

ENGINEERING STUDENTS' READINESS AND PREPAREDNESS ON TEACHING MATERIALS WITH MICROSOFT TEAMS AND MICROSOFT SWAY

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Abstract: Microsoft Teams (MT) and Microsoft Sway (MS) are parts of Microsoft 365. The online distance learning (ODL) has opened for wide opportunities for educators to venture into these attractive platforms in teaching and learning (T&L). The students' preparedness can be indirectly measured via Microsoft Forms as alternative method besides recording students' attendance but also at the same time, viewing their opinions and status about T&L. It was found that most students are fully prepared with all the information supplied via MT announcements about T&L materials via MT and MS.

Keywords: Microsoft Forms, Microsoft Sway, Microsoft Teams

1. Introduction

E-content development nowadays can be so widely flexible according to the availability of friendly and easy to use platform for all students for instance via Flipgrid (Ismail & Omar, 2020), google sites (from google) (Kumbhar Kalyan, 2020) and Sharepoint (from Microsoft 365) (Decker et al., 2018). Microsoft Teams (MT) for instance has been used extensively ever since early this year due to the Covid-19 pandemic globally (Muhamad et al., 2020; Azizan, 2020; Yusof et al., 2020). MT allows formation of virtual classroom namely as Teams to replace face-to-face (f2f) activity involving discussions, group projects and assignments. In each classroom (Teams), default tabs for instance Post, Files, Class Notebook, Assignment and Grades are available facilitating teaching and learning (T&L) activities for the students with educator. Student collaborations are realized with virtual teamwork cooperation in Class Notebook's dedicated section namely Collaboration Space, allowing new pages to be assigned from virtual team discussion. The term 'Teams' as defined by Cambridge Dictionary (2020), to act together to achieve something if it is considered as a verb. While, if it is a noun, it means a number of people who act together as a group, either in a sport or in order to achieve something.

Azizan (2020) has proposed few steps in teaching and learning (T&L) implementation for engineering academic materials. In a way, these steps are suitable to all kinds of academic T&L purposes. Overall, the use of Microsoft 365 (M365) applications (apps.), for instance, OneDrive (OD), Microsoft Streams (MS), Microsoft Forms (MF) (Cross et al., 2020) besides MT are very helpful in ensuring Online Distance Learning (ODL) process.

Microsoft Sway (MS) is another attractive application by M365 which unbelievably allows learning explorations together with the students (Wihartanti & Wibawa, 2017). MT and MS have the terms 'Teams' and 'Sway', respectively. The term 'Sway' is originated by a German word as written as *swajen (swājen)* meaning to be blown to and fro or from a Dutch word namely *zwaaien (zwaaien)* meaning to walk in a tottering way (Oxford Learner's Dictionary, 2020). If it is considered as a noun, it simply means, the act of swaying relates to swaying movement or is related to dominating power or influence. This relates closely to the T&L materials being published online dominating exploration of knowledge influence on the new generation's interests.

2. Methodology

Microsoft Teams (MT) is one of the Microsoft products via Microsoft 365 which is currently being subscribed by Universiti Teknologi MARA (UiTM). One simply needs UiTM's email account as offered by UiTM for login to MT. The teaching and learning for academic materials using MT were well designed following the steps as shown as in Figure 1 as reported by Azizan (2020) with an additional MS intervention for asynchronous and synchronous teachings. Table 1 shows the lists of

groups of students registered for the course code of CHE545 with the course name of Mass Transfer, used as an example of students involved in MT and MS in the first half of the semester Oct2020 to Feb2021 academic calendar year.

Table 1: Group of students for the first half* of the Oct2020 – Feb2021 UiTM Academic calendar semester

Groups	Course Code/Name	Size
EH2203A	CHE545/ Mass Transfer	33
EH2203B	CHE545/ Mass Transfer	32

Notes: *first 8 weeks of academic teaching

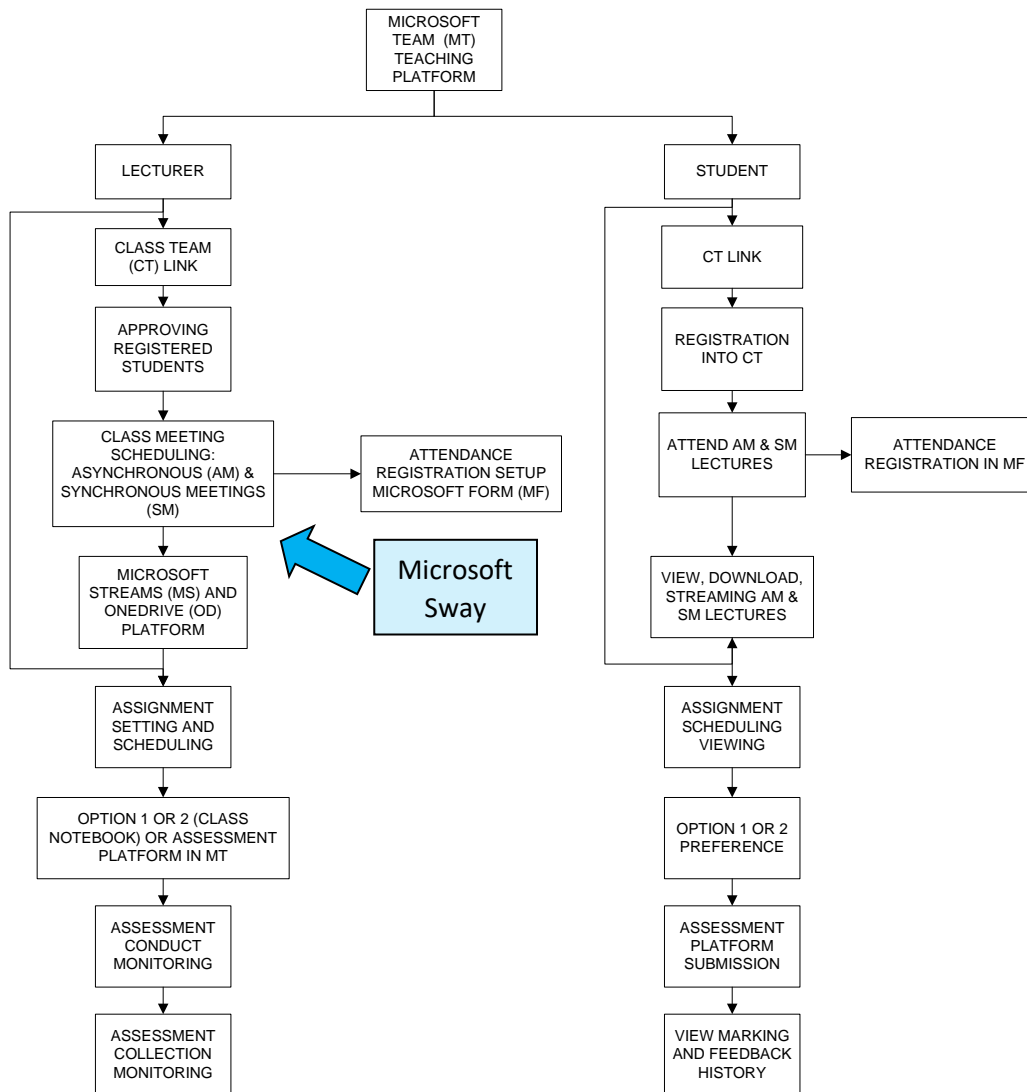


Figure 1: Microsoft Teams (MT) teaching and learning (T&L) platform and steps for T&L including assessments (Azizan, 2020), with an embedded activity using Microsoft Sway (MS)

In Figure 1, for an efficient T&L during ODL, a synchronous meeting in MT was conducted. Besides that, asynchronous meetings were also very helpful to convey adequate information or teaching materials to the students. It is stated that with other applications like Microsoft Streams and OneDrive, allowing students to relisten to the recorded video meetings during the synchronous meeting and also to refer to T&L materials saved in the cloud for continuous referencing. To evaluate the T&L outcome, assignments were assigned via MT and grades were released to the students' viewing after either online or offline evaluations via MT. It is shown that another M365 application which is Microsoft Sway (MS)

is highly attractive to convey more information to the students in a more modern-like presentation or storytelling for instance like a website or with a newsletter look.

In MS, newsletter was created with specific titles relevant to specific chapter or sections in the course outline for the course code/name. The specific chapters or sections were named based on an organized lesson plan disseminated to the students from the beginning of the semester (first day of class). In each chapter, headings (title), texts and media were arranged accordingly. Images and videos were also uploaded in MS and the newsletter was disseminated to the students prior to the date of the asynchronous meeting.

During each synchronous or asynchronous meeting, attendances were recorded and there were many ways to ensure the recording was systematically collected. One of the ways was to use Microsoft Forms (MF), whereby the students received organized instructions via MT meeting calls to fill in entrance and exit attendance forms containing survey-like questions regarding their preparations and post learning outcomes for every learning activities (meeting calls including asynchronous meeting with lecture videos or notes). Other method was by referring to the attendance list which was automatically recorded by MT for every synchronous meeting which needed to be downloaded prior to ending the meeting. Another attractive method was by using Insights tab which was also available in MT in which in this case, a monitoring of student's activities every time they were in MT could be referred to.

3. Results and Discussion

The preparedness of students about the class teaching materials including the readiness about Microsoft Teams (MT), Microsoft Sway (MS) can be viewed as in Figure 2 (left). The responses were based on one of the entrance survey questions conducted in Microsoft Forms (MF) relating to the readiness before class started. The students were asked to register their presence by answering survey question via MF as they entered the virtual meeting class.

3.1 Entrance and exit survey in Microsoft Sway

The entrance survey questions asked are as reported in this article for instance 'What will you learn today? Do you know?' According to the results recorded via MF, it can be concluded that majority of the responses were positively indicating that they read the announcements prior to the meeting appointment in MT, with 180 responses answered 'YES'. 9 (nine: 4.3%) 'NO' responses indicated that these students may have not read the announcements in advance, readying oneself to the teaching materials beforehand. Out of the responses, some of them gave inputs on their expectations on the teaching mode or materials for instance about MT, MS or even with the use of the word 'Microsoft' which were mentioned, with 7 (3.3%), 13 (6.2%) and 1 (0.5%) responses, respectively.

The perceptions on MS by an anonymous student via MF are as recorded as: *"I have reviewed the week 1 video using Sway. I love it, it feels like madam tell us a story about mass transfer and we can easily find the subtopic that we want to learn/watch."*

Another interesting survey question relating to the internet readiness was depicted by this one of the exit-survey questions for instance 'Is your internet connection OK today?' The results depicted in Figure 2 (right) show 79 (52%) responses have good internet connection all along the class period. Unfortunately, 69 (45.4%) responses reported highly probable inconsistent internet coverage during the class period. Finally, only 4 (2.6%) responses reported on very bad internet connections. There are many ways to help students who are having problems with the internet connection, if the virtual classes are still ongoing in the future under Online Distant Learning (ODL) mode, where these students can take the opportunity to apply for better internet coverage or place themselves at locations that offer better internet coverage, for instance special university college accommodation where consistent internet coverage is offered within the university compound.

3.2 Examples of Microsoft Sway newsletter and Microsoft Teams announcement

There were lectures notes and lectures videos published like a newsletter as in Microsoft Sway (MS) format. In MS, lectures of mass transfer were written in such a way that the interest of the readers were meant to be maintained to finish reading them until the end of the newsletter as imagined by the

creator of MS in Microsoft. The newsletters which were arranged systematically based on chapters are shown as in Figure 3, with compilations of chapter titles. In the newsletter, the slideshow of lecture notes from Microsoft Power Points was also inserted. All students could simply export all the slides (in image format) as one pdf form for reading reference.

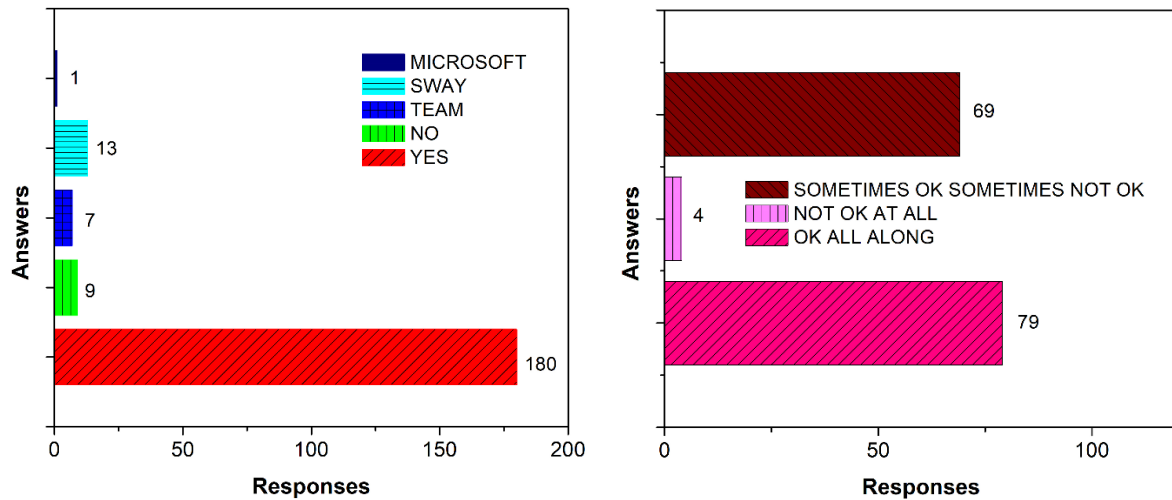


Figure 2: Entrance and exit survey question responses. Left is about T&L readiness prior to class with and additional input about Microsoft. Right is about the internet readiness throughout the first 8 weeks T&L

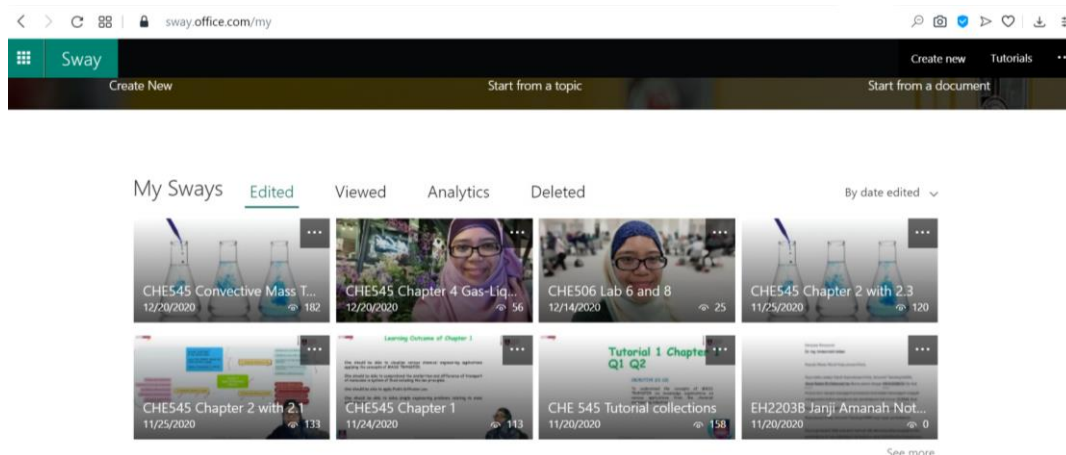


Figure 3: Example of compilations of the Microsoft Sway newsletters on CHE545 Mass Transfer lecture notes and lecture videos in the Oct20-Feb21 semester of the academic year calendar

Figure 4 shows an example of MS newsletter details for chapter 2 topic entitled Convective Mass Transfer. A lecture video could be streamed via MS anytime by the students. The link was shared to the registered students as one of the T&L materials.

The link to MS newsletter was announced in advance in Microsoft Teams page for the respective virtual class platform as shown in Figure 5. The agenda of the synchronous meetings was clearly stated prior to the meeting. A call for synchronous meeting was also published in MT, ensuring all the registered students work on the T&L materials appropriately and have the understanding to attend the synchronous meeting on time.

4. Conclusion

The students taking the mass transfer course were basically enthusiastic with the use of MT and MS via Microsoft 365, as depicted by the responses via MF for one of the few questions released for

them on entrance and exit survey questions. Their preparedness and readiness in using these platforms are shown by the majorities of the responses indicating such enthusiasms and keen to learn prior to class. In the future, the use of MT and MS in an online platform can be visioned to be consistently used by educators due to the one-stop platform for all semester-academic activities. UFuture which is offered by UiTM is comparably as great and friendly platform for an online learning mode, in condition, with an upgrade to internal recording of meetings/synchronous lecture being embedded within the UFuture itself as readily offered via MT (having MS).

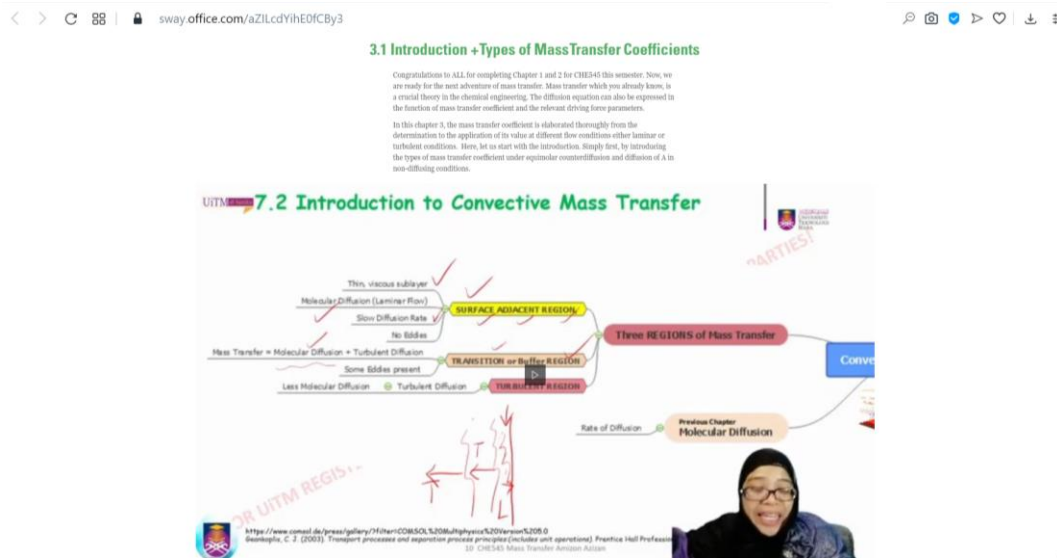


Figure 4: One instance on the Microsoft Sway newsletters about Chapter 3 (Convective Mass Transfer Coefficients) for the CHE545 Mass Transfer lecture notes and lecture videos as published in the Oct20-Jan21 semester

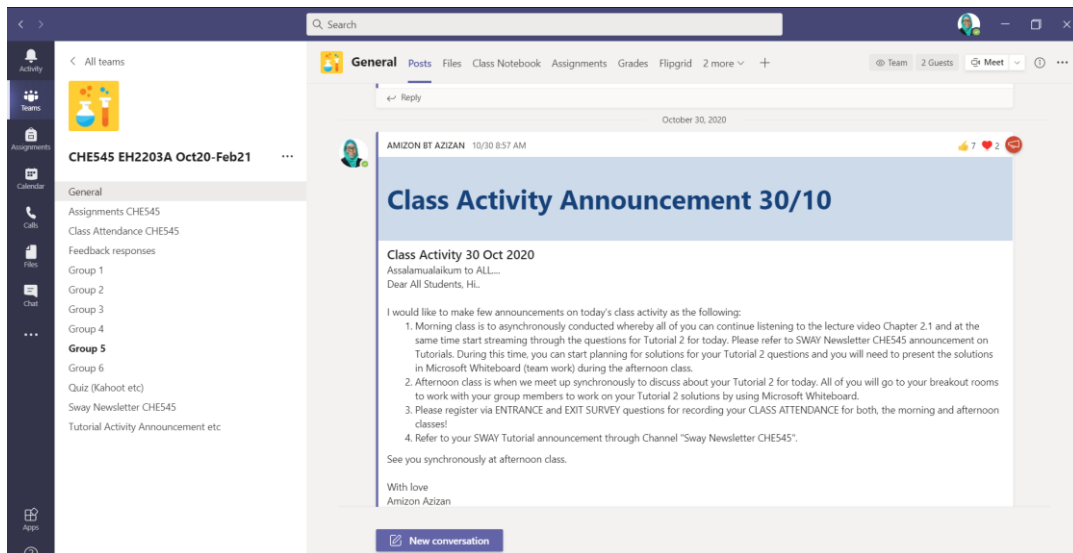


Figure 5: Example of the Microsoft Team announcement and calls for meeting

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