature of peer comments
- To experiment how **lecturer's facilitation at online platform** can enhance students' learning effectiveness
- Similar study can be replicated in other skill practice courses, e.g. microteaching, teaching practice, counselling skills training courses etc.
- To examine the impact of integrating VAT with a **provision of guided framework** of reflective thinking on enhancing students' learning

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The following outcomes were attained through this TDG project

1. Developed a **teacher's guidebook** to promote reflective learning in higher education.

   Click here: https://drive.google.com/open?id=1Luz8Wo8tRrDPhJSVld8rqHrr8oLn42K2

2. Applied **blended learning mode** to combine traditional face-to-face class lectures with video-based collaborative platform which enabled students and course instructors to use Video Annotation Tool (VAT) for video analyses and making comments

3. Established **archives of skill practice videos** for future learning and teaching purpose

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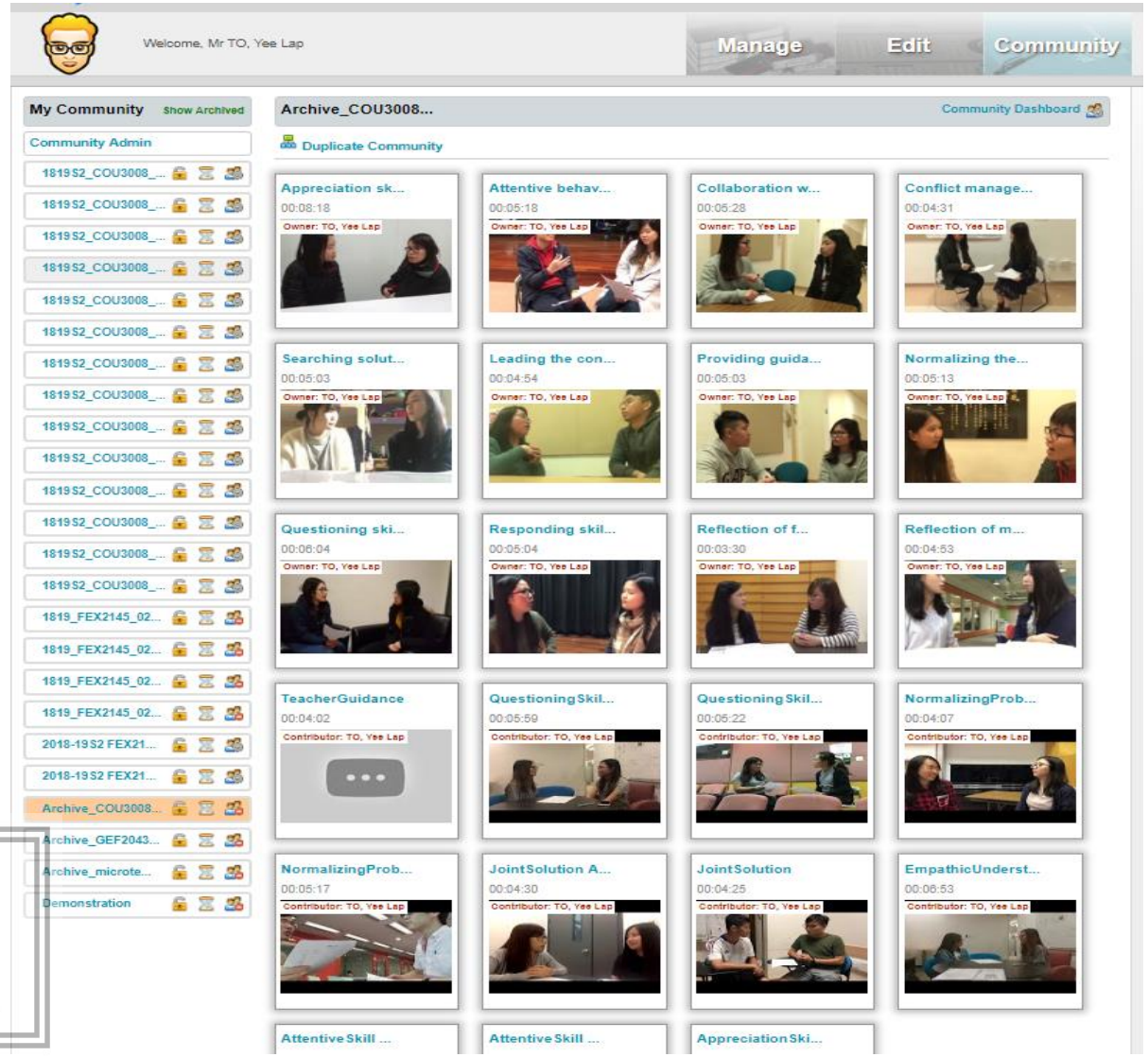
Archive of skill practice video (Consultation Skills)



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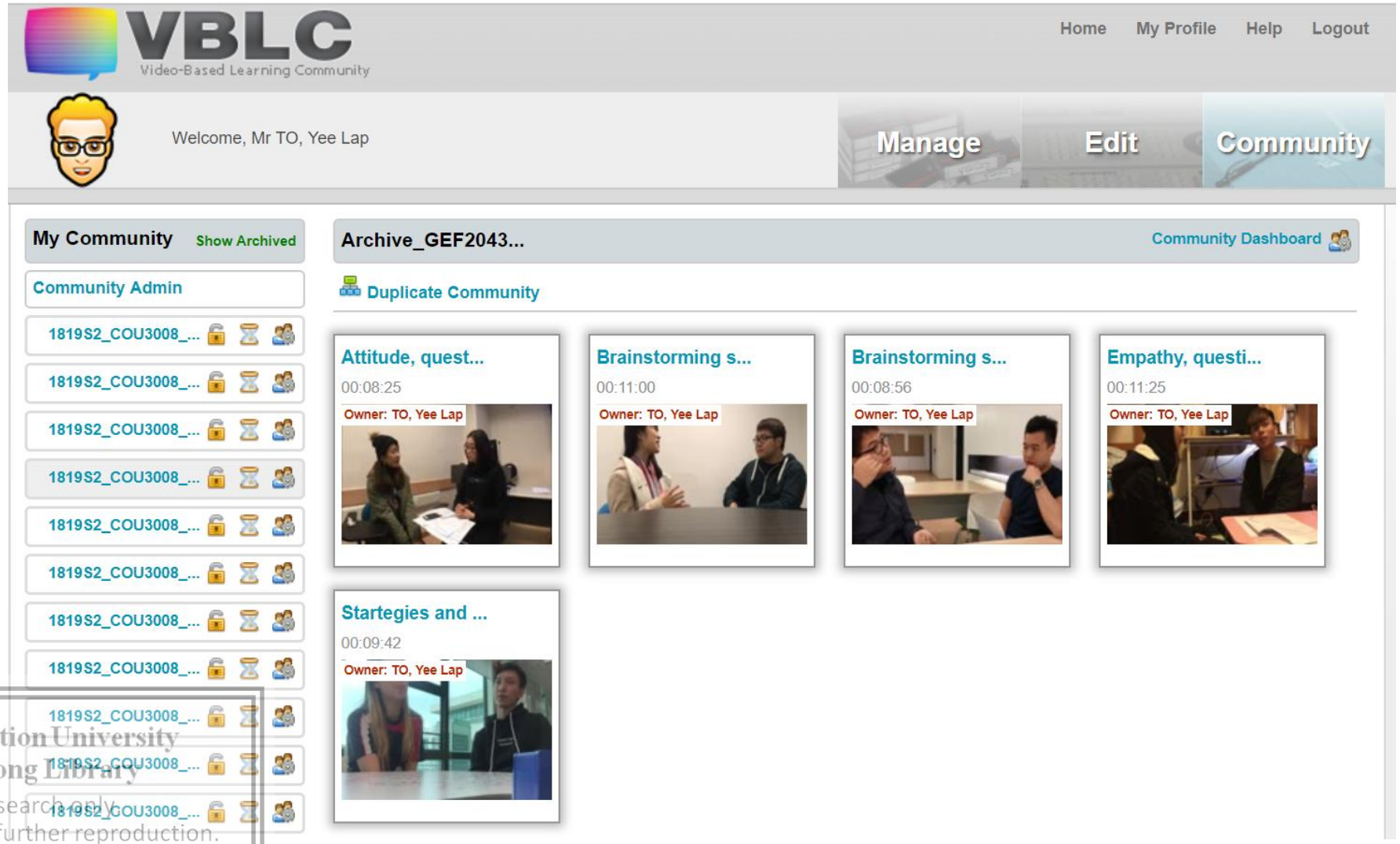
Archive of skill practice video (Coaching Skills)



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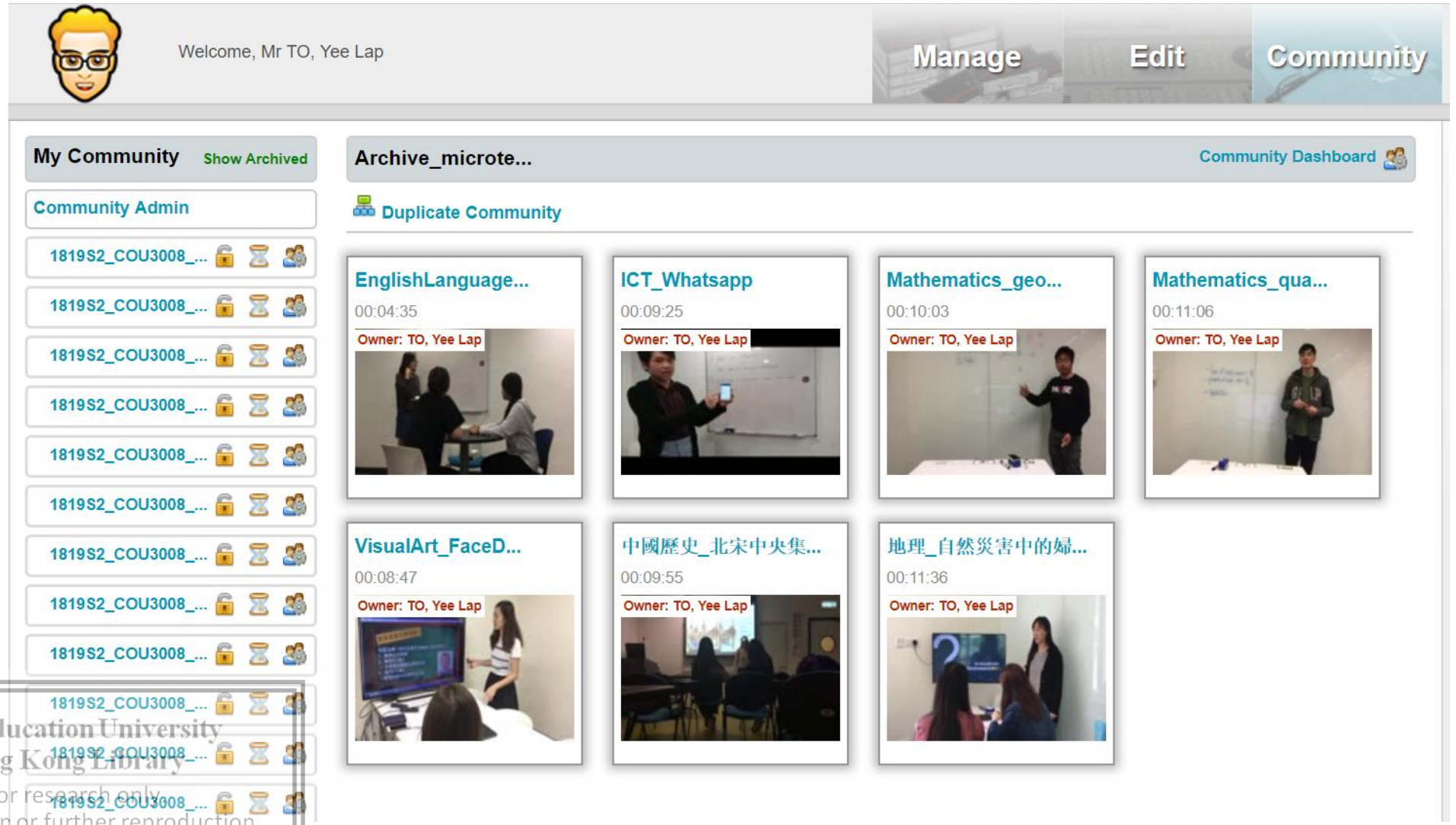
Archive of skill practice video (Microteaching)



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