EPORTFOLIO IN HIGHER EDUCATION IN HONG KONG

Applicability of an ePortfolio, through online reflection/feedback using wearable technology

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eHealth Literacy

- Ability to seek, find and understand health information from electronic sources and to apply the knowledge gained to **address or solve a health issue**.

- Ability to work with technology, **think critically** while navigating through a vast array of information tools and sources to acquire the information necessary to make informed decisions.

Norman & Skinner (2006)

ePortfolio tool and eHealth

- The students will continuously learn to critically assess personal information and the available on-line information, organize it and present for peers/tutor **(ePortfolio)**
- Enhancement of critical literacy, raise of concerns about health related topics and stimulate further inquiry, through reliable and relevant **health information** channels online

How it looks

Topic 7: Reflections related to activity tracker intervention

Please write here the reflections related to your experiences with the mi tracker. Do not forget to add date, media (like screenshots of the device, pictures or other media) related to your reflection. The reflection has to be done every week and takes about 10 minutes time.

Please add your thoughts related to the following points if applicable:

- Actual date (20.02.2016)
- Did you feel healthier this week in comparison to last week? (explain changing in well-being like e.g., I slept more and moved more, or I was sick.)
- Which type information did you consult from the tracker (e.g., this week I was concerned about my heart rate when I get up in the morning. I ?activities using the tracker in the past week; I was specially interested in the weekly calorie use statistic of the last month).
- Frequency of use of the tracker (I consulted the heart rate information daily, I did not care about the sleep statistics).
- Changes in using behavior of the tracker (I did not consult the heart rate monitor anymore because...)
- Special events like hike, training. (where the tracker has been used)
- Astonishing effects on your behavior in relation to the health information delivered by the tracker (e.g., I was so astonished, that the hearth rate I measured every morning relates to the week days so I checked information related to the heart rate in the morning on the internet. I wanted to know if heart rate in the morning correlates to the amount of sleep, but I did not find this information through google. I had to perform a forum search.....)
- Interactions with other participants of the course like exchange of experiences, of information related to health, common training, ..., or interchange of data.
- Information searched on the web, in forums in social networks related to the use of the tracker (I visited the following site http://... I was very astonished about what I learned related to the...)
- Active collaboration in health or well-being forums like questions asked, posted answers.
- General reflections, comments, remarks about your health, about activities using electronic media like Internet or other in relation to your well-being (e.g., I started to count the calories i eat every day and compare with the calorie usage)

Please publish last reflection entry on top of the page..e.g.
02.02.2016... bla
27.01.2016... bla

Reflections:

17.04.2016

This should be the last update for my Mi-tracker record. For the record this week,
I walked for the range between 477 to 14,573 steps and slept for averagely 7 hours per day. I think it mis-record my walk count on Wednesday (13/4/2016) since it was a normal day and I was quite sure that I walked more than only 477 steps. Also, on the same day, my sleeping hours was not being tracked. I really think that the Mi-tracker can give a very general picture towards the walk count and sleeping hour count, but error or inaccuracy of data may be resulted due to factors like not sensing well, or lack of battery, I bet.

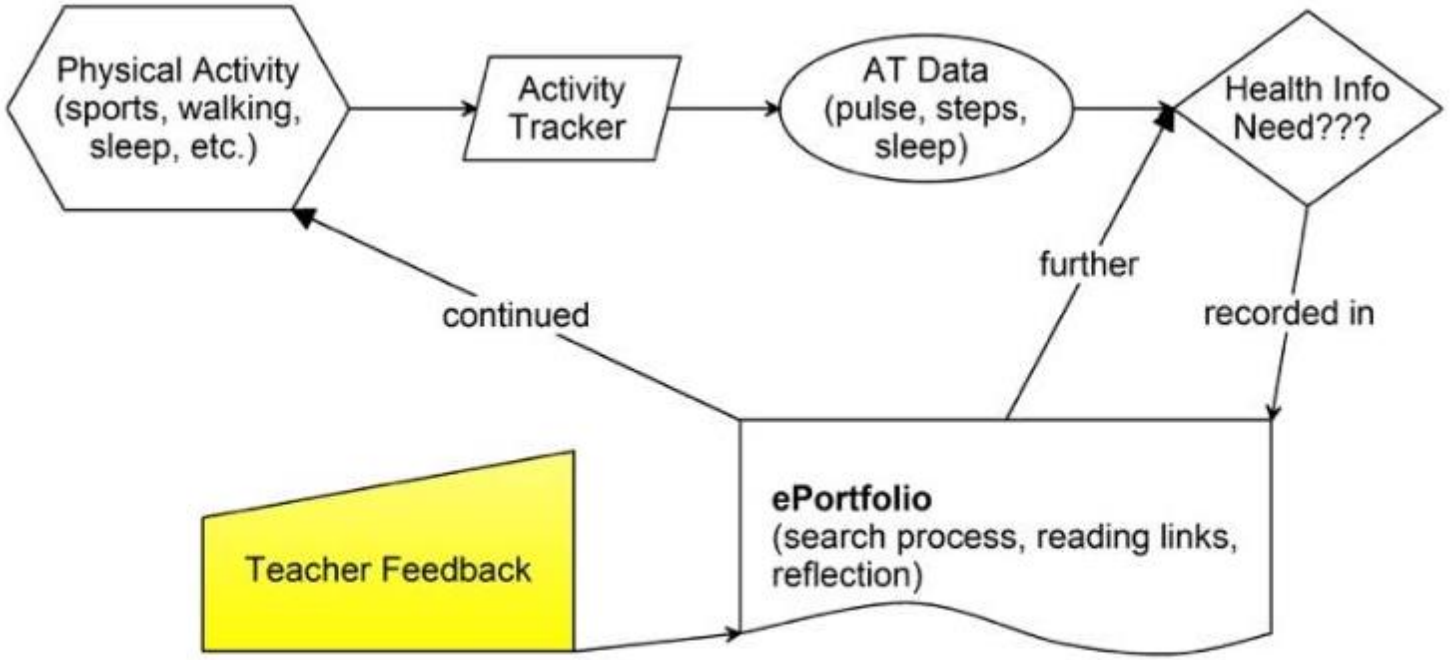
*Please see the attached pdf file (Photo for 17.04.2016) for the photo since the site has insufficient room for storage
Fig. 23 Inaccurate measurement for my walking count on 13/4/2016

As it is the last update, I want to make a summary for my walking count record and sleeping hour record. The following table shows my weekly average record.

Week	Average walking counts (steps)	Average sleeping hours (hours)
	7674	6.5

Expected outcomes

To investigate the ePortfolio tool for enhancement of reflective and autonomous learning and test a possible application, using wearable technologies like Activity Tracker (AT) to develop students' eHealth literacy.



How is it assessed?

- **ePortfolio**: During the entire course students will learn and create their own, individual ePortfolio on the subject Physical Activity and Health. A typical ePortfolio is a collection (by student) of quality evidence that shows students' **continuous** learning process.

- An ePortfolio should contain links, literature references, **reason**s for selecting these, self-reflection on the learning process and a weekly **reflection** (10 minutes each) about Activity Tracker (AT) health related actions and thoughts around, etc. The best time to create an ePortfolio is after the lectures and while preparing for the tutorial (seminars).

- This should be done **continuously** and will be **checked/assessed by the teacher continuously** as well.

Grade Descriptors: ePortfolio

Assessment criteria	Excellent (A+, A, A-)	Good (B+, B, B-)	Satisfactory (C+,C, C-)	Pass (D+, D	Fail
Organization and Writing:	Clearly demonstrating the continuity thought the term No writing/mechanical errors. Easy to navigate. Clear and concise organization.	Demonstrating the continuity thought the term. Few mechanical errors. Navigation is good. Well organized.	Some continuity thought the term. Several mechanical errors. Few problems with organization. May be difficult to read in parts.	Demonstrates minimal knowledge of exercise science concepts.	No continuity. Impossible to follow the organization of the portfolio and many mechanical errors.
Content selection:	All content clearly and directly related to course purpose. High variety of the media and content. Clear understanding of the content High effectiveness of communication and strong evidence of creativity Knowledge of concepts and topical relationships with other content areas.	Most content clearly and directly related to course purpose. Good variety of the media and content. Understanding of the content. Good effectiveness of communication and strong evidence of creativity Knowledge of concepts and topical relationships with other content areas.	Little content related to course purpose. Poor variety of the media and content. Superficial understanding of the content. No evidence of creativity. Knowledge of concepts and topical relationships with other content areas.	The content is generally incompletely or unclearly perceived and analyzed, with little evidence of relevant reading.	Did not submit any content
Reflections:	Clear evidence of critical thinking and problem solving ability. Clear indication on why the content is choosen and reflect on the ideas behind All reflections demonstrate student's development and insight into the complexity of issues presented. Reflections state the "what, so what and now what" in relation to contact. Definite connections with self and others	Good evidence of critical thinking and problem solving ability. Good indication on why the content is choosen and reflect on the ideas behind. Most reflections demonstrate student's development and insight into the complexity of issues presented. Reflections state the "what, so what and now what" in relation to contents. Connections with self and others	Some indication on why the content is choosen and reflect on the ideas behind. Some reflections demonstrate student's development and insight into the complexity of issues presented. Reflections may state the "what, so what or now what" in relation to contents. Some connections with self and others.	Very little evidence, why content is choosen the reflections are too general and don't make an attempt to exolain complexity of issues presented.	Did not show any reflective statements

Methodology

- 30 students from an undergraduate course **BSc Exercise and Health**

- A wearable device (AT)is used over a period of five months, reflects weekly on emerging personal data, documents their thinking and action in the ePortfolio, and engages in discussion.

ePortfolio – added value?

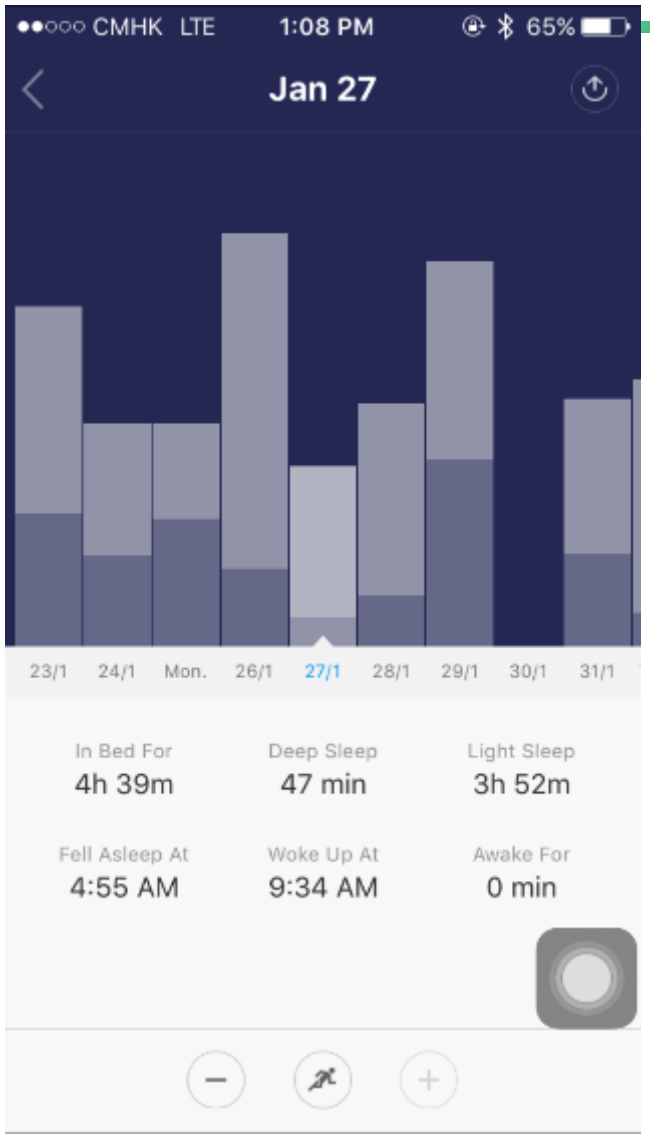
- **Critical reflection** on the progress, while the researchers intervene at any time during the participants' postings.
- Archived and organized history of personal and available online information, which allows search, longitudinal reflection shared with peers/tutor.
- **Hypothesis**: Enhancement of critical thinking, raising health related questions - the ePortfolio is a tool for reflective and autonomous learning.

Measures

- Change in **eHealth** at the beginning and end of the intervention: a well-established questionnaire.
- **Qualitative aspects** of students' changes: semi-structured interviews pre and post intervention
- Development of **eHealth literacy**: Interviews and data from reflections
- Informal content analysis (wordle) of students perception of **ePortfolio**

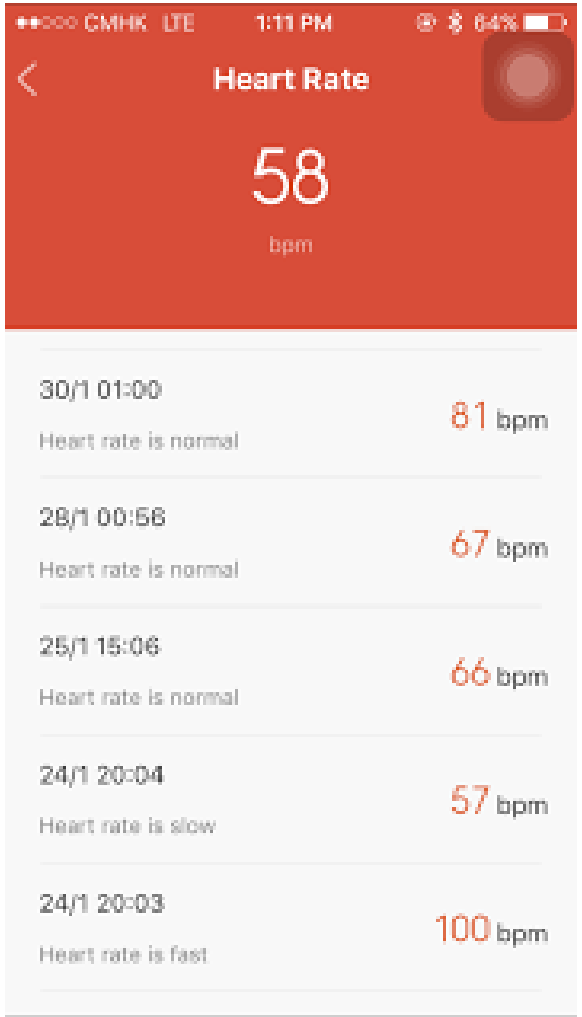
Activity Tracker (AT) Xiao*Mi*

Sleep behavior



Activity / Steps

Heart rate



Reflections

'.... After a week of having the tracker on my wrist, *my personal health awareness has definitely increased*, especially with my sleep routine, Every morning, i automatically check the tracker through the app on my phone to see how many hours of deep sleep I've slept for. Ever since my awareness has increased, i realized that before putting my phone away and going to bed, i think about how i need at least 8 hours of sleep and *increase the amount of time that i have deep sleep compared with the night before*. This may sound like an easy thing to change, i could just sleep earlier to get better results, but this past week made me realize that i need to do extra in order to achieve my goal, such as relax my body and mind before going to sleep, in order to maximize my hours of deep sleep. According to the *article from Psychology Today* based on deep sleep, deep sleep helps "clear the brain for new learning the next day" and helps boost physical and mental health. https://www.psychologytoday.com/blog/sleepless-in-america/201010/the-mysterious-benefits-deep-sleep...'

Reflections

‘The sleeping statistics aroused my curiosity as I did not realise the fact that my deep sleep length is so short. I *wanted to know more about the function of deep sleep* and how it is it different from light sleep. So I visited google and found some results including “sleeping cycles” and how to measure the sleeping cycles accurately. Although the use of tracker may not be a very useful tool to monitor the sleep cycle (should have used other methods such as connecting to an EEG), *I would like to spend more time observing the statistics before I decide to trust the figures or not*.

- The following are some of the websites I visited:
- MiBand’s function:
- Sleep cycles:
- How to measure sleep cycles accurately:

Generally speaking, I consume a lot more high-calorie food than normal in the past week due to the cold weather. Those food are usually of high sugar and lipids such as chocolate. And this is very uncommon in my daily life as I do not usually eat these foods…. ‘

Reflections

‘…I have been trying to improve my resting heart beat to a lower rate and I found programs in my gym's treadmill which will help me achieve this. *After research I found that the best way to do this is through regular cardio* workout (*1)*. This means I will be utilizing the P-8 program at my gym more regularly. When I checked my resting heart beat this week again it was 60 beats per minute and I am looking to decrease this in the near future to an even lower level…

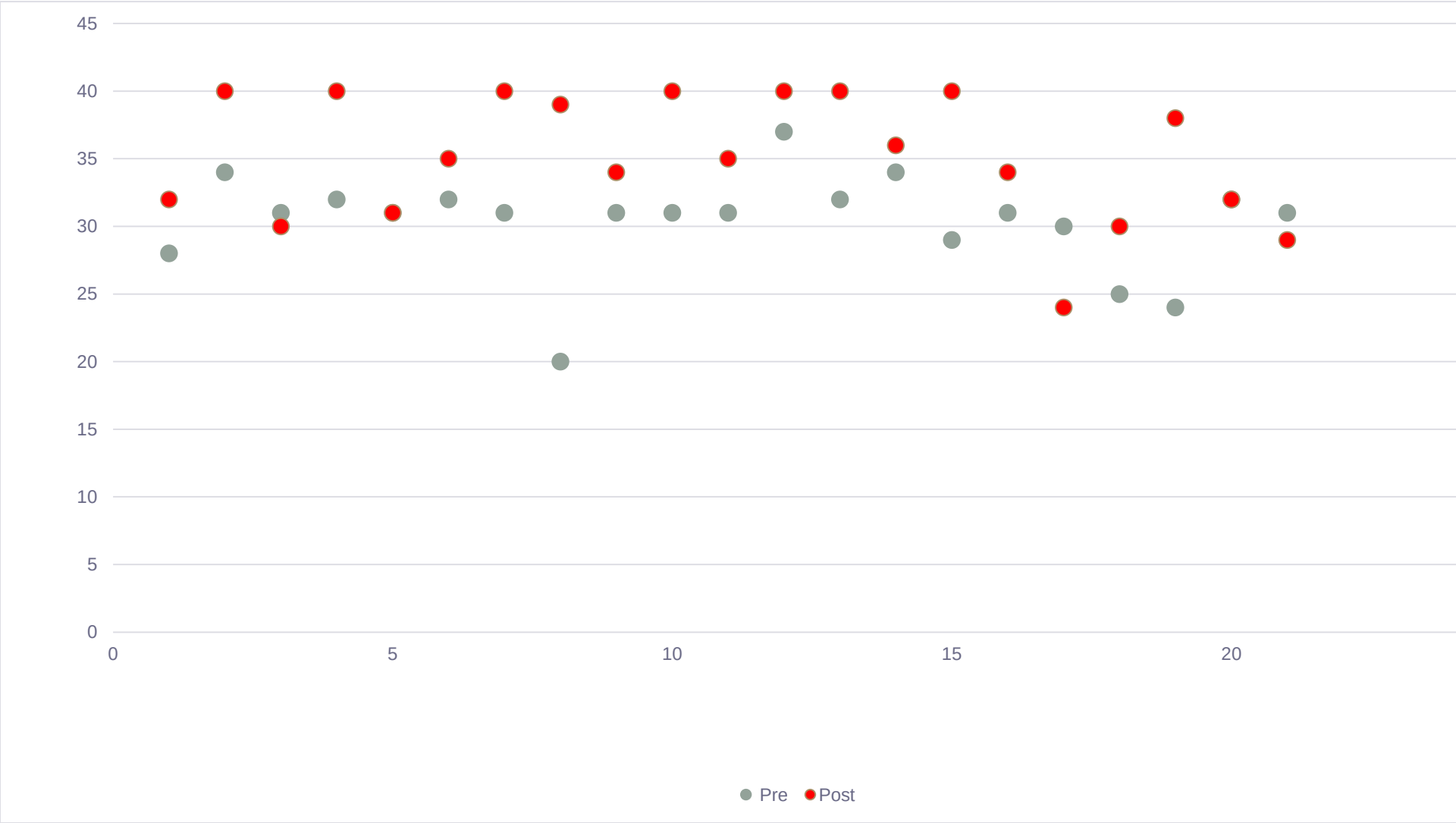
1 - Am. J. Epidemiol. *Resting Heart Rate is a Risk Factor for Cardiovascular and Noncardiovascular Mortality: The Chicago Heart Association Detection Project In Industry.* (1999) 149 (9):853-862. ’

eHealth Questionnaire

- I know what health resources are available on the Internet
- I know where to find helpful health resources on the Internet
- I know how to find helpful health resources on the Internet
- I know how to use the Internet to answer my health questions
- I know how to use the health information I find on the Internet to help me
- I have the skills I need to evaluate the health resources I find on the Internet
- I can tell high-quality from low-quality health resources on the Internet
- I feel confident in using information from the Internet to make health decisions

Norman, 2006

eHEALTH scores pre/post *(p<0.001)*



Change of behavior

March 6th

March 14th

I have discussed the use of Mi Band with my group-mates…When we came to discussing the daily target of Mi Band, they showed determination that they set nearly doubled target around 15,000 steps per day; yet, I just keep the default set-up, which is 8,000 steps

Content quality of ePortfolio: start of semester

Content quality of ePortfolio: middle of semester

Content quality of ePortfolio: end of the course

Expected added value

- Theoretical and practical recommendations for researchers, teachers in higher education to track, support and explore development of new literacies, and in particular, development of **eHealth literacy**.

- Applicability of the **ePortfolio** as a reflective and autonomous learning tool.

Thanks!

ePortfolio team:

Michele (Swiss), Nicky (HK), Emily (HK), Zhen (China), Tim (HK), Alfred (HK), Gavin (NZ), Susan (HKU), David(HK), Daniel (HK),