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**A COMPARATIVE STUDY OF THE SATISFACTION LEVEL
BETWEEN ONLINE AND FACE TO FACE TEACHING
LEARNING METHOD DURING FIRST CLINICAL YEAR OF
MBBS AND ITS ASSOCIATION WITH ACADEMIC
PERFORMANCE**

UNIVERSITY OF CYBERJAYA

ABSTRACT

A comparative study of the satisfaction level between online and face to face teaching learning method during first clinical year of MBBS and its association with academic performance.

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Background : As COVID-19 shook the world, medical students who were supposed to undergo training in hospitals and meeting real patients were forced to adapt with online learning. **Objectives** : This study is done to investigate the academic performance and student satisfaction levels in open distance learning (ODL) as compared to face-to-face learning. **Methods** : This was a comparative cross-sectional (N=48), quantitative, online-based study that involved two batches of medical students from University of Cyberjaya who were in their first clinical rotation year. The first batch of students were the students who completed the first clinical year training in the normal manner in year 2019 (FTF batch) while the second group surveyed were students who completed their first clinical rotation year in 2021 (ODL batch) during the COVID pandemic where a majority of teaching was done online. Their academic result was gained from the university and the students' satisfaction level was assessed with an online questionnaire. The data was analysed using JASP. **Results** : ODL batch who had done their first clinical year online gained higher results in majority of both their clinical skills and clinical knowledge exams compared to FTF batch who underwent traditional classes. Based on satisfaction levels, online learning was perceived as satisfactory however, face-to-face learning is still preferred especially in developing their clinical skills. As for the correlation, the ODL batch was less satisfied and their results suffered in their first semester but then recovered in the next semester. Meanwhile, FTF batch was generally satisfied with the interactions in face-to-face learning but their academic performance was weaker than ODL batch. **Conclusion** : Online learning was perceived as satisfactory by the students however, face-to-face learning had been proven to be preferred.

Keywords : Open Distance Learning (ODL), Face to Face Teaching Learning Method, Clinical Years, Teaching and Learning, Medical Students, Satisfaction

INTRODUCTION

The COVID pandemic affected education in all settings, Open Distance Learning (ODL) became a necessity and an alternative to engage students and continue access to education during this pandemic. Educators were required to be creative in their teaching and assessment methods for content delivery while students needed to adapt to a different teaching and learning style.

ODL comprises online classes held on various large-scale video calling platforms, where educators and students are able to communicate with one another via video, sharing multiple forms of media and sending messages, all of which are done in real-time. For the ODL batch of this study, teaching sessions entailed educators sharing their lecture slides on screen while lecturing, asking students questions and allowing students to ask their own questions. Presentation sessions were mainly led by students themselves with lecturers acting as a mediator and guide. During Bedside Teaching (BST) sessions, students would present medical cases found online and discuss it with the lecturer and the rest of the students.

In a study done to compare the effectiveness of online learning versus blended learning on the clinical skills of nursing students, it was proven that blended learning was more effective in terms of imparting knowledge of clinical supervision. The blended learning group had scored much higher in knowledge than the online learning group (McCutcheon, O'Halloran et al. 2018).

A research done on the review of predictive factors of students' success in and satisfaction with online learning found that students can perform just as well online as in face-to-face courses regardless of learning style. It was also found out that online courses that were instructor facilitated and interactive increased performance, satisfaction and allowed for more collaboration among students (Kauffman 2015).

The aim of this study was to explore the overall satisfaction of medical students experiencing face to face (FTF) learning and ODL learning as well as its association with their academic performance.

MATERIALS AND METHODS

This is a comparative cross-sectional study that was conducted from the 24th of September 2021 to the 14th of January 2022. All MBBS students in University of Cyberjaya that were either in their first clinical year (Year 3) in the year 2018/2019 and 2020/2021 that fulfilled the inclusion criteria were invited to participate. These two batches were chosen as the former received teaching via the standard curriculum (F2F) while the latter experienced their first clinical year via open distance learning (ODL) with little to no hands-on experience in a hospital or clinic. Batch 2018/2019 is referred as FTF batch whereas batch 2020/2021 is referred as ODL batch.

Universal sampling of all third year medical students from FTF batch and ODL batch that completed their first and second year of medical training in University of Cyberjaya without the need for repeating any year of study were invited to participate in the study. Questionnaires were sent to the participants via Whatsapp and email. The exclusion criteria were participants from FTF batch who had to repeat their Year 3 or participants who did not return the questionnaires after a third invitation for participation into the study.

A total of 61 students from FTF batch and 59 students from ODL batch were eligible to participate in the study. However, 28 number of questionnaires was returned from FTF batch and 42 number returned from ODL batch. After excluding participants that were not eligible for the study, the data gathered from 48 students in FTF batch and 48 students in ODL batch was analyzed.

A total of 61 students from FTF batch and 59 students from ODL batch were eligible to participate and completed the questionnaire from the study. 28 students from FTF batch and 42 students from ODL batch did not participate in the study. After excluding participants that were not eligible for the study, the data gathered from 48 students in FTF batch and 48 students in ODL batch was analyzed.

The data for the participants' satisfaction levels was collected via an online questionnaire that assessed participants' satisfaction levels on the structure of their courses, interactions with lecturers and other students as well as their perception of their own clinical skills and knowledge during their respective first year clinical (Year 3) experiences. This questionnaire was designed by the researchers based on and adapted from numerous studies on student satisfaction levels toward their courses, mainly in the field of healthcare. The participants' satisfaction levels were measured using a 4 point likert scale with 'very unsatisfied' being a score of 1, 'unsatisfied' a score of 2, 'satisfied' a score of 3, and 'very satisfied' would be a score of 4. The validity of the questionnaire was then measured using the Cronbach-Alpha scoring and a pilot test was done with five year 4 MBBS (2021/2022) students from University of Cyberjaya.

For data on academic performance, the exam grades of the students were provided by the exam unit of University of Cyberjaya. The researchers were blinded and the students'

details and their respective exam grades were merged by a third party. The students' CGPA during their second year was obtained from the exam unit to be used as a baseline for their academic performance as well as a control for this research. To evaluate their clinical skills, End-of-Posting (EOP) exam scores for each posting were used. For clinical knowledge evaluation, their End-of-Semester (EOS) exam scores were acquired. The GPA for semester 5 and 6 during Year 3 were used to get a more complete picture of their clinical knowledge and clinical skills combined. Mann Whitney U-Test and Correlation are used to analyse the collected data.

ETHICAL REFERENCE

This research was approved by the Research Ethics Committee, Faculty of Medicine, University of Cyberjaya, CRERC Reference Number UOC/CRERC/ER/321.

RESULTS

To compare the academic performance of the students who had open distance learning and students who had traditional face-to-face learning.

| Academic Results | | FTF batch (n = 48) | ODL batch (n = 48) | p-value |
|---|--------------------------|-----------------------|-----------------------|------------------|
| | | Mean (SD) | Mean (SD) | |
| Year 2 CGPA | | 3.12 (0.39) | 3.04 (0.42) | 0.295 |
| Year 2 Professional exam marks | | 60.29 (7.65) | 57.60 (8.64) | 0.077 |
| Year 3 GPA semester 5 | | 2.78 (0.30) | 3.02 (0.30) | <0.001 |
| Year 3 GPA semester 6 | | 2.94 (0.28) | 3.06 (0.28) | 0.065 |
| Year 3 CGPA | | 3.02 (0.31) | 3.04 (0.32) | 0.889 |
| End of Posting (Clinical skills) | Paediatrics | 21.69 (3.10) | 22.99 (2.10) | 0.043 |
| | Surgery | 21.55 (2.26) | 20.44 (1.54) | 0.041 |
| | Internal medicine | 21.91 (3.10) | 21.49 (2.37) | 0.439 |
| | Obstetrics & Gynaecology | 16.46 (2.91) | 17.53 (1.98) | 0.003 |
| End of Semester (Clinical knowledge) | Paediatrics | 26.27 (3.32) | 26.42 (3.40) | 0.939 |
| | Surgery | 25.04 (3.99) | 30.24 (3.53) | <0.001 |
| | Internal medicine | 21.98 (2.36) | 23.13 (2.60) | 0.039 |
| | Obstetrics & Gynaecology | 23.22 (3.10) | 25.32 (4.95) | 0.001 |

*CGPA = Cumulative Grade Point Average, GPA = Grade Point Average

Table 1

The baseline academic performance from both groups were similar. Batch 18/19 achieved an average CGPA of 3.12 and Professional Exam marks of 60.29, whereas Batch 20/21 had a CGPA of 3.04 and Professional Exam marks of 57.60.

Based on the results, the data that are statistically significant are the GPA for semester 5 ($p < 0.001$) with ODL batch having a higher mean score (3.02) as compared to FTF batch (2.78), clinical skills in Paediatrics ($p = 0.043$) where ODL batch also had a higher mean score (22.99) than FTF batch (21.69), clinical skills in Surgery ($p = 0.041$) which ODL batch scored a lower mean (20.44) than FTF batch (21.55), clinical skills in Obstetrics & Gynaecology ($p = 0.003$) where ODL batch had a higher mean score (17.53) than FTF batch (16.46), clinical knowledge of Surgery ($p < 0.001$) which ODL batch scored significantly higher (30.24) as compared to FTF batch (25.04), clinical knowledge of Internal Medicine ($p = 0.039$) in which ODL batch scored a higher mean (23.13) than FTF batch (21.98) and clinical knowledge of Obstetrics & Gynaecology ($p = 0.001$) where ODL batch had a higher mean score (25.32) than FTF batch (23.22). Except for clinical skills in Surgery, ODL batch had scored higher than FTF batch in each of the categories mentioned above.

The relationship between satisfaction levels and method of learning of the students

| Satisfaction levels | FTF batch Satisfied % (n) | ODL batch Satisfied % (n) | FTF batch (n = 48) Mean (SD) | ODL batch (n = 48) Mean (SD) | p-value |
|------------------------|-------------------------------------|---------------------------|---------------------------------|---------------------------------|---------|
| | Course Structure (Section B) | | | | |
| Course schedule | 97.92(47) | 83.33(40) | 3.27 (0.57) | 2.79 (0.50) | <0.001 |
| Bedside Teaching (BST) | 93.75(45) | 52.08(25) | 3.45 (0.68) | 2.50 (0.62) | <0.001 |
| Usage of facilities | 88.50(42) | 89.58(41) | 3.18 (0.70) | 2.98 (0.44) | 0.038 |
| End of Semester (EOS) | 97.92(47) | 79.17(38) | 3.38 (0.53) | 2.88 (0.61) | <0.001 |

| | | | | | |
|--|-------------------|------------------|---------------------|--------------------|------------------|
| End of Posting (EOP) | 95.83(46) | 81.25(39) | 3.38 (0.57) | 2.83 (0.60) | <0.001 |
| Learning Materials | 89.58(43) | 87.49(42) | 3.21 (0.80) | 3.00 (0.58) | 0.037 |
| Teaching Based Learning (TBL) | 89.58(43) | 85.42(41) | 3.250 (0.64) | 2.90 (0.52) | 0.003 |
| Interaction (Section C) | | | | | |
| Student-lecturer interaction | 97.92(47) | 87.50(42) | 3.58 (0.61) | 3.02 (0.53) | <0.001 |
| Student-student interaction | 100.00(48) | 85.42(41) | 3.71 (0.46) | 3.04 (0.58) | <0.001 |
| Class participation | 100.00(48) | 91.67(44) | 3.60 (0.49) | 3.13 (0.53) | <0.001 |
| Guidance for history taking | 95.83(46) | 83.34(40) | 3.60 (0.64) | 3.00 (0.58) | <0.001 |
| Guidance for clinical examination | 95.83(46) | 72.92(35) | 3.60 (0.64) | 2.81 (0.64) | <0.001 |
| Perception of clinical skills and knowledge (Section D) | | | | | |
| Fulfil the learning objectives | 93.75(45) | 60.42(29) | 3.31 (0.66) | 2.63 (0.73) | <0.001 |
| Application of basic science knowledge | 93.75(45) | 83.33(40) | 3.41 (0.68) | 2.90 (0.69) | <0.001 |

| | | | | | |
|--|-------------------|------------------|--------------------|--------------------|------------------|
| Taking a comprehensive history | 100.00(48) | 87.50(42) | 3.58 (0.50) | 2.96 (0.62) | <0.001 |
| Perform a systematic physical examination | 97.92(37) | 64.58(31) | 3.52 (0.55) | 2.67 (0.83) | <0.001 |
| Deduction of a proper provisional and differential diagnosis | 100.00(48) | 89.58(43) | 3.50 (0.51) | 3.04 (0.50) | <0.001 |

Table 2

All the data obtained has been proven to be statistically significant with $p < 0.05$.
 The FTF batch were more satisfied compared to the ODL batch in all aspects of teaching and learning activities.

The association of satisfaction levels and their academic performance.

| | Course structure <i>p-val</i> | Interaction <i>p-val</i> | Perception of clinical skills and knowledge <i>p-val</i> |
|-----------------------|--|-------------------------------------|---|
| FTF batch | | | |
| Year 3 GPA semester 5 | 0.230 | 0.014 | 0.385 |
| Year 3 GPA semester 6 | 0.105 | 0.055 | 0.627 |
| Year 3 CGPA | 0.597 | 0.025 | 0.924 |

| | | | |
|--------------------------------------|--------------|--------------|--------------|
| End of Posting (Clinical skills) | 0.670 | 0.179 | 0.890 |
| End of Semester (Clinical knowledge) | 0.067 | 0.027 | 0.374 |
| ODL batch | | | |
| Year 3 GPA semester 5 | 0.639 | 0.351 | 0.015 |
| Year 3 GPA semester 6 | 0.127 | 0.312 | 0.170 |
| Year 3 CGPA | 0.315 | 0.217 | 0.073 |
| End of Posting (Clinical skills) | 0.738 | 0.675 | 0.725 |
| End of Semester (Clinical knowledge) | 0.954 | 0.173 | 0.182 |

*CGPA = Cumulative Grade Point Average, GPA = Grade Point Average; **Highlighted numbers represents statistically significant

Table 3

In the FTF batch there is a statistically significant correlation between satisfaction levels on Interaction and Year 3 GPA Semester 5 as well as Interaction and End of Semester (Clinical knowledge). As for the ODL batch, there were statistically insignificant correlations in most areas except for satisfaction levels on Perception of Clinical Skills and Knowledge and Year 3 GPA Semester 5. The data obtained also shows that FTF batch had positive correlation in regards most aspects, except for satisfaction levels on Perception of Skills and Knowledge and End of Posting (Clinical Skills) compared to the ODL batch. The latter had negative correlation in most areas, except for satisfaction levels on Course Structure and Year 3 GPA semester 5, Course Structure and End of Posting (Clinical Skills) as well as Interaction and End of Posting (Clinical Skills).

DISCUSSION

Our study comparing two different batches of Year 3 medical students in University of Cyberjaya showed that the students that experienced ODL during the COVID pandemic had satisfactory academic performance based on the Year 3 GPA marks. Previous studies have shown a mixed effect on online education and exam performance. A study done by Clark, 2021 showed that open distance learning had a positive effect on students' academic results (Clark et. al 2021). However, other studies have shown opposite findings, where open distance learning negatively affects students' academic performance (Francis et. al, 2021; Xu and Jaggar, 2013). Based on our results, the FTF and ODL batches had similar baseline academic performance before they started their first clinical year. The ODL batch showed a comparable end of Year 3 GPA while there was evidence of better end of posting (EOP) results that differed between disciplines. These numbers are too small to comment.

If seen in regards to their clinical skills, only Internal Medicine was not significantly different from both batches, this could be due to the fact that the most of the diseases covered in Internal medicine have already been discussed during pre-clinical years classes in University of Cyberjaya. According to our findings, FTF batch did better than their juniors in the Surgery examination. While ODL batch which underwent open distance learning performed better than their seniors as their results were statistically significant in 2 subjects which were Paediatrics and O & G. This may be due to the fact that the online clinical skills exam could be potentially easier as compared to the face-to-face exam as it does not involve performing actual Physical Examinations to actual patients. In addition to that, performing a physical examination on real patients is more challenging. This requires students to perform the examination, elicit relevant clinical signs to put them together and reach a diagnosis. In contrast, an online clinical examination may only include interpretation of signs via clinical pictures or videos. This finding is in keeping with previous studies that the majority of the students that participate in online exams perceive these exams to be much easier than those tested in the traditional environment (Hannay and Newvine, 2006).

When viewed in terms of clinical knowledge, it was found that the batch that went through open distance learning performed better in Surgery, Internal Medicine and O&G. These results were unexpected as the online students performed better despite not being able to go for their hospital attachments. In our study other correlations such as availability of lecturers, degree of class participation and ability to integrate knowledge and practical skills in real life patients were not able to be assessed or be taken into consideration. We postulate that this could alter the expected results of some of the end of posting exams. This view is also supported by Theoret and Ming in 2020 where concerns were raised regarding clinical competency when medical students who were able to complete clinical rotations with inadequate patient interactions still received full credit for their rotations to finish their degree. Baticulon et. al in 2020 also support the importance of medical students acquiring essential clinical skills through interactions with patients.

The ODL batch were satisfied with the course structure as proven in the results. In a study by Cho et. al in 2021, learning satisfaction was higher for face-to-face learning

compared to online distance learning with the learning objectives, which is one of the aspects of course structure, being the highest contributor. This is inconsistent with our findings as both batches in our study were satisfied with their course structures. An explanation for the satisfaction of ODL batch with the course structure of online learning may be that it allows students to personalise their learning experience with their preferred class content, learning activities, assessment of learning goals, pace of learning, and learning settings (Christensen, 2015).

Based on our research, ODL batch were not as satisfied in terms of interactions compared to FTF batch. This shows that online learning was perceived as satisfactory by the students however, face-to-face learning had been proven to be preferred. This is consistent with a study done on students' perceptions toward online learning and face-to-face learning courses has shown that in face-to-face classes, there is a higher degree of interaction and satisfaction than in online courses (Bali & Liu, 2018). Our findings are also consistent with a study that shows that medical students and faculty members were in favour of face-to-face and blended modes of learning. However, they perceived online mode of learning as an acceptable adaptation in theoretical teaching and in some clinically oriented teaching such as history taking and clinical case discussions (Atwa et. al 2022). These findings align with a study where interactions between the instructor and learners were found to be strongly related to student satisfaction and that interactions among classmates contribute to higher levels of satisfaction with a course (Swan, 2001).

In our study, ODL batch were also not as satisfied with the perception of clinical knowledge and skills compared to FTF batch. Our findings are consistent with a study that shows that most students agree that they can understand their learning objective through online learning. However, they also argue that the face-to-face method was more effective than online learning, especially in complicated clinical skills such as subjective refractive examination (Syauqie M., 2021). Moreover, a study showed that online distance learning students are unsatisfied when it comes to clinical and practical sessions compared to face to face learning, which is expected as physical examination skills cannot be learned without physical contact between students and real or simulated patients (Atwa et. al 2022). According to a study, students felt that online learning had a positive impact on their learning of clinical skills and was comparable to other face to face learning forms of clinical skills teaching. Students who displayed deep learning traits when using online learning, performed better in clinical skills. Undergraduate medical students value the use of online learning in clinical skills education, however they vary in their utilisation of such learning environments (Gormley G. J. et. al, 2009). This goes to show that face to face learning is still superior to online learning when it comes to inspiring a student's confidence in their clinical knowledge and skills.

A study on the effects of open distance learning on students' performance during COVID-19 done in Jordan found that the overall trend of academic performance among students having online classes remained as consistent as if they were in regular class settings (Yaseen et. al 2021). The results from our research were consistent with this finding where

Batch 20/21 had statistically insignificant correlations for most aspects except for satisfaction levels on 'Perception on Clinical Knowledge and Skills' and Year 3 GPA Semester 5. This shows that ODL batch were only less satisfied when Movement Control Order (MCO) had just been implied by the Malaysian government, where no mass gatherings were allowed, all teaching institutions were closed and teaching-learning activities were shifted to being fully online for the first time in Malaysia. This sudden transition for medical students and educators in the beginning, a research found that a total of 42.8% and 17.6% of students in Malaysia were not ready to learn online when MCO was officially promulgated (Harun et al. 2021). However, ODL batch semester 6 results and satisfaction levels were not affected. This may have been the result of the students adapting to open distance learning as well as improvement in terms of preparedness and effectiveness of open distance learning as the need and duration of online learning was prolonged. This finding is consistent with a study performed by Wang et. al in 2018 where open distance learning readiness has been shown to positively correlate with college students' academic performance in the open distance learning environment.

Overall findings on the association between the satisfaction levels on learning method and academic performance found more statistically significant correlations in Batch 18/19 who had fully face-to-face teaching-learning method during their first clinical year, particularly for 'Interactions'. The results show that FTF batch were generally satisfied with the interactions in face-to-face learning but their academic performance was weaker than ODL batch. Such findings do not correlate with a study performed by Kemp & Grieve in 2014 where interaction of face-to-face classes is said to encourage learning, in a way that could not be achieved via the solitary completion of the activities. The results are also not consistent with another study that shows that social interaction promotes learning engagement which has been identified as positively affecting achievement of learning outcomes (Bali & Liu, 2018). The association of satisfaction levels and academic performance in FTF batch were generally expected to be better than ODL batch as they were assumed to have better experiences in terms of course structure, interactions and perception on clinical skills and knowledge, but it had been proven otherwise in our study. Batch 18/19 had more statistically significant findings compared to ODL batch, who experienced their first clinical year fully online. A study found that the level of engagement during e-learning is higher than during face-to-face learning (Gherhes et al. 2021). This shows that although face-to-face learning is generally preferred by many over open distance learning, it still does not prove that face-to-face learning ensures better satisfaction levels in terms of interactions and academic performance.

CONCLUSION

Based on the results of our research, it was found that the students who underwent open distance learning (ODL batch) had generally performed better academically in terms of clinical knowledge as well as clinical skills than the students who had traditional face-to-face learning (FTF batch) despite having lower satisfaction levels in most aspects. This proves that, although open distance learning is perceived as satisfactory for the most part, traditional face-to-face learning is still proven to be preferred by the students.

LIMITATIONS AND RECOMMENDATIONS

As for the limitations of this research, the small sample size of 48 students from two separate batches from University of Cyberjaya is not representative of all Malaysian medical students. Moreover, there were multiple factors not taken into account such as race, income group, living location, internet stability and devices used. Although this study offers some answers in comparing the satisfaction levels and academic performance between students who had open distance learning and traditional face-to-face learning, there is still room for improvements. Future studies that include a larger sample number of Malaysian medical students while taking the factors mentioned above into consideration will improve the generalizability and reliability of their findings.

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APPENDIX

Questionnaire

The following questionnaire consists of 22 questions and four sections – Section A (Sociodemographic factors), Section B (Course structure), Section C (Interaction) and Section D (Perception of clinical knowledge and skills). Please select the option that applies to you the most.

Section A : Sociodemographic factors

| | |
|------------------------------|--|
| Year of study | <input type="checkbox"/> Year 3 <input type="checkbox"/> Year 5 <input type="checkbox"/> None of the above |
| Gender | <input type="checkbox"/> Male <input type="checkbox"/> Female |
| Race | <input type="checkbox"/> Malay <input type="checkbox"/> Chinese <input type="checkbox"/> Indian <input type="checkbox"/> Others |
| Internet access (for Year 3) | <input type="checkbox"/> Able to participate in classes, discussions and meetings <input type="checkbox"/> Unable to participate in classes, discussions and meetings |
| Age | Please enter (year) : ____ |

Section B: Course structure

Please select the option that best describes your satisfaction level throughout Year 3. Use the following rating system when answering:

- 1 - Very unsatisfied
- 2 - Unsatisfied
- 3 - Satisfied
- 4 - Very satisfied

| No | Statement | Satisfaction Level | | | |
|----|--|--------------------|---|---|---|
| | | 1 | 2 | 3 | 4 |
| 1. | Batch 18/19: I was satisfied with the course schedule, curriculum and overall planning of the course. | | | | |

| | | | | | |
|----|--|--|--|--|--|
| | Batch 20/21: I was satisfied with the course schedule, curriculum and overall planning of the course with the adaptations in teaching-learning provided during the ODL. | | | | |
| 2. | Batch 18/19: I was satisfied with the delivery of bedside teaching (face-to-face). | | | | |
| | Batch 20/21: I was satisfied with the adaptation of the bedside teaching delivery (ODL). | | | | |
| 3. | Batch 18/19: I was satisfied with the usage of facilities. (hospital, resource centre). | | | | |
| | Batch 20/21: I was satisfied with the usage of facilities (Microsoft Teams for ODL). | | | | |
| 4. | I was satisfied with the way the End-of-Semester (EOS) exam was conducted. | | | | |
| 5. | I was satisfied with the way the End-of-Posting (EOP) exam was conducted. | | | | |
| 6. | I was satisfied with the learning materials provided. (lecture notes). | | | | |
| 7. | I was satisfied with the TBL sessions. | | | | |

Section C: Interaction

Please select the option that best describes your satisfaction level throughout Year 3. Use the following rating system when answering:

- 1 - Strongly disagree
- 2 - Somewhat disagree
- 3 - Somewhat agree
- 4 - Strongly agree

| No | Statement | Satisfaction level | | | |
|----|-----------|--------------------|---|---|---|
| | | 1 | 2 | 3 | 4 |
| | | | | | |

| | | | | | |
|----|--|--|--|--|--|
| 1. | Batch 18/19: I was able to interact effectively with lecturers during classes (BST, TBL and small group discussions). | | | | |
| | Batch 20/21: I was able to interact effectively with lecturers during online classes (BST, TBL and small group discussions). | | | | |
| 2. | Batch 18/19: I was able to interact effectively with other students during classes (BST, TBL and small group discussions). | | | | |
| | Batch 20/21: I was able to interact effectively with other students during online classes (BST, TBL and small group discussions). | | | | |
| 3. | Batch 18/19: I was able to actively participate during classes (BST, TBL and small group discussions). | | | | |
| | Batch 20/21: I was able to actively participate during online classes (BST, TBL and small group discussions). | | | | |
| 4. | Batch 18/19: I was satisfied with the guidance given during BST to improve my history taking skills. | | | | |
| | Batch 20/21: I was satisfied with the guidance given during the adapted BST to improve my history taking skills. | | | | |
| 5. | Batch 18/19: I was satisfied with the guidance given during BST to improve my clinical examination skills. | | | | |
| | Batch 20/21: | | | | |

| | | | | | |
|--|---|--|--|--|--|
| | I was satisfied with the guidance given during the adapted BST to improve my clinical examination skills. | | | | |
|--|---|--|--|--|--|

Section D: Perception of clinical knowledge and skills

Please select the option that best describes your satisfaction level upon the completion of Year 3. Use the following rating system when answering:

- 1 - Strongly disagree
- 2 - Somewhat disagree
- 3 - Somewhat agree
- 4 - Strongly agree

| No | Statement (At the end of Year 3) | Satisfaction levels | | | |
|----|---|---------------------|---|---|---|
| | | 1 | 2 | 3 | 4 |
| 1. | I was able to fulfil the learning objectives set in the curriculum according to each posting's logbook. | | | | |
| 2. | I was able to apply my basic science knowledge during bedside teaching (BST). | | | | |
| | I was able to apply my basic science knowledge during the adapted bedside teaching (BST). | | | | |
| 3. | I was able to take a comprehensive history from a patient. | | | | |
| 4. | I was able to perform a systematic physical examination on a patient. | | | | |
| 5. | I was able to deduce a proper provisional and differential diagnosis based on history taking and physical findings. | | | | |