The University aims to increase e-learning as one of its strategic aims, among which the current call is for pedagogical research projects to tackle barriers and difficulties in e-learning development. This study aims to investigate both teacher e-learning readiness and students' use of e-learning and impact on learning behaviour. There are two parts to this study:

Part 1: Teachers Study (Faculty of Medicine)

To study teacher's utilization of e-learning by an online survey of all teachers in the Faculty of Medicine. The primary survey instrument was modified for use in tertiary settings from a validated survey already available to assess teaching e-learning readiness.

The survey was sent out to 405 teachers, and 28 responded (6.9%). 7 different teaching roles/titles and 9 medical departments were represented. Use of e-learning in teaching amongst participants was high at 60.7%. The overall mean score of teachers was 3.35 ± 0.55 ($p < 0.001$). Teachers indicated dissatisfaction toward institutional and technological support.

Part 2: Students Study (Faculty of Medicine)

The study aims to explore students' effective use of technology for e-learning purposes. The study design is a mixed method study by using a survey, focus groups, and an observational study. The survey consists of student demographics, e-learning readiness, and internet addiction tool (IAT). Focus groups were conducted to explore the internet use, learning behaviour and the barriers to e-learning. Also, a self-reported daily diary for one week of internet usage was used for the observational study.

3100 online surveys were sent out to 6 different programmes via a pre-existing mailing list. The response rate was 5.1% and all six programme and six years of study were represented. With regards to students' attitudes, the overall of the mean score was 3.36 ± 0.42 ($p < 0.001$). Students agree that e-learning can increase their flexibility in learning (4.11 ± 0.74) and believe that it can be a supplement to the traditional classroom teaching (4.03 ± 0.69).

47 diaries were distributed to year 6 medical students on June 2018. 33 diaries were received (70.2%). The preferred device for e-learning is still a PC; however, the tablet is also widely used. Mobile usage for e-learning remains low.

The focus groups identified various barriers for students to engage with e-learning. Some themes identified through thematic analysis were 'self-management,' 'pedagogical limitations,' 'low prioritization,' 'poor interface designs,' 'low-quality e-resources,' 'poor institutional implementations,' and 'technologically behind.'

Conclusion

Our results revealed that the readiness score between teachers and students are relatively similar, albeit teachers scored slightly lower in a few domains – 'Institutional', 'Management', 'Technological', and 'Resource Support'. Both teachers and students agree institutional factors and manageability of e-learning materials are still not optimal. Such

sentiments are supported by the focus groups where 'poor institutional implementations,' 'pedagogical limitations,' 'poor interface designs' were mentioned as examples of barriers to e-learning. Students may further be exasperated by the long hours required for e-learning on top of their general offline education.