Face-to-Face or Online teaching? 
Interdisciplinary research project experience

Li Han, Bedru Hussen Mohammed, Dana Vackova, Janice Mary Johnston

School of Public Health, LKS Faculty of Medicine, The University of Hong Kong
Context

The interdisciplinary Health Research Project (HRP) requires students from MBBS, Nursing and BPHM to complete research on humans and write a scientific report.

In previous years, the lectures, tutorials and statistical workshops were face-to-face, but last school year the course was delivered online due to COVID-19 and social unrest.

Our objective was to compare these two modes of teaching.
Intervention

A quantitative study analysed

1) students’ self-perceived difficulties

2) and satisfaction on achieving learning objectives


Data of both years were compared using SPSS software.
Observations

1) Students’ experience/ self- perceived difficulties

Compared with face-to-face mode, students felt much easier in most areas of the projects when course was delivered online. These areas included level of difficulty on:

• deciding on topic (P=0.001),
• designing approach to study design (P<0.001);
• writing protocol (P<0.001);
• assessing ethical risks of the proposed study (P=0.02);
• preparing questionnaire (P<0.001);
• submitting IRB (P<0.001);

• Only field work was similar (P=0.75).

• data analysis(P<0.001),
• writing final report (P<0.001)
• poster presentation (P=0.03);
• meeting the deadline for IRB (P<0.001);
• meeting the deadline for report (P<0.001);
• meeting the deadline for poster presentation (P<0.001).

Overall, students felt the workload was significantly decreased (P<0.001).
Figure 1

Level of difficulty groups experienced during the FIRST semester HRP activities
1:Very easy - 5:Very difficult

<table>
<thead>
<tr>
<th>Activity</th>
<th>2018/2019</th>
<th>2019/2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decide on topic</td>
<td>3.3</td>
<td>3.1</td>
</tr>
<tr>
<td>Design approaches to research study design</td>
<td>3.3</td>
<td>3.1</td>
</tr>
<tr>
<td>Protocol writing</td>
<td>3.6</td>
<td>3.3</td>
</tr>
<tr>
<td>Assess ethical risks of the proposed study</td>
<td>3.1</td>
<td>2.9</td>
</tr>
<tr>
<td>Prepare questionnaire</td>
<td>3.3</td>
<td>3</td>
</tr>
<tr>
<td>Submit IRB application &amp; required documents</td>
<td>3.7</td>
<td>3.5</td>
</tr>
</tbody>
</table>

P-values: P=0.001, P<0.001, P<0.001, P=0.02, P<0.001, P<0.001
Figure 2

Level of difficulty groups experienced during the SECOND semester HRP activities

1: Very easy - 5: Very difficult

Field work (Data collection)  | 3.9 (2018/2019)  | 3.5 (2019/2020)
Multidisciplinary team management - Efficient communication within group members | 3.7 (2018/2019)  | 3.2 (2019/2020)
2) Students’ satisfaction

Compared with face-to-face mode, when the course was delivered online, students’ felt HRP was very helpful in
- acquiring professional skills (P=0.03);
- developing their researching skills (P<0.001);
- developing skills working in group (P=0.001);
- acquiring skills in data input and analysis (P<0.001).

Overall, students’ satisfaction was significantly increased (P<0.001).
Figure 3

Level of agreement to statements about all HRP activities

1: Strongly disagree - 5: Strongly agree

- Found the Whole Class Session (online) helpful in acquiring professional skills needed for HRP: P=0.03
- I have a clear idea of where I'm going and what's expected of me in the HRP: P<0.001
- The HRP developed my research skills: P<0.001
- The HRP helped me to develop my ability to work in a group, helping me to achieve the HRP learning outcomes: P=0.001
- The HRP tutor was effective in helping in acquiring skills needed for data input and analysis: P=0.46
- I found the statistic workshops it is easy to know the standard of work expected: P<0.001
- The workload was too heavy: P=0.003
- Overall I am satisfied with the quality of the HRP: P<0.001

2018/2019 (Blue) vs. 2019/2020 (Green)
Conclusions

Both student’s self-perceived difficulties and satisfaction were significantly improved during online teaching compared with face-to-face teaching.