# HOW DO STUDENTS USE THEIR MOBILE DEVICES IN PROBLEM-BASED LEARNING?

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## BACKGROUND

### Problem-based learning (PBL)

- Student-centered pedagogy adopted by three faculties in The University of Hong Kong for more than 10 years
- Small group discussion
- Use prior knowledge and use mobile devices to access Internet information, to solve the problem

## OBJECTIVES

- Identify students' patterns of mobile device usage
- Provide recommendations on effective use of the devices

## PARTICIPANTS

### Participants

**Bachelor of Medicine and Bachelor of Surgery (MBBS) programme:**
First and second year students from the 5-year and 6-year programme (n = 630)

**Bachelor of Dental Surgery (BDS):**
First to fourth year students from the 5-year and 6-year programme (n = 321)

**Bachelor of Sciences in Speech and Hearing Sciences (BSC):**
Second to fourth year students from the 4-year and 5-year programme (n = 134)

## Methods

**Questionnaire:**
Emails sent twice to invite students to voluntarily complete the anonymous online questionnaire.

Definition of mobile devices explained at the very beginning of the questionnaire

### Data collected:

- Demographic information
- How students use their mobile devices
- Why some students do not use mobile devices during PBL
- Students' degree of agreement to certain guidelines regarding the use of mobile devices in PBL

## RESULTS

**How many students use mobile devices in PBL:**
- 346 students completed the survey
- 99%: own one or more mobile devices
- 98%: have used mobile devices in PBL
- 96%: have used mobile devices for learning purposes
- 35%: have used mobile devices for non-learning purposes
- Learning activities: information search & synthesis, and facilitation of discussion
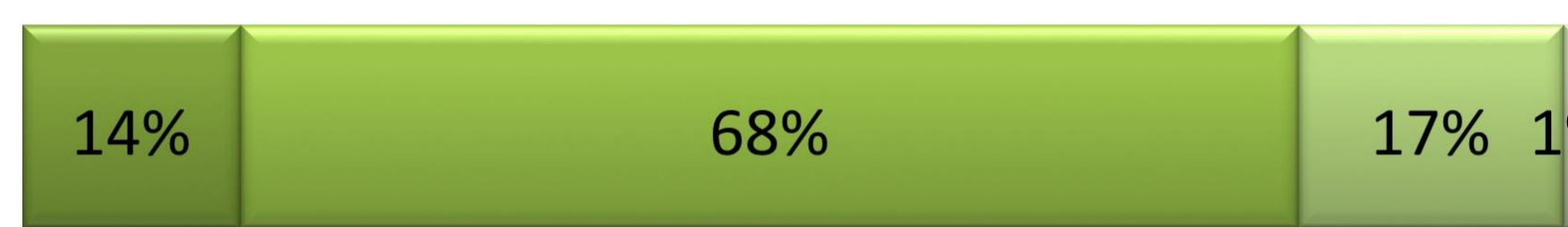
**The types of mobile devices students use most frequently in PBL:**

Have been using mobile devices for:
- 0 year
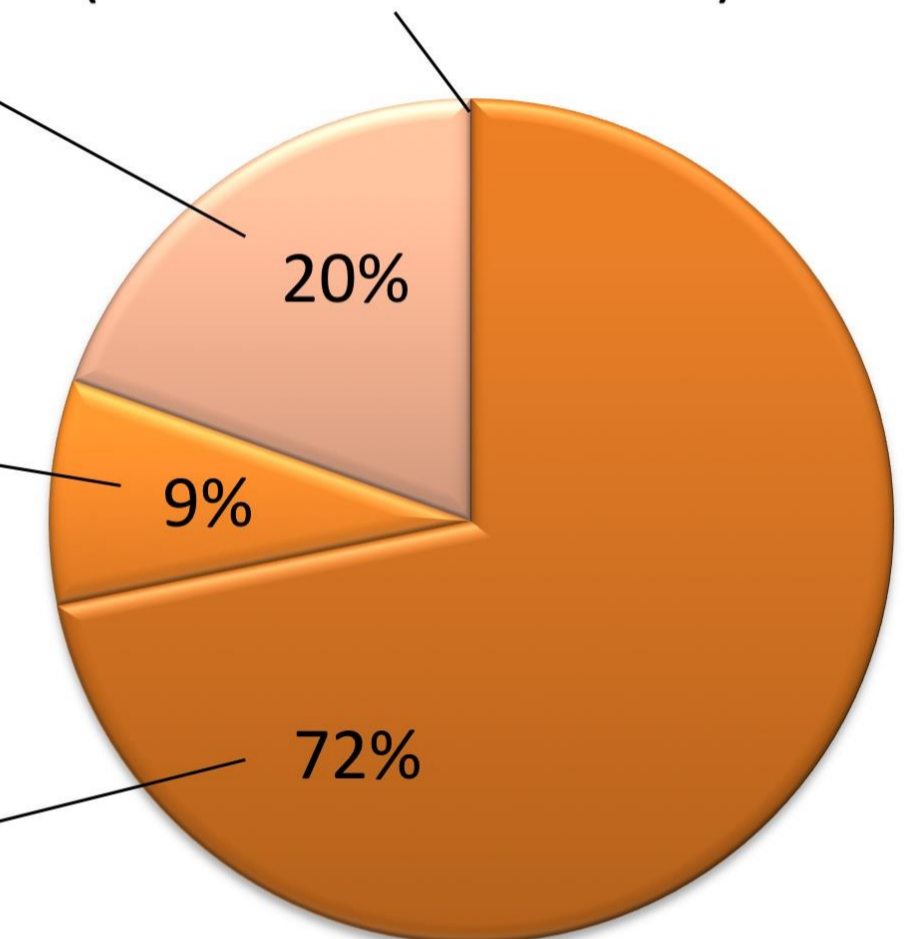- ≤ 4 years
- 5-10 years
- >10 years



Tablet: 54% / 45% / 1%
Smartphone: 14% / 68% / 17% / 1%
Laptop: 7% / 65% / 22% / 6%

0.3% Ebook reader (bar chart not shown)

Pie chart: 72%, 9%, 20%

**Students' agreement to the guidelines on the use of mobile devices:**

| To what extent do you agree with the following recommendations? | Agree | Neutral | Disagree |
|---|---|---|---|
| **Roles** | | | |
| 1. The use of mobile devices by students should be regulated within PBL tutorials. | 36% | 28% | 35% |
| 2. Only designated student(s) should do online searching when the PBL group decides internet information is needed. | 17 % | 14 % | 68% |
| 3. Only laptops should be used in PBL tutorials (i.e., other mobile devices should not be used). | 17 % | 19% | 64% |
| **Processes** | | | |
| 4. The use of mobile devices to search for factual information (e.g., definitions of terms, specific laws, epidemiological data, etc.) should be encouraged. | 89% | 9% | 2% |
| 5. The use of mobile devices to search for multimedia files should be encouraged in PBL tutorials, since they can facilitate visualization and co-construction of knowledge. | 86% | 12% | 3% |
| 6. The use of cloud-based services such as Google Docs, etc, should be encouraged for collaborative note-making in PBL. | 80% | 18% | 2% |
| 7. Mobile devices should not be used for non-educational purposes, such as chatting with friends, surfing the net, etc. | 67% | 20% | 13% |
| 8. PBL tutorial time should mostly be spent on discussion, instead of searching for information. | 60% | 22% | 19% |

## CONCLUSIONS

- Almost all students use mobile devices for the PBL discussion.
- The uses include: information search & synthesis, and facilitation of discussion.
- Recommendations on effective use of mobile devices can guide students to use their mobile devices better for learning .

### Recommendations based on the findings

- All students should be free to choose whether or not to use their mobile devices in PBL.
- Mobile devices should be used for educational purposes only.
- The tutorial time should mostly be spent on PBL discussion.
- Students should be encouraged to use cloud-based services for collaborative activities.