

**Educational Use of Smartphone:
a comparative study of LIS students at the University
of Hong Kong and the University in Tsukuba**

Dana Dukic, HKU, HK

Dickson Chiu, HKU, HK

Patrick Lo, Tsukuba University, Japan

Mobile technologies for learning and study

There growing body of literature in the area of library and information science on using mobile technologies for learning and study

Studies of using mobile technologies for learning and study fall into two broad research directions:

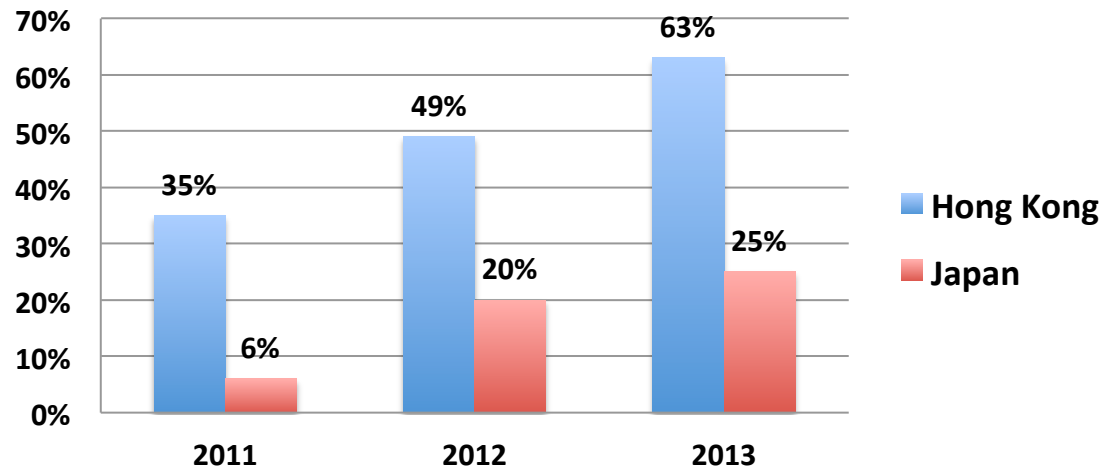
- evaluating the effectiveness of mobile learning
- designing mobile learning systems

This study explores mobile learning of LIS students at the University of Hong Kong and the University of Tsukuba (Tokyo, Japan)

Smart phone penetration

- The fast and steady growth of smartphone penetration in Hong Kong and Japan is obvious

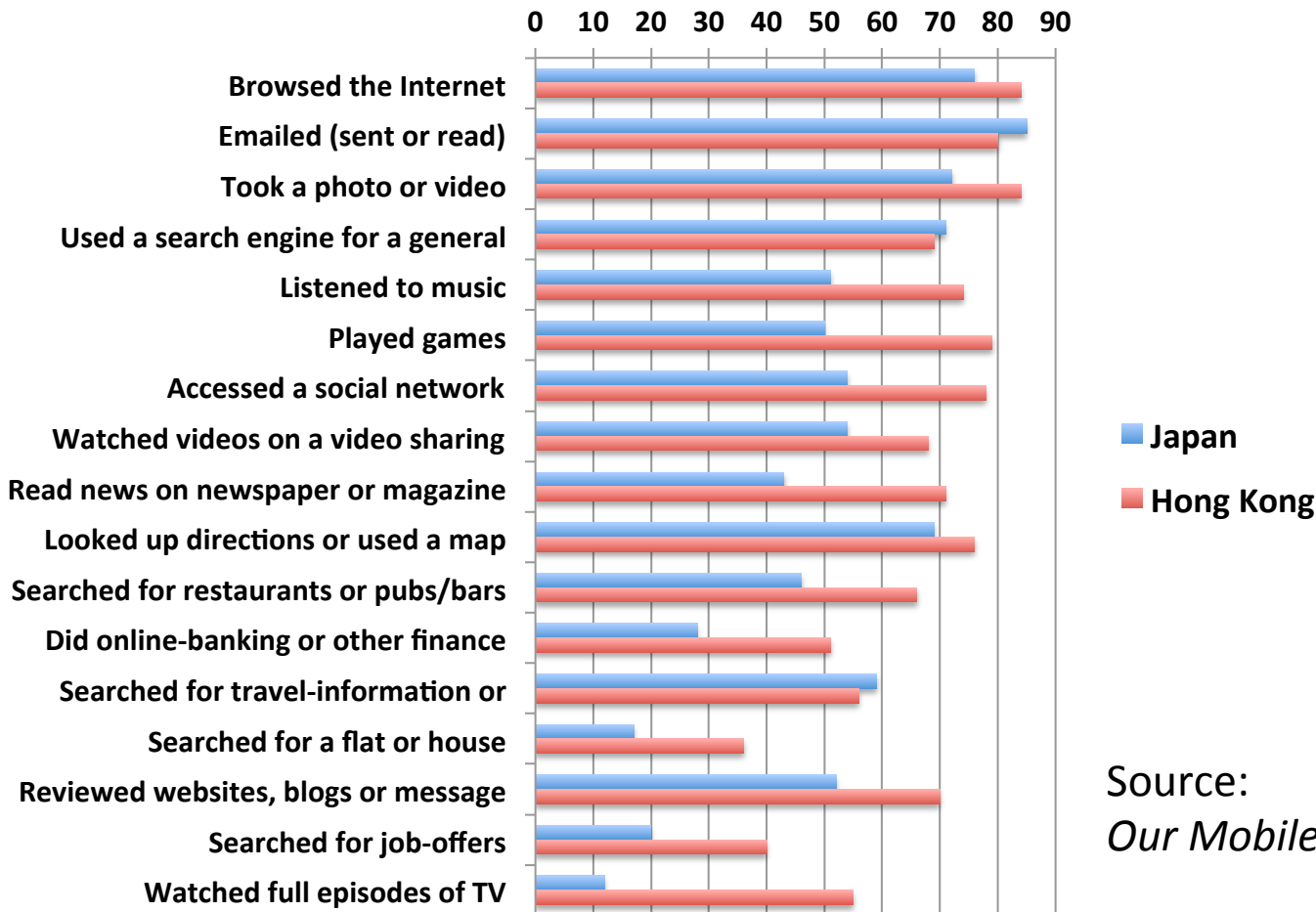
Smartphone penetration in Hong Kong and Japan



Source: *Our Mobile Planet* (Google, 2013)

Smartphone usage: Hong Kong & Japan

- In Hong Kong and Japan smartphones are widely used and have become a part of people's everyday life



Source:
Our Mobile Planet (Google, 2013)

Research objectives and methods

Research objectives

1. How LIS students use their smartphones for their research and study purposes?
2. Do LIS students use smartphones to access library resources and use library services for study purposes?

Research methods

Mixed methods

- Qualitative research – grounded theory
- Quantitative research – survey

Research phases

Phase 1. Qualitative analysis – analysis of discussion on the Facebook page LISEXCHANGE

Phase 2. Quantitative analysis – online survey

Phase 1. Qualitative analysis

In the Research phase 1 three types of empirical data will be analyzed:

- LISEXCHANGE Facebook page discussions about using mobile devices
- Provision of library mobile services from the library websites
- Interview with academic librarians

Research sample

Research phase 1:

Qualitative analysis of discussions on the Facebook page
LISEXCHANGE

| Total number of students participants | | | |
|--|----|-------|---|
| Hong Kong | 13 | Japan | 5 |
| Total number of posts | | | |
| Hong Kong | 34 | Japan | 8 |

LIS EXCHANGE

- LISEXCHANGE is a Facebook page established for learning and sharing between LIS students enrolled in HKU and Tsukuba University in Tokyo, Japan
- This group includes 65 members so far



The screenshot shows a Facebook post from the LISEXCHANGE group. The post is from a user named 盧敬之 (Luo Jingzhi) dated October 24, 2013. The text of the post asks HKU and Japanese students about their mobile devices and their usage. The post has received likes from Hei Lee Lam and Chiu Dickson and has been seen by 54 people.

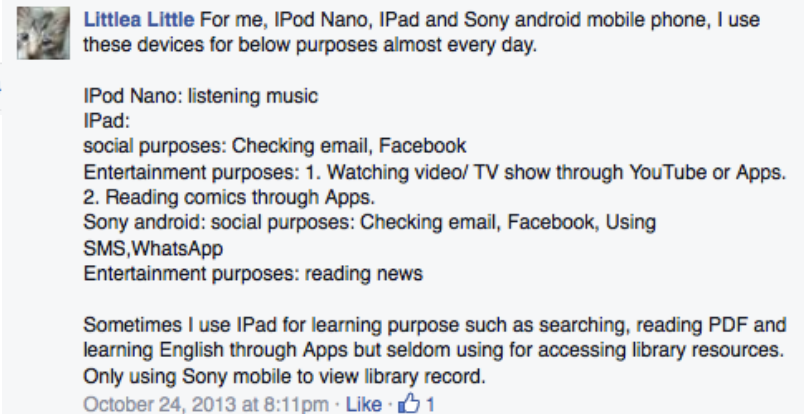
LISEXCHANGE

盧敬之
October 24, 2013

Dear HKU & Japanese students,
Could you please tell me what kind of mobile devices do you own (i.e., iPads or iPhone, etc.)?
If you do, do you use that mostly for social or entertainment purposes? ...
[See More](#)

Like · Comment · Share

Hei Lee Lam and Chiu Dickson like this. Seen by 54



The screenshot shows a response to the Facebook post from a user named Littlea Little. The user lists their mobile devices and their usage for social and entertainment purposes. The response is dated October 24, 2013, at 8:11pm and has received 1 like.

Littlea Little For me, iPod Nano, iPad and Sony android mobile phone, I use these devices for below purposes almost every day.

iPod Nano: listening music
iPad:
social purposes: Checking email, Facebook
Entertainment purposes: 1. Watching video/ TV show through YouTube or Apps.
2. Reading comics through Apps.
Sony android: social purposes: Checking email, Facebook, Using SMS,WhatsApp
Entertainment purposes: reading news

Sometimes I use iPad for learning purpose such as searching, reading PDF and learning English through Apps but seldom using for accessing library resources.
Only using Sony mobile to view library record.

October 24, 2013 at 8:11pm · Like · 1

Interview with academic librarians: HKUL & Tsukuba University Library

Interview with Reference librarian at HKUL

- HKUL has already developed a number of mobile services that users can access from the HKUL official app or from the library website



- According to HKUL statistics only around 2% of current services are done through mobile so far
- HKUL is constantly watching user behavior and technology change for further developments



THE UNIVERSITY OF HONG KONG PRESENTS
HKU Mobile App

Interview with academic librarians: HKUL & Tsukuba University Library

Interview with Reference librarian at Tsukuba University

Library mobile website: Hong Kong University Library & Tsukuba University Library

The screenshot displays the mobile website interface for The University of Hong Kong Libraries. At the top left is the university's crest and the text "The University of Hong Kong Libraries". Below this is a search bar labeled "Dragonet keyword search" with a magnifying glass icon. A vertical menu on the left contains icons and text for: Hours, Map, Mobile Resources, MyAccount@HKUL, Seat Booking, eVideo mobile (beta), Contact Us, and Full Library Website. To the right, a "Mobile Resources" section is expanded, showing a list of subject categories: Multi-Discipline, Architecture, Arts and Humanities, Engineering and Technology, Law, Medical Sciences/Nursing (highlighted with a blue bar), Science, Social Sciences, and Area Studies.

The University of Hong Kong
Libraries

Dragonet keyword search

Hours

Map

Mobile Resources

MyAccount@HKUL

Seat Booking

eVideo mobile (beta)

Contact Us

Full Library Website

Mobile Resources

Multi-Discipline

Architecture

Arts and Humanities

Engineering and Technology

Law

Medical Sciences/Nursing

Science

Social Sciences

Area Studies

Qualitative data analysis

Step 1. Data preparation

- Extraction from the LISEXCHANGE Facebook page all discussion related to mobile devices and how they are used

Step 2. Data exploration

- read carefully through the data to uncover the major categories and their relationships
- writing memos

Step 3. Data reduction

- reading through and sorting memos,
- coding - identifying segments in textual data and giving each a label
- developing major concepts or categories – based on extracted labels

Step 4. Interpretation

Data analysis and research findings

The qualitative analyses of data from the Facebook page resulted in development of the number of categories used for data analysis and presentation

Major categories

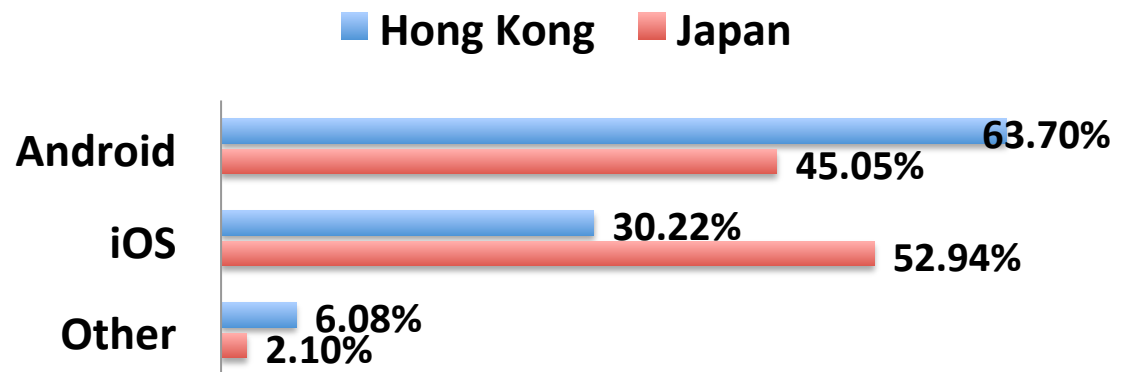
1. Type of mobile device & most popular apps
2. Usage purpose:
 - 2.1 Communication & social media
 - 2.2 Reading (recreation and reading to stay informed)
 - 2.3 Entertainment: movies (videos), music, gaming
 - 2.4 Information for everyday needs
 - 2.5 Learning and study
 - 2.6 Library resources & services

Types of mobile devices

| HKU MLIS students | Tsukuba U MLIS students |
|--|--|
| Use smartphones with Android operating system more often than iOS operating system smartphones | Use smartphones with iOS operating system more often than Android phones |

The data obtained in our study are completely compatible with data showing a distribution of operating systems use in Hong Kong and Japan general population

Top mobile operating system 2103



Sources: StatCounter Global Stats

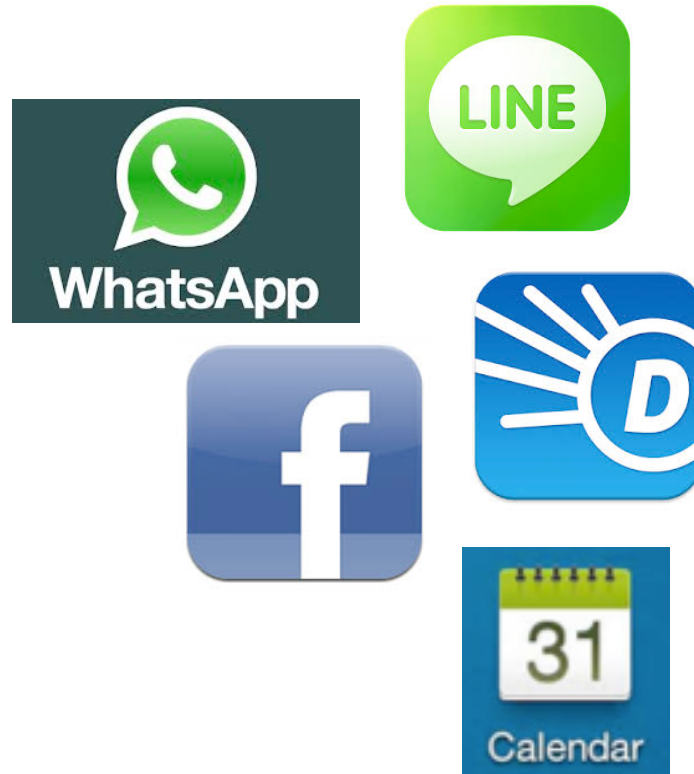
Most popular apps

The most popular apps:

- Facebook
- whatsapp,
- Line

Some also use:

- dictionary apps
- Calendar
- webchat
- To-do-list
- apps for learning English, Putonghua, XML



Usage purpose: Communication & Social Media

| Communication | Social media |
|------------------------|--------------|
| Email, talk, chat, SMS | Facebook |

- In using smart phones for communication and social media there is no difference in HKU and TU students

Comments:

“Most of the time, I checked my Facebook, emails, whatsapp, LINE through my mobile.”

Usage: Reading for recreation and news

| Reading for recreation | Reading for news |
|--|--|
| <ul style="list-style-type: none">• Comics (6)• Fiction books (5)• Magazines | <ul style="list-style-type: none">• Online news• Forums |

Tsukuba U students mention only reading for news

Comments

For entertainment, I don't need to be too concentrated, so I can use mobile device to access and read (such as manga and updates in social media) while I am queuing up outside sushi restaurant, or on bus.

Usage: Reading for recreation and news

More comments

Reasons provided for reading on smartphones:

1. For reading manga, I think the text is simple and short is the main reason (at least to me)
2. For reading fiction, since the material is usually in text format, the browser on smartphone can readjust the font size for you, but it is still difficult to concentrate on. However, you don't have to really concentrate on it as it is just for leisure.
3. You can skip a paragraph or a chapter if you like. You don't really need to pay a lot of attention of what you read so the environment of reading (e.g. on the bus, in the restaurant) does not matter much.

All comments suggest that respondents read on smart phone texts that are simple, do not demand a lot of concentration and that they read on their smart phones while being outside their offices or homes.

Usage purpose

| Entertainment | Information for everyday needs: | Other purposes |
|---|--|---|
| <ul style="list-style-type: none">• Play games• Watch movies• Listen to the music | <ul style="list-style-type: none">• Weather forecast,• Restaurant nearby,• City map,• Transportation information (bus & other)• Finding employment | <ul style="list-style-type: none">• Taking pictures• Update calendar, to-do lists• Using dictionary |

Most of respondents use their smartphones for entertainment

Almost all data apply to HKU students, only few to Tsukuba U

Usage: study and learning

- Most of respondents do not use smartphones for study
- Very few seldom use smartphone for study
- Very few search library catalog and download articles on their smart phones (only two mention that they sometimes read .pdf of a journals / books on their smart phones (1 HKU & 1 TU)

Two major reasons for not using smartphones for study are mentioned:

- the screen is too small – inconvenient for reading serious papers or books
- studying is defined as learning where higher level of concentration is required and it demands more quiet environment (office, library or my desk at home)

There is not much difference in using smart phones for study between HKU and Tsukuba U students.

Usage: study and learning

Comments:

1. The screen is too small and it is not very comfortable to read under sharp light....So I will just search the articles and add it to my favorite or send to my email so that I can read it at home easily
2. But for formal learning, higher level of concentration is required. Usually I will do it in a more quiet environment, say in my room. There is no point for me to use my mobile device for formal learning and let my computer being idle when I am in my home.

Usage: study and learning

Still, there are situations when LIS students use their smart phones for learning and study purposes

They use smartphone to

- discuss with assignment through the social media apps
- check the class website to see if the new lecture notes are available
- check the latest news from course management/learning platform (moodle)
- check university official email
- Record a face-to-face interview for a research project

Some participants use their smart phones for some personal learning: Google translate for reading English, Apps to learn Putonghua, XML, etc.

Usage: library resources & services

Searching library resources

- Respondents only sometimes use smartphone to search and access resources from university library
- They search the articles and send it by email to read it at home easily on PC

All respondents generally agree about the following statement:

“When both computer and mobile device is available to searching OPAC or download journal article I will certainly use my computer instead of my mobile device”

Usage: library resources & services

- They would search OPAC on mobile phone only when they are not at home and are in an emergency situation – assignment deadline

“I have just downloaded a journal article and read by my phone once, because it was a dinner time on mother's day and I have to leave my desk to have dinner with my wife's mum (the deadline of my assignment was very close...)”

There is no big difference in using library resources and services through smart phone between HKU and Tsukuba U students

Usage: library resources & services

- Only three respondents mention that they use a smart phone to access their library account and renew books
- Others never tried to use any library service related to library account management, to renew library resources or book a study room in the library

Conclusions

- For communication, socializing, reading for recreation and for news
- For entertainment, for everyday life information and activities
- Most of respondents do not use smartphones for “formal learning” like reading academic or professional materials or writing
- Even if they sometime use their smartphones to search for resources they do it or send them to their computers at home for later reading
- Still some students use their smartphones for study related activities like discussing assignment, accessing resources and news form the course management/learning platform, checking course email etc.

Conclusions

- Major reasons for this behavior are the small screen, difficult typing
- Another reason is that smartphone is perceived as a mobile tool used outside home, office or library, in the environment that is noisy and distractive, not suitable for formal study
- Although both academic libraries involved offer a variety of library services for mobile devices the usage rate of these services is still very low
- In using library resources and services respondents are divided: some search OPAC for study purpose and use other services like accessing library account, renewing books and some respondents never do it

Recommendations

Results of the qualitative analysis of data collected through the Facebook page LISEXCHANGE provide some useful guidance for the second phase of the research

Two directions for further research

- smartphone usage for formal studies and formal learning that involves information retrieval, browsing, reading....
- smartphone usage for informal learning that involves activities and behavior that are closely linked to formal learning and are important components of learning like discussing assignment, accessing course management system for lecture notes and resources etc.