

# CIS8500 - Applied Research for Information System Professionals

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**TITLE:** Design of course activities for improving behavioural and collaborative engagement for the CIS8500 Applied Research for Information System Professionals course

**PARTICIPANTS:** The CIS8500 cohort in Semester 1, 2021 consisted of 79 postgraduate students with Dr KC Chan as the Course Examiner.

**CONTEXT:** CIS8500 is a core course of the Master of Information Systems program (MISP) and has been delivered as a flipped course with extensive private reading and weekly discussions through workshops and Zoom sessions. However, student engagement in previous semesters has been minimal and most students skip the interactive sessions.

To address this issue, the Course Examiner initiated a revision of the course with significant input from the Program Director and a colleague from learning and teaching. A major task was to redesign the assessments in order to promote teamwork and provide more opportunities for lecturer-to-student and student-to-student interaction. One of the course objectives was modified to explicitly state that students will “Interact and collaborate effectively in teams”. This course objective also aligns with (and is the same as) the renewed MISP program objective 6 “Interact and collaborate effectively in teams”.

As a result, this Tech Dem project involved the introduction of Padlet, Mentimeter and VoiceThread into CIS8500 course-based activities to improve students’ online and collaborative engagement in Semester 1, 2021.

## **Aim of the initiative**

The Course Examiner selected Mentimeter and Padlet to increase student online engagement and collaboration. It was anticipated that Mentimeter features and functionality would encourage students to start engaging with the class and their lecturer, and get students interested in learning and using new online tools in their studies.

It was anticipated that Padlet features and functionality would:

- provide an easy to use and intuitive online platform for students to collaborate in groups, and develop their teamwork skills;
- meet all the needs for genuine collaboration, such as keeping records, communications, sharing files, references, drafts, project planning, and comments, for each group; and
- provide the lecturer and markers with evidence of the contribution of individual students, and as a consequence, resulting in fairer marking of individuals’ contributions to group work.

In the original project design, the Course Examiner also had planned to trial VoiceThread, as it was anticipated that VoiceThread features and functionality would:

- enable flipped learning;
- offer innovative multimedia, interaction and collaboration features that are not currently available in StudyDesk;
- seamlessly integrate with StudyDesk, offering convenience and potentially excellent user experience;
- allow students to invite participation and collaboration, thus helping students develop their teamwork skill; and
- provide analytics to help the lecturer track and monitor usage (useful for evidence-based decision making).

However, after some initial testing and trialling of VoiceThread in early S1, the Course Examiner decided to withdraw the use of VoiceThread with the CIS8500 cohort for S1.

While the original idea was to set up one VoiceThread slide for each student to promote their research problem and to seek research team partners, the Course Examiner discovered that the time and effort required to set these up was significant because VoiceThread's functionality did not allow students to set up their own VoiceThreads. Thus requiring the Course Examiner to ask students to email their slides to the lecturer, and have the lecturer set the slides up as a VoiceThread presentation for the student. Given this cohort consisted of 97 students, the amount of work involved in having the lecturer create 97 VoiceThreads could not be justified and the Course Examiner decided to use StudyDesk forums for this activity in S1.

## **Educational Technologies**

The interactive polling and quiz platform, Mentimeter, was chosen as it was easy to set up and be embedded into the CIS8500 StudyDesk. Its simple user interface was considered to be a relatively easy platform for students to engage with, and an effective platform for a lecturer in collecting real-time survey, feedback and polling data with a cohort of students.

The collaborative productivity platform, Padlet, was selected to support students undertaking online group work. The Course Examiner was interested in using Padlet as an interactive digital notice board with the functionality of collating all types of information, including text, URLs, pictures, and videos on a group 'wall'. This platform was easy to use for both the lecturer and students. The Course Examiner created a YouTube video explaining how to use Padlet and found all students were able to start using it based on these instructions.

While Voicethread was included in the original proposal of this project, the Course Examiner decided not to use it as stated in Section 2.

## **Online engagement framework**

The use of Mentimeter and Padlet in CIS8500 was designed to enhance engagement for postgraduate online students in several ways based on Redmond et al (2018).

- Cognitive engagement  
To encourage students to think critically, integrate their ideas and justify their decisions (particularly when working in teams), and to support the distribution of expertise between peers.
- Behavioural engagement  
To encourage greater online contributions from students, both individually and when working in their teams.
- Collaborative engagement  
Padlet was used to provide teams with a platform where they could share resources, identify what tasks each team member was working on, and learn with peers.

## **Project approach**

In designing course activities, the goal was to integrate the non-native applications, such as Mentimeter and Padlet into the StudyDesk as seamlessly as possible. Making the user experience within StudyDesk 'as pain free as possible', with easy navigability in locating required resources, links and activities was of high priority for the Course Examiner. The left menu item "Study schedule" on the StudyDesk was highlighted and the lecturer emphasised to students that this should be used as the single point of entry to course content and activities, i.e., it acted as the main course 'gateway' from where all the necessary information could be found.

The screenshots illustrating how Mentimeter and Padlet were integrated into StudyDesk are shown below.

USQ My courses KC Chan

# Applied Research for Information System Professionals

**Study schedule**

Your Study Schedule will provide you with an overview of CIS8500 at a glance.

Use this schedule to keep up to date with your study, and ensure you don't miss any important deadlines.

If you'd prefer a printed copy, you can print this study schedule from your browser.

Week	Module	Activities/Readings	Assessment	Assessment details
Week 1 22-26 February	Introduction to Research	<a href="#">Readings/Activities</a> <a href="#">Download Lecture Slides</a> <a href="#">Forum Discussions</a> <a href="#">Zoom Recording</a> <a href="#">Your Research Interests?</a>	Ungraded quiz (Ch. 1)	<a href="#">Assessment details</a>
Week 2 1-5 March	Selecting a Research Topic	<a href="#">Readings/Activities</a> <a href="#">Download Lecture Slides</a>	Ungraded quiz (Ch. 2)	<a href="#">Assessment details</a>

Week 8 26-30 April	Survey Research	<a href="#">Readings/Activities</a> <a href="#">Download Lecture Slides</a> <a href="#">Forum Discussions</a> <a href="#">Zoom Session</a>	Ungraded quiz (Ch. 5, 8 and 9) • ASST 2 (Research Proposal) (26 April)	<a href="#">Assessment details</a>
Week 9 3-7 May	Experiments	<a href="#">Readings/Activities</a> <a href="#">Download Lecture Slides</a> <a href="#">Forum Discussions</a> <a href="#">Zoom Session</a>	Ungraded quiz (Ch. 10, 14, and 15)	<a href="#">Assessment details</a>
Week 10 10-14 May	Case Study Research	<a href="#">Readings/Activities</a> <a href="#">Download Lecture Slides</a> <a href="#">Forum Discussions</a> <a href="#">Zoom Session</a>	Ungraded quiz (Ch. 11) <a href="#">Team Padlets ...</a>	<a href="#">Assessment details</a>

**Assignment 3 Teamwork Padlets**

Blockchain research

- Team 1a Collaboration Padlet
- Team 1b Collaboration Padlet
- Team 1c Collaboration Padlet
- Team 1d Collaboration Padlet
- Team 1e Collaboration Padlet

Social media research

- Team 2a Collaboration Padlet
- Team 2b Collaboration Padlet
- Team 2c Collaboration Padlet
- Team 2d Collaboration Padlet

Cybersecurity Research

- Team 3a Collaboration Padlet
- Team 3b Collaboration Padlet
- Team 3c Collaboration Padlet
- Team 3d Collaboration Padlet

Big data Research

- Team 4a Collaboration Padlet

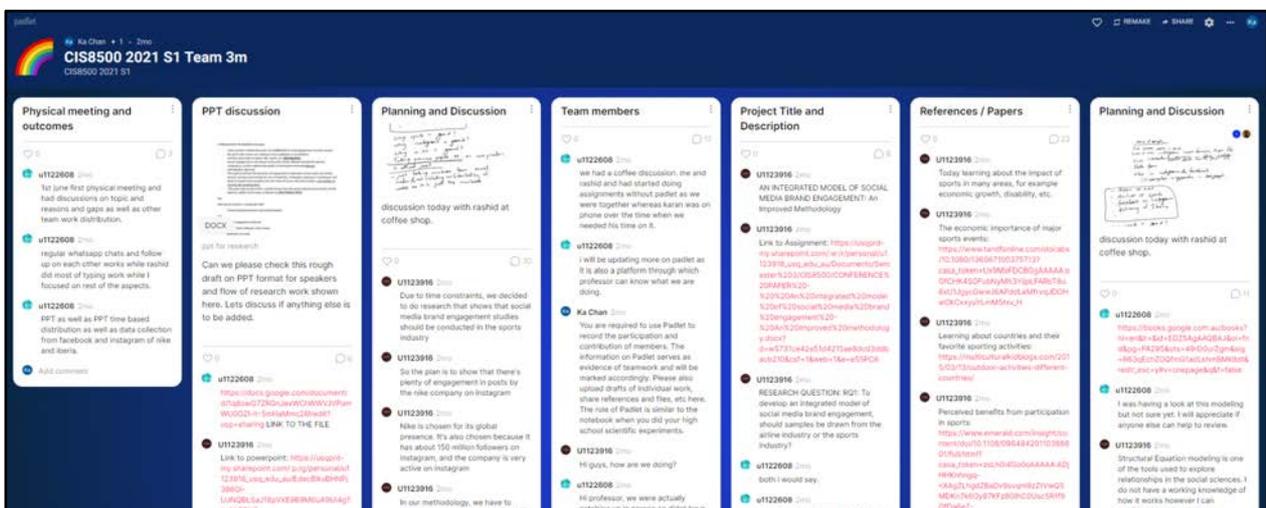
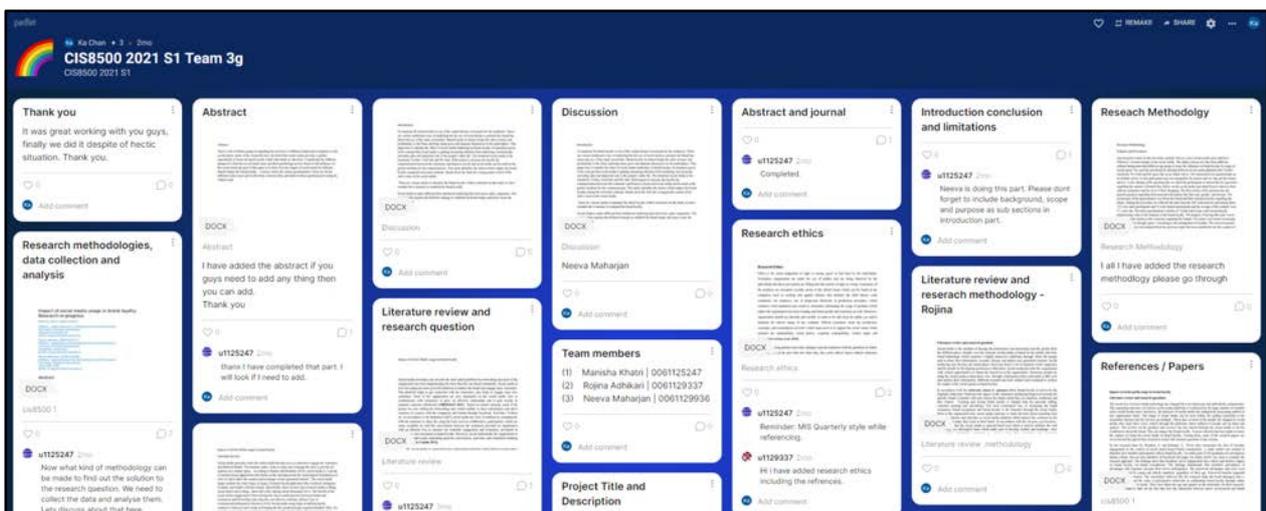
USQ MyOpinion  
**2021, Semester 2 - Mid-Semester Survey**

As Course Examiner, my approach was designed to enable greater student-to-student engagement, as well as facilitate greater student-to-lecturer engagement. Thus, the two main activities that were introduced to CIS8500 in S1 utilised the features and functionality of Mentimeter and Padlet.

Mentimeter was used at the very beginning of S1 to simply encourage students to contribute online to the cohort; it was included just as a warmup exercise.

Padlet was designed to provide students with access to an “online wall” to support group work activities for students to learn and practice teamwork and develop their soft skills and communication skills. The Padlet was a mandatory task that was marked and used as evidence for students’ genuine contribution to their team. This Padlet activity clearly addresses the course objectives in teamwork and communications, and in research ethics.

The following two screenshots illustrate the use of Padlet to support all aspects of the group task:



## Evaluation method

The evaluation was based on the course survey (MyOpinion) administered by the university. MyOpinion sends out two surveys to students for each course. The first one was conducted around week 3; and the second near the end of semester. The historical survey results of the past three semesters for CIS8500 are summarised below:

1. The original course design that has been used for many years and by previous Course Examiners. In this design there was a final examination and no team assignment (2020 Semester 1), and the overall scores were:

Mid-semester score 3.3, End-semester 3.3 (No team assignment)

2. This was the pre-TechDem course design. In this design a team assignment (writing a conference paper) was introduced to replace the final examination (2020 Semester 2), and the overall scores increased considerably:

Mid-semester 4.2, End-semester 4.4 (Replaced final exam with a team assignment)

3. This was the TechDem course design which integrated Mentimeter and Padlet (2021 Semester 1), where the overall scores remained similar to the previous semester:

Mid-semester 4.0, End-semester 4.4 (Added Mentimeter and Padlet activity)

In addition to MyOpinion results, the Course Examiner analysed the student contributions and comments made to the team Padlets, the results of which are presented as findings in Section 6A.

### **Project impact**

As a result of the S1 experience using Mentimeter and Padlet, the Course Examiner has concluded that:

- A lecturer needs to be flexible with the type of cohort that one is working with, and in this case, it was an onshore overseas cohort of students. Traditionally, these students prefer to and tend to follow orders as online learners rather than taking their own initiative and proactively engaging. Even for a cohort such as this, Padlet did provide a platform for asynchronous interaction between students within their groups and all students did contribute to their team Padlet in some way. In this instance, Padlet was an ideal tool to encourage collaborative engagement.
- Due to very little usage of Mentimeter in the Week 1 activity, it was not possible to evaluate the impact of Mentimeter on students' online engagement.
- The Mentimeter activity was not assessable, thus, there was very little interest by students to complete this task, and data were not collected regarding the user experience of Mentimeter from the student perspective.
- The Padlet activities did have an impact on students' online engagement. Because these were designed to be compulsory, compared to previous course offerings, the Course Examiner observed a significant increase in online engagement of students in the S1 2021 cohort.
- The Course Examiner found Padlet provided authentic evidence of individual students' contribution to group work and their attitude. This was very helpful to the markers of the teamwork assessment, who could mark individual student's contribution to their team in a fairer manner, compared to previous offerings where this was not possible and a marker would allocate a 'blanket mark' for all team members).
- Padlet was worth the time and effort. The Course Examiner has now introduced Padlet in other courses where teamwork is required.
- Based on the S1 experience, the Course Examiner needs to provide students with more scaffolding in terms of how to publish on the Padlet and how to group information more effectively.
- The Padlet activities did have an impact on students' collaborative engagement. In comparison to previous offerings the Course Examiner saw improvements with the S1 cohort. Resulting in students making more of an effort to contribute.
- The user experience of Padlet from the student perspective was not evaluated, but this can be done in future offerings.

- While VoiceThread could be worthy of time and effort for other purposes, for this course design it ended up not being the right fit and it was more effective and efficient to shift the activity back to the Forum. If VT could allow students to set up their own thread, then it would be a good tool to replace forums for certain purposes.
- Overall, from a course design perspective the Course Examiner was happy with how both Mentimeter and Padlet could be integrated into StudyDesk.

In terms of the impact of this project on my skill development, undertaking this TD project certainly broadened my understanding of student engagement, and it helped me think about and plan learning activities from several perspectives such as students' technology capabilities, learning styles of students from different age-groups, and the need for continuous upskilling of teaching staff.

Overall, the Padlet platform was an appropriate choice to support students' online collaboration. Padlet was effective in enabling collaborative engagement, and the increase of student participation and engagement was obvious compared to previous cohorts.

Padlet was also an effective tool in documenting evidence on individual students' contribution to group tasks. Thus, making the marking process much easier for markers and ultimately, much fairer for individual team members. This is noted in the results of the end-of-semester student survey which increased from 4.0 (for the previous offering) to 4.4 for the S1 2021 offering.

## Recommendations

In future offerings of the CIS8500 course, as Course Examiner I have decided to:

- Keep Padlet as an online collaboration tool for team work.
- Discard the use of Voicethread as a technology to facilitate/establish group formation.
- Use Mentimeter for optional tasks, particularly for icebreaking-style activities, for example, "Do you have a technical or business background?" for the Course Examiner and students to gain a better sense of the nature of the cohort's expertise and interest. Also to be used as a quick way to gather information from the cohort, for example asking a question like "Which one of the following topics interests you most: big data, IoT, or cybersecurity".
- Enhance the scaffolding for Padlet activities, for example, provide students with additional tiles or columns on Padlet to support students' generation of content under such tiles as 'journal records' and 'continuous reflection'.
- Alternatively, provide students with a list of suggested tiles or columns as a guide and allow students to use their own creativity in organising content on their Padlet 'wall', rather than provide a standard template.

For any lecturer using VoiceThread, one important practical issue is being able to get students to create their own VoiceThread, instead of having the lecturer having to create a series of VTs for each student in a cohort.

Mentimeter provides tools for surveying and polling students, gathering informal data from students about different topics, and collecting data on students' preferences, needs and concerns throughout the semester.

As a Course Examiner, I highly recommend Padlet to support group tasks and teamwork.