Using Learner's Mobile Device as Personalized Learning Hub for Enriching Learning Experience: *Less Teaching, More Engagement*

June 2nd, 2015

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The BYOD Project

3 Faculties 28 Members

The BYOD Project:

> Enhancing reflective engagement of learners and lecturers;

> Enhancing sustainability and scalability of e-learning implementation in learning and teaching at HKIEd

**3 Rounds, 44 Times of Trial Teaching**

The BYOD Project:

Community of Practice @ HKIEd
3 Faculties, 28 Members

Members:
Dr. Li Kai Ming (MIT)
Dr. Ma Qing Angel (LML)
Mr. Chan Ping Man Paladin (SES)
Ms. Suzan Elizabeth Stamper (CLE)
Mr. Foung Kin Wai Dennis (CLE)
Dr. Li Ping (MIT)
Dr. Yeung Chi Ho Bill (SES)
Dr. Cheang Chi Chiu Frank (SES)
Dr. Yang Chi Cheung Ruby (ADS)
Dr. Han Chung Wai Christina (ECE)
Dr. Ying Danjun Issa (CLE)
Ms. Xu Damiao Zoe (CLE)
Dr. Yu Baohua (ELE)
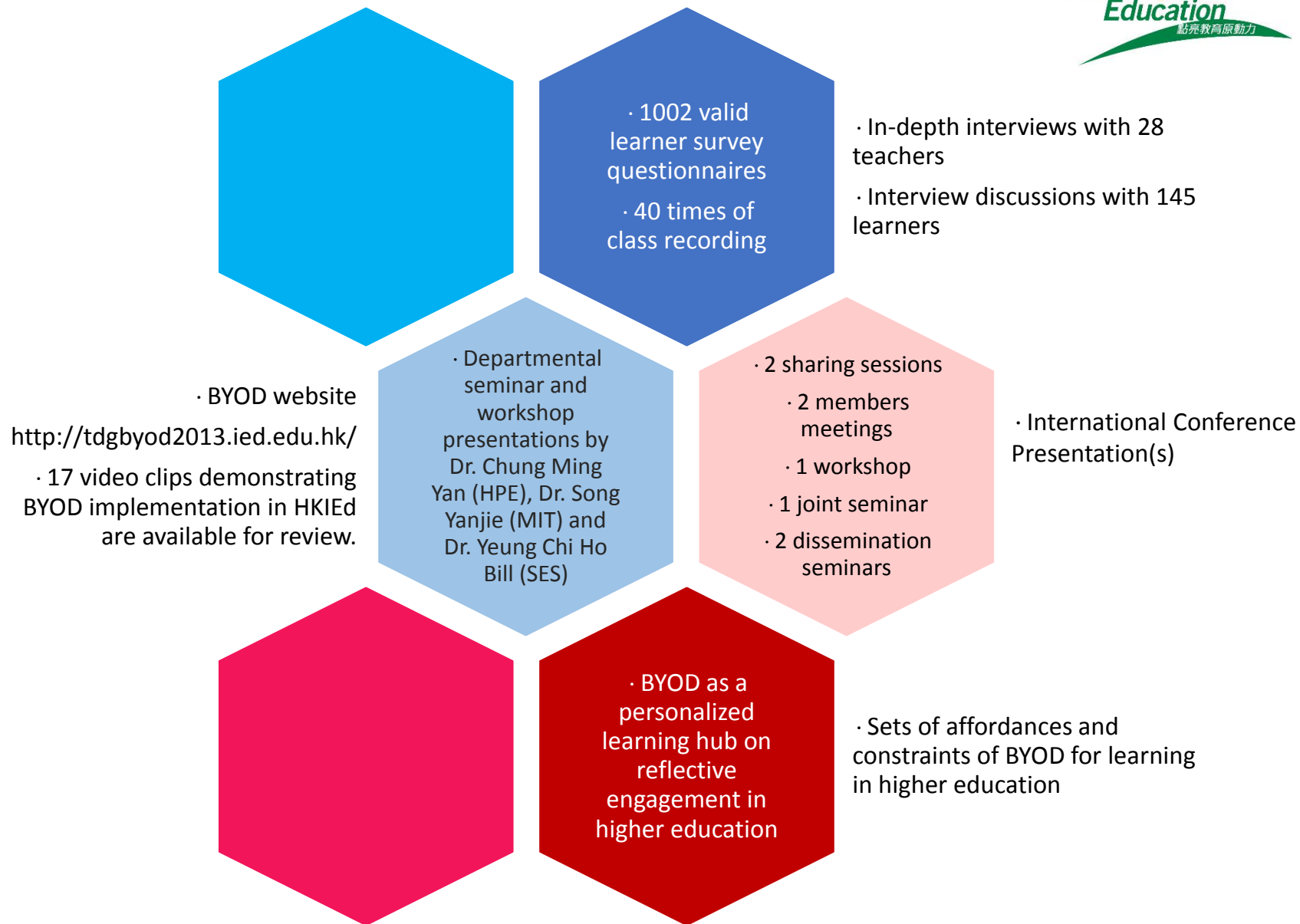Dr. Wong Tak Lam Ivan (MIT)
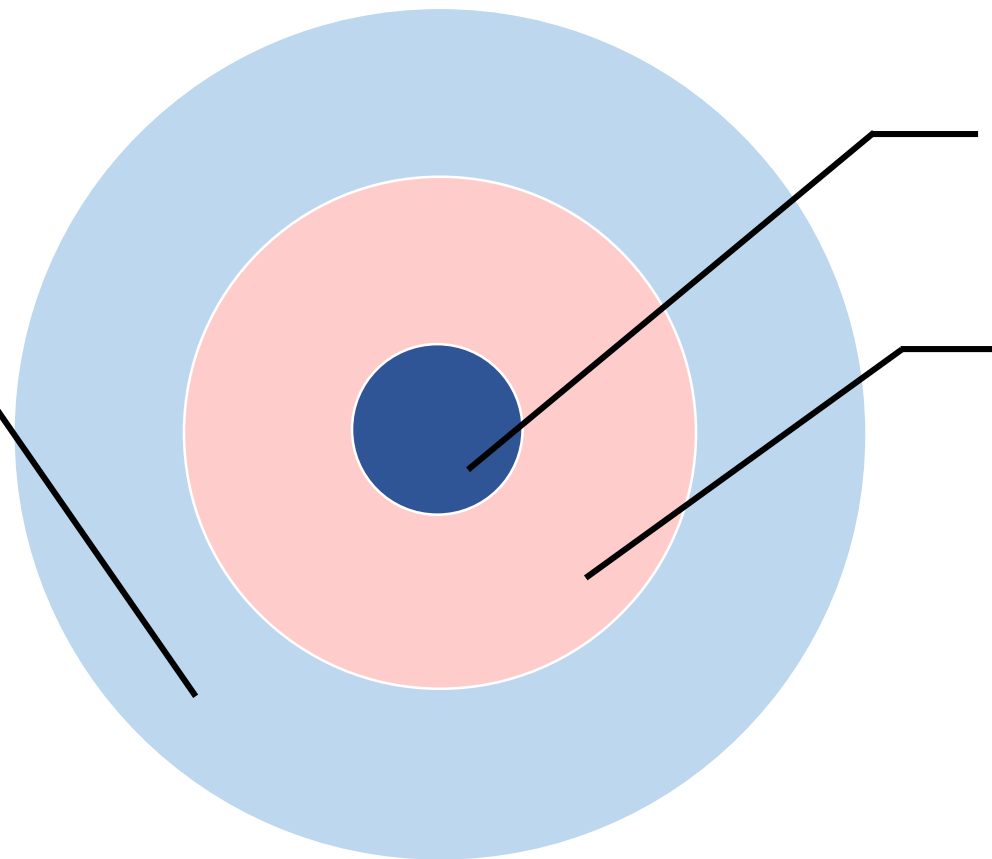
Principal Project Supervisors:
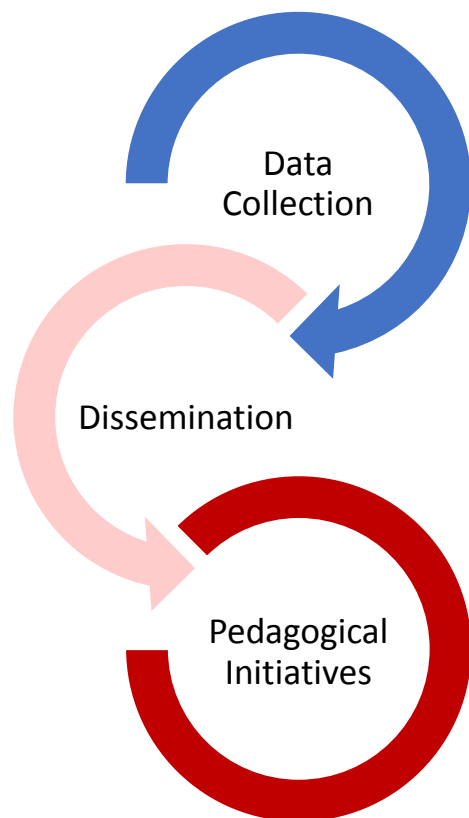Prof. Kong Siu Cheung (MIT & LTTC)
Prof. Chung Wai Yee Joanne (HPE & FLASS)
Dr. Song Yanjie (MIT)

Co-supervisors:
Prof. Lim Cher Ping (C&I)
Prof. So Wing Mui Winnie (SES)
Dr. Cheng Kwok Shing Gary (MIT)
Mr. Chui Hin Leung Mike (MIT)
Dr. Chung Ming Yan (HPE)
Dr. Ma Wai Wing Ada (HPE)
Dr. Poon Kin Man Leonard (MIT)
Dr. Wang Lixun (MIT)
Dr. Wong Ka Wai Gary (MIT)
Dr. Tam Chi Ming (LCS)
Dr. Tse Ka Ho (CHL)

The BYOD Project

Data Collection

Dissemination

Pedagogical Initiatives

· 1002 valid learner survey questionnaires

· 40 times of class recording

· In-depth interviews with 28 teachers

· Interview discussions with 145 learners

· BYOD website http://tdgbyod2013.ied.edu.hk/

· 17 video clips demonstrating BYOD implementation in HKIEd are available for review.

· Departmental seminar and workshop presentations by Dr. Chung Ming Yan (HPE), Dr. Song Yanjie (MIT) and Dr. Yeung Chi Ho Bill (SES)

· 2 sharing sessions

· 2 members meetings

· 1 workshop

· 1 joint seminar

· 2 dissemination seminars

· International Conference Presentation(s)

· BYOD as a personalized learning hub on reflective engagement in higher education

· Sets of affordances and constraints of BYOD for learning in higher education

BYOD Learner Survey Results (n=1002)

Question: I think wireless-connected portable computing device…		
Learner's Social Reflective Engagement	Mean	SD
Enhances course-related interaction with peers	3.679	0.832
Enhances course-related interaction with lecturers	3.679	0.801
Provides instant feedback from lecturers	3.653	0.804
Fosters collaboration in course work	3.621	0.774
Provides instant feedback from peers	3.610	0.817
Stimulates my desire of exploring course-related e-resources	3.578	0.841
Learner's Personal Engagement		
Improves learning motivation in class	3.683	0.802
Stores my learning outcomes efficiently	3.649	0.829
Facilitates understanding of the topics by getting access to course-related e-resources	3.616	0.809
Arouses my attention to the lecture	3.578	0.866
Enlightens me to have effective study methods and skills	3.552	0.824
Fosters self-reflection of learning after class	3.551	0.818
Keeps track of my learning progress	3.543	0.828
Empowers my control over learning	3.509	0.801

Degree of agreement: 1=Strongly Disagree; 2=Disagree; 3=Neutral; 4=Agree; 5=Strongly Agree

Major Teacher Interview Feedbacks:

Advantages

- BYOD enables the teacher to stay connected with students, engage them to discuss and exchange ideas with each other online both in and outside classroom throughout the course.

- With BYOD, project-based learning can be better enacted in the entire course. For example the teacher can design seamless and mobile learning tasks as part of project-based learning for students to work on their group projects, at the same time students can also collaborate more efficiently when they carry out group projects.

- Online learning data such as discussion, polling results can be used for further discussion in and after class, at the same time leave traces that help students reflect on their learning and help teachers refine teaching designs.

- BYOD provides a supportive environment for students to get access to learning materials and search for information.

- Students can choose for themselves the best tools to support their learning in various ways without having to rely on the course materials provided by teachers.

Major Teacher Interview Feedbacks:
Constraints

- Students' willingness and digital literacy concern the teachers when designing BYOD related class activities, especially considering the differences of students' mobile devices.

- Teachers still need time to explore what topics in their courses are suitable for adopting BYOD, to look for the right apps, to prepare for new forms of class activities and to come up with contingency plans in case technical problems occur.

- Teachers also concern whether or not the Wi-Fi network is strong enough for supporting all in-class activities requiring internet connection.

Major Learner Interview Feedbacks:

Advantages

- With their own mobile devices in hand, students are able to access course materials, receive timely updates from teacher and students, and take notes of their ideas in learning anywhere, anytime.

- Students no longer have to rely on teachers. They can search information online, or make use of tools such as online dictionaries with their mobile devices to help them understand course content.

- Facilitated by various digital ways of communication such as Social Learning Network and LMS, in forms of online discussion, polling, and e-resources sharing, interaction is enhanced, both among peers and between teacher and students.

- Students are able to take quizzes and submit assignments online conveniently with their mobile devices. With use of LMS and other digital tools, students can evaluate how they have performed compared to their peers with the instantly computerized results supported by the tools, as well as give and receive feedback from teacher and peers conveniently.

Major Learner Interview Feedbacks:
Constraints

- WiFi infrastructure is one major concern, judging from all responses collected by the project team over past two years. However, students do perceive improvement in recent semesters.

- Students are expecting to have more supports from the institute to provide them with better lending services and device purchase schemes.

- Battery life is another concern for students, especially when device use is frequent and requires internet connection.

The BYOD Project:

Scaling Up Professional Development @ HKIEd

The BYOD project team will collaborate with the Center for Learning, Teaching and Technology (LTTC), *to invite one or two teaching staff members from each faculty at HKIEd to select one BYOD lesson for observation and to demonstrate their BYOD teaching designs in HKIEd classrooms, as a way to further diffuse BYOD members' experiences* of making use of mobile device as student's personalized learning hub, as well as their pedagogical ideas for generating reflective engagement of learners with BYOD.

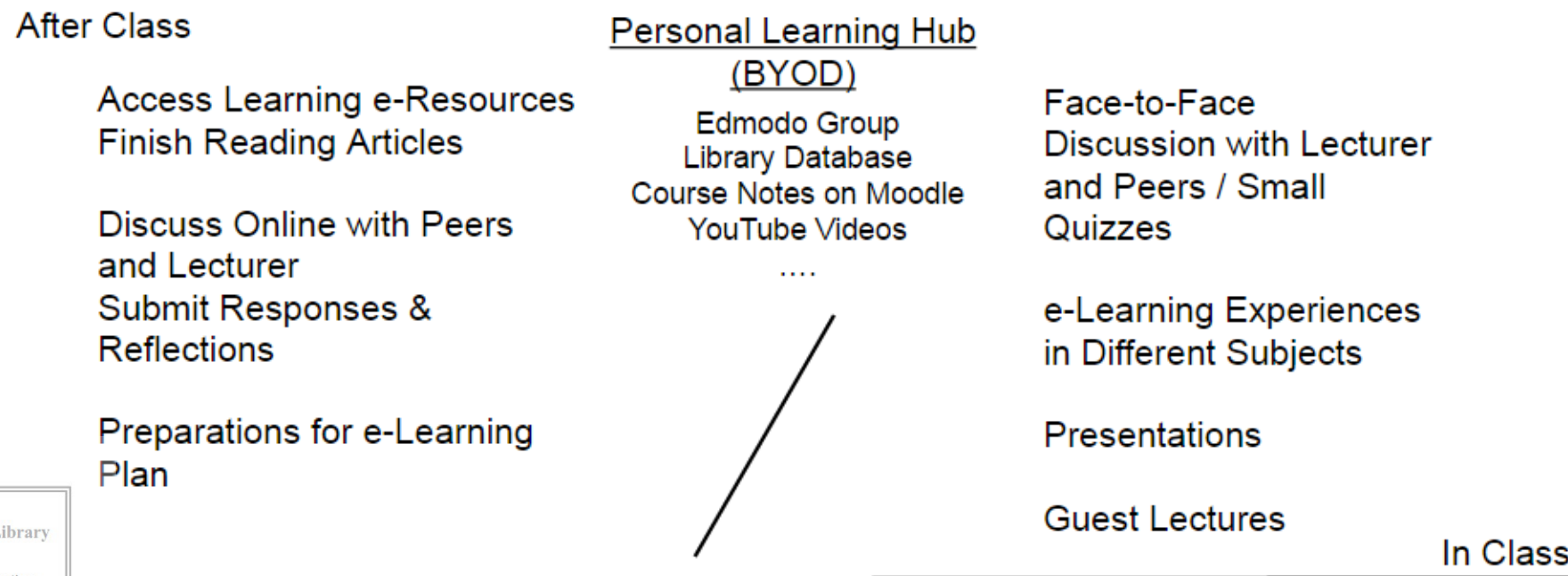| **3-6 times of BYOD lesson observation + after-class discussion (0.5 or 1 hour) with experienced teaching staff members**	**FLASS**	**FEHD**	**FHM**
	1 or 2 lesson observation & after-class discussion	1 or 2 lesson observation & after-class discussion	1 or 2 lesson observation & after-class discussion

Making Use of Learner's Mobile Device as Personalized Learning Hub for Enhancing Learning Experience

Pedagogical Designs with the Framework of Reflective Engagement and the Flipped Classroom Strategy

Using Learner's Mobile Device as Personalized Learning Hub for Enhancing Learning Experience:
Pedagogical design with *Flipped Classroom*

Learners' own mobile devices as their "personalized learning hub" supports ***seamless social interaction among peers and teachers with the convenient retrieval and sharing of e-resources*** in the learning process

BYOD for Flipped Classroom Strategy

After Class	Personal Learning Hub (BYOD)	
Access Learning e-Resources Finish Reading Articles	Edmodo Group Library Database Course Notes on Moodle YouTube Videos ….	Face-to-Face Discussion with Lecturer and Peers / Small Quizzes
Discuss Online with Peers and Lecturer Submit Responses & Reflections		e-Learning Experiences in Different Subjects
Preparations for e-Learning Plan		Presentations
		Guest Lectures
		In Class

Using Learner's Mobile Device as Personalized Learning Hub for Enhancing Learning Experience:
Pedagogical design with *Flipped Classroom* (Cont'd)

- The use of portable computing devices in the BYOD initiative provides a transparent platform for individual learners to communicate with peers and teachers for just-in-time interactions, such as group discussions immediately after information search tasks, in subject learning without time and location constraints.

Connecting individual hubs through social network platform

Learner's Mobile Device as Personalized Learning Hub:

A Nucleus in Flipped Classrooms

Without time and location constraints

Just-in-time interaction with peers and teachers

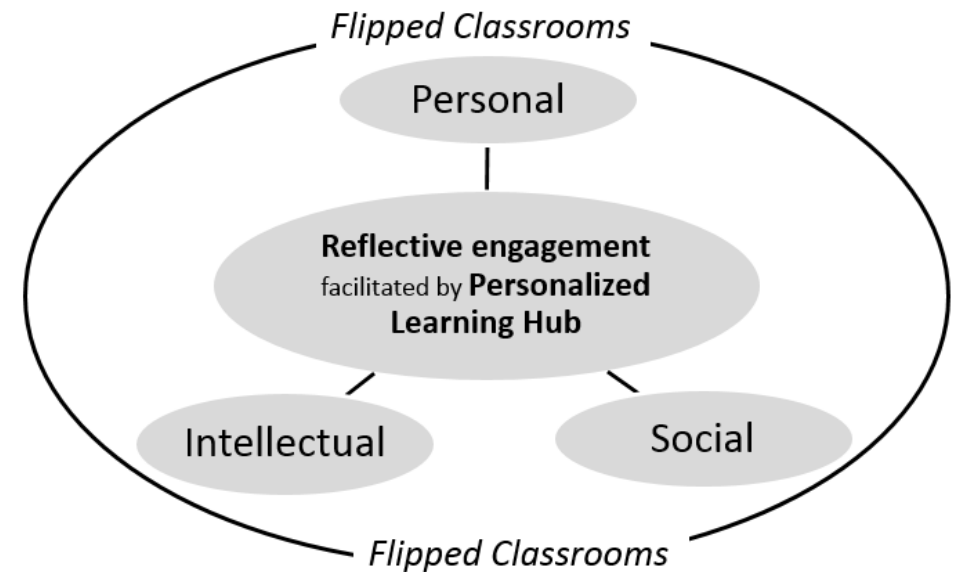Enhancing learners' reflective engagement
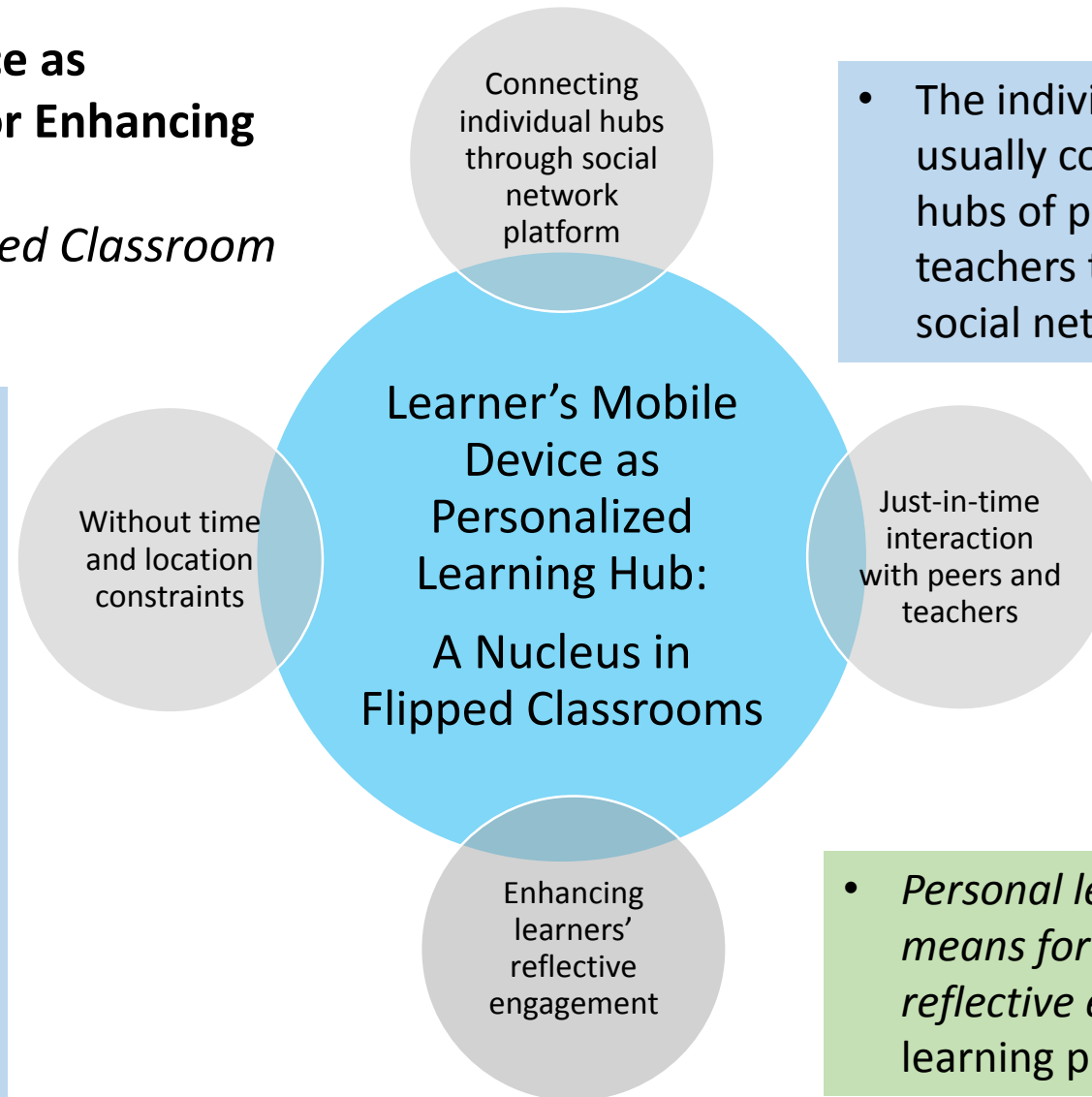
- The individual hub usually connects the hubs of peers and teachers through a social network platform.

- *Personal learning hub is a means for achieving the goal of reflective engagement* in the learning process.
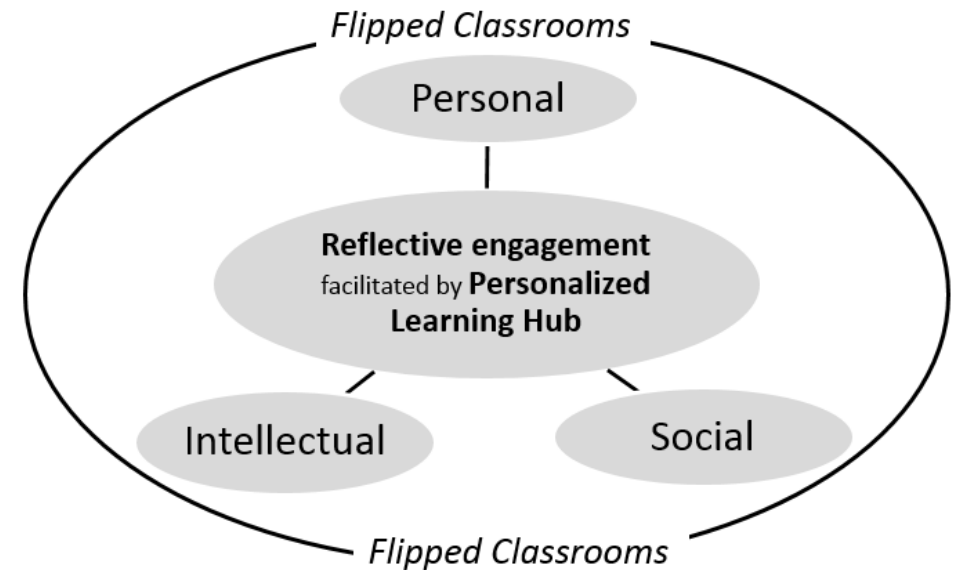
Using Learner's Mobile Device as Personalized Learning Hub for Enhancing Learning Experience:
Pedagogical design with *Reflective Engagement*

- Reflective engagement refers to learners' continual and active participation in their problem inquiry with a continuous and critical judgment of inquiry process and inquiry outcomes for possible improvement (Farr & Riordan, 2012; Lyons, 2006; Rodman, 2010).

- *Personal learning hub is a means for achieving the goal of reflective engagement* in the learning process.

Using Learner's Mobile Device as Personalized Learning Hub for Enhancing Learning Experience:
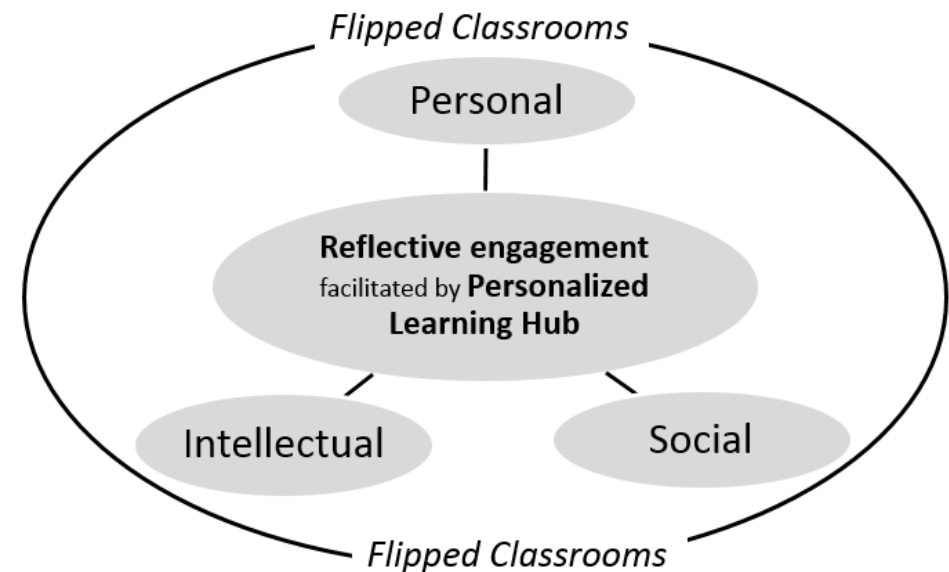Pedagogical design with *Reflective Engagement* (Cont'd)

Flipped Classrooms

Personal

Reflective engagement
facilitated by **Personalized Learning Hub**

Intellectual   Social

Flipped Classrooms

- Two Principles:
1) Learners' reflection is a continual, active inquiry process across different spaces;
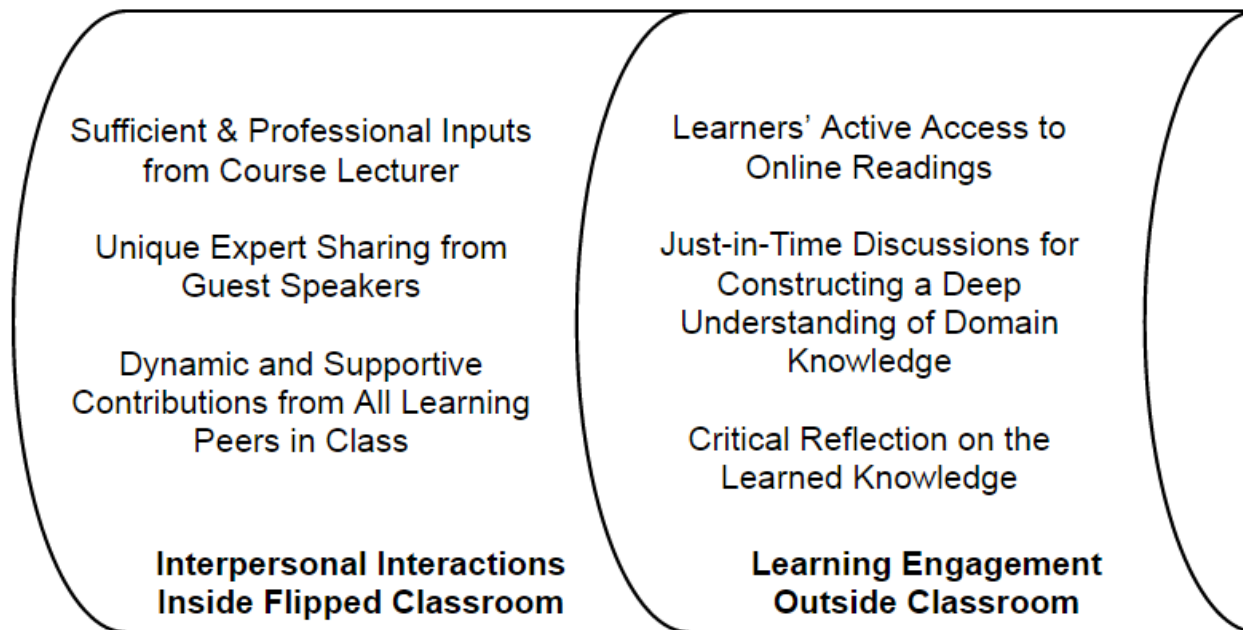2) Reflective engagement concerns 3 non-linear dimensions: personal, intellectual and social engagement.

- *Intellectual* **Reflective Engagement**
Learners show interests in the specific educational issues and confidence in solving the issues.
- *Personal* **Reflective Engagement**
Learners demonstrate awareness of learning expectations and learning outcomes.
- *Social* **Reflective Engagement**
Learners make active interactions with peers and teachers for knowledge construction.

Using Learner's Mobile Device as Personalized Learning Hub for Enhancing Learning Experience:
Pedagogical design with *Reflective Engagement* (Cont'd)

- The ***reflective framework was able to guide the teacher to design learning tasks*** that made learners aware of
1) the domain-specific intellectual ideas important for the targeted topics,
2) the link between their personal learning intentions and expectations,
3) the support from social interactions with peers in the learning process.

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Using Learner's Mobile Device as Personalized Learning Hub for Enhancing Learning Experience:
An example

Sufficient & Professional Inputs from Course Lecturer

Unique Expert Sharing from Guest Speakers

Dynamic and Supportive Contributions from All Learning Peers in Class

Interpersonal Interactions Inside Flipped Classroom

Learners' Active Access to Online Readings

Just-in-Time Discussions for Constructing a Deep Understanding of Domain Knowledge

Critical Reflection on the Learned Knowledge

Learning Engagement Outside Classroom

- A good pedagogical design with flipped classroom strategy guided by the reflective engagement framework supported by making use of learner's mobile device as personalized learning hub should demonstrate ***an interlocking relationship between rigorous interpersonal interactions inside classroom and learning activities outside classroom.***

- Learning activities designed should ***provide opportunities for learners to have social interactions and personal reflections to achieve active, constructive and interactive learning experiences*** inside and outside classroom.

- ***The use of learner's mobile device as a "personalized learning hub" is to support, trigger and extend learning activities seamlessly throughout the learning process.***

Teaching Development Grants Project
Bring Your Own Device (BYOD) for Reflective Engagement of Learners in Digital Classroom
Dissemination Seminar II

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Thank you.