



ITU KALEIDOSCOPE

NANJING 2017

Challenges for a data-driven society

Socio-Economics and Educational Case Study with Cost-Effective IoT Campus by the use of Wearable, Tablet, Cloud and Open e-Learning Services

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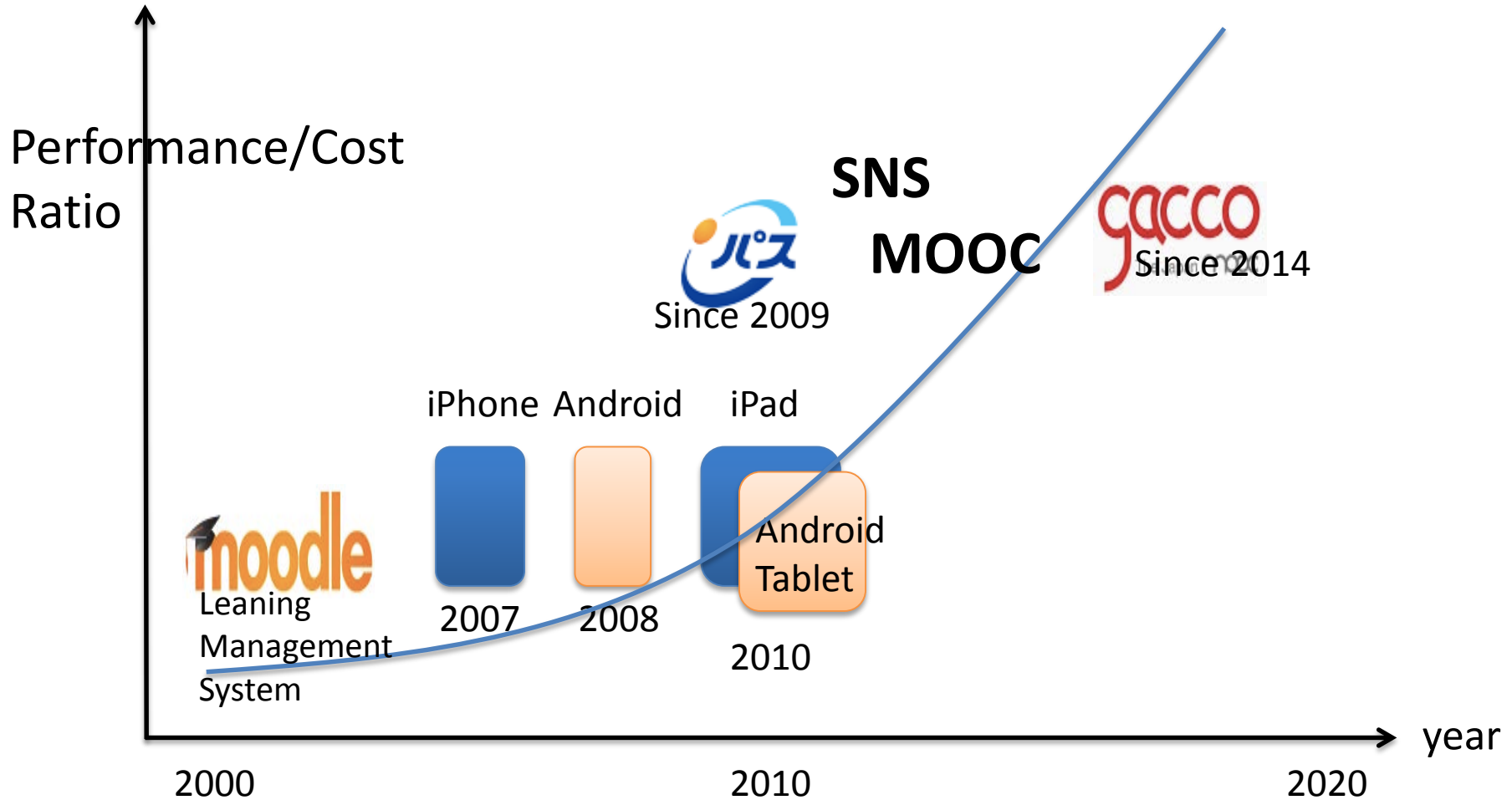




Content

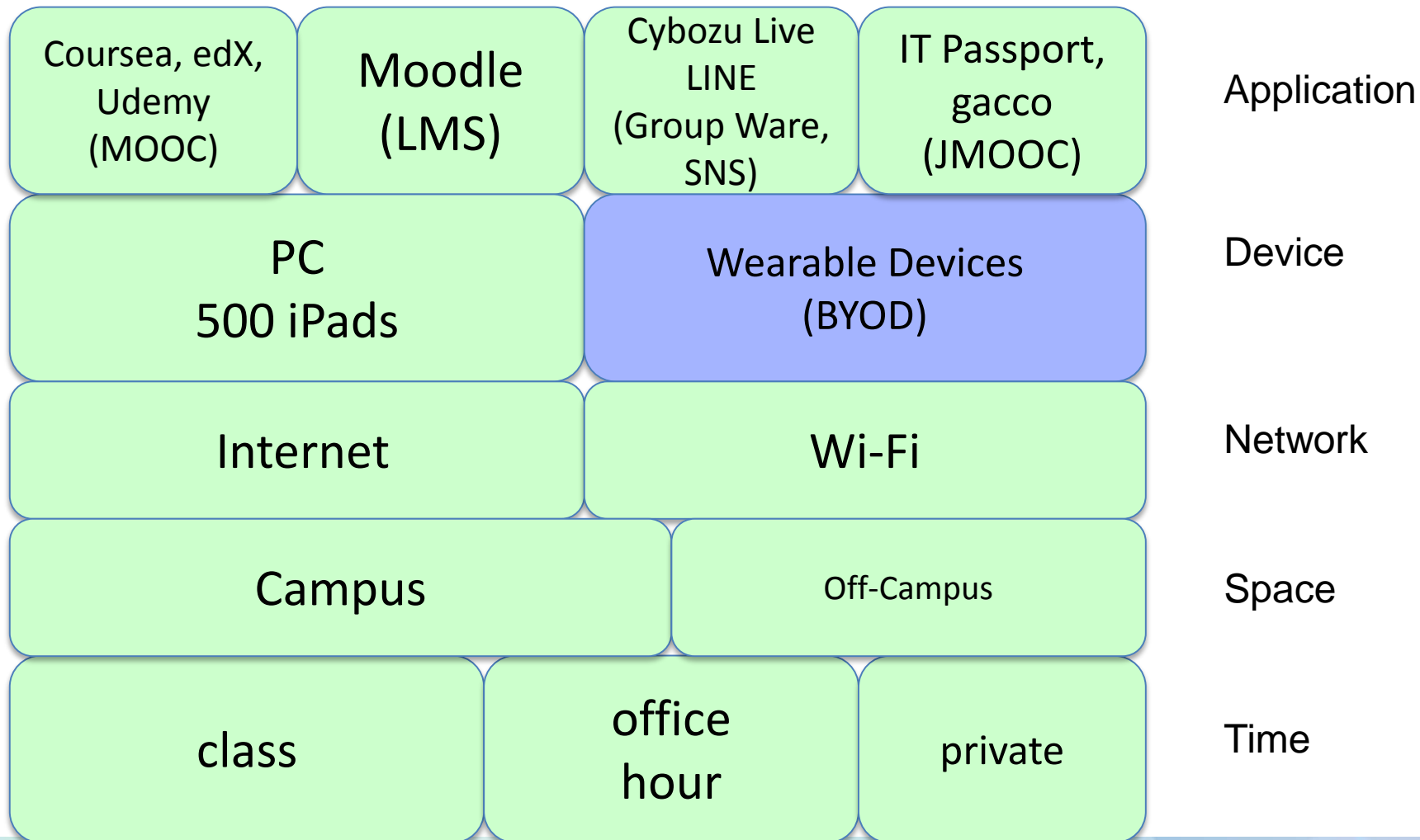
1. Two Implementations of Educational Systems on University Campus
 - Use of Tablet PCs for Over Six Years
 - Use of Wearable Devices for Maintaining Physical Conditions
2. Conclusion for ITU Standards on Education

Moor's Law on Campus and Open Applications



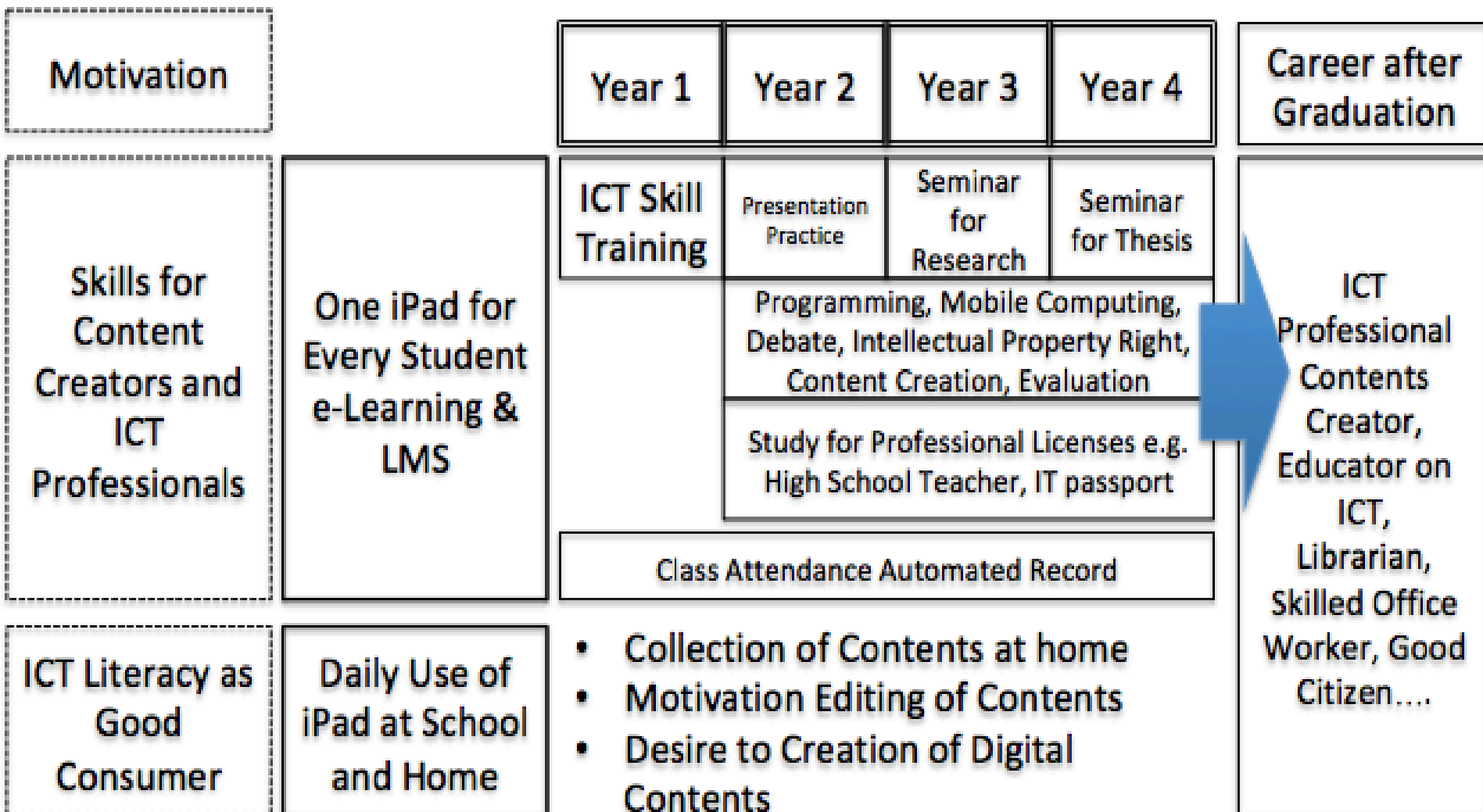


ICT Environments on Campus





ICT Curriculum Reform

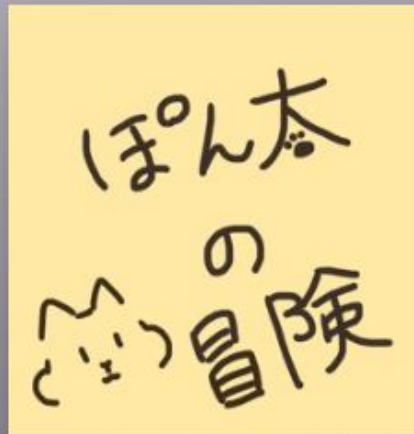




すべてのブック ▾

選択

🔍 検索





ITパスポート 試験情報&徹底解説

ITパスポート試験ドットコム

http://www.itpassportsiken.com/

Google カス



ITパスポートとは

過去問題解説

過去問道場

HOME » ITパスポート過去問道場

▶ ITパスポート過去問道場

学習履歴

過去問道場

「ITパスポート試験過去問道場」は、これまでに出题されたITパスポート試験過去問題(1600問)の中からランダムに出题するWebアプリです。

すべての回を一巡してしまった人も、正解率100%を目指して挑戦してみてください。

[過去問道場の利用方法](#)

出題設定

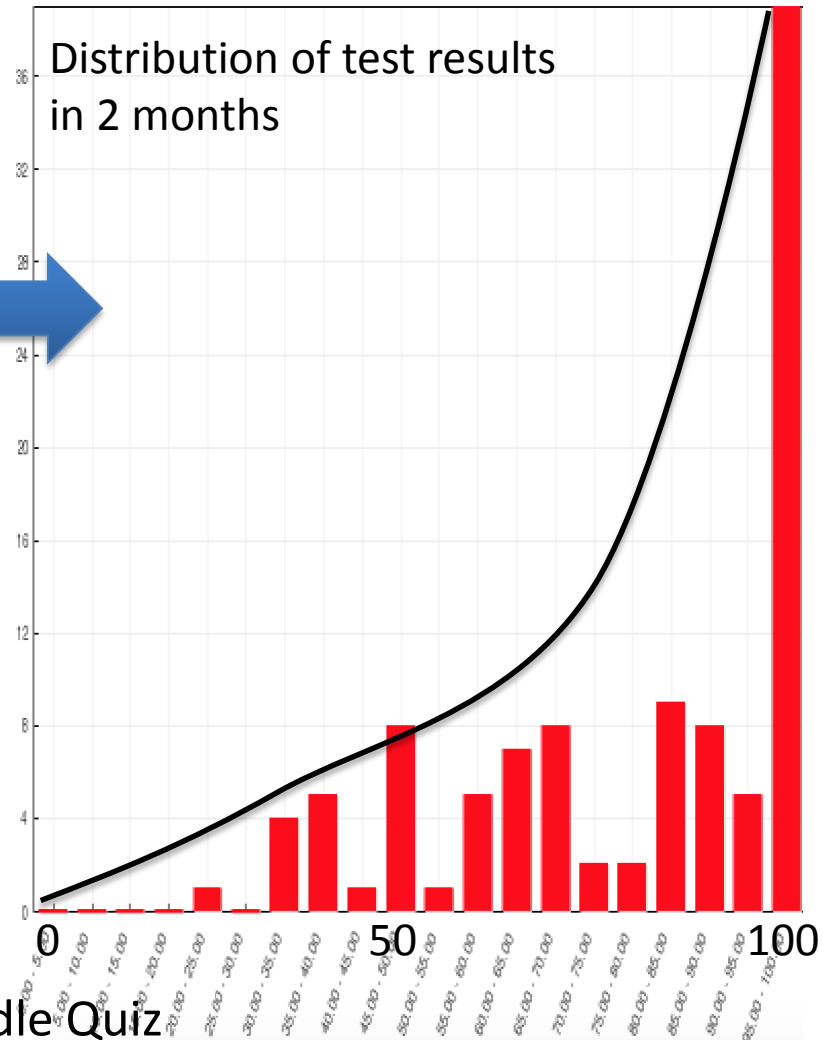
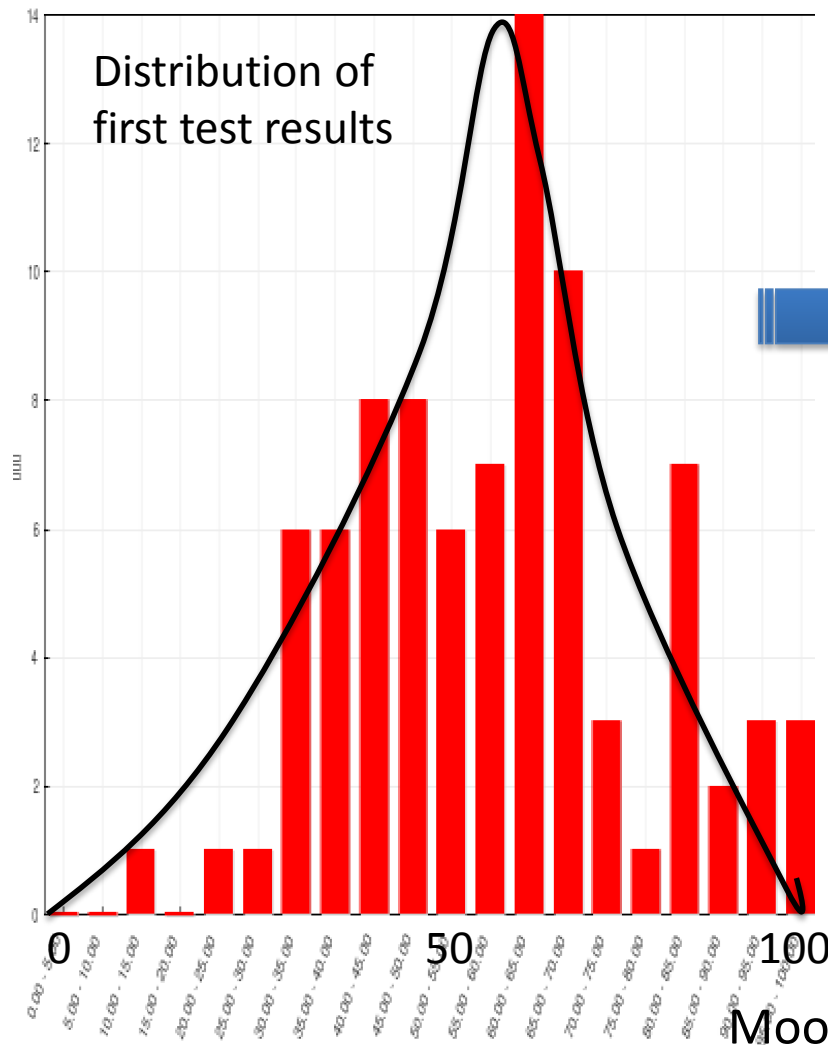
1. 試験回を指定して出題

- | | | | | |
|---|---|---|---|---|
| <input checked="" type="checkbox"/> 29年秋期 | <input checked="" type="checkbox"/> 29年春期 | <input checked="" type="checkbox"/> 28年秋期 | <input checked="" type="checkbox"/> 28年春期 | <input checked="" type="checkbox"/> 27年秋期 |
| <input checked="" type="checkbox"/> 27年春期 | <input checked="" type="checkbox"/> 26年秋期 | <input checked="" type="checkbox"/> 26年春期 | <input checked="" type="checkbox"/> 25年秋期 | <input checked="" type="checkbox"/> 25年春期 |
| <input checked="" type="checkbox"/> 24年秋期 | <input checked="" type="checkbox"/> 24年春期 | <input checked="" type="checkbox"/> 23年秋期 | <input checked="" type="checkbox"/> 23年特別 | <input checked="" type="checkbox"/> 22年秋期 |
| <input checked="" type="checkbox"/> 22年春期 | <input checked="" type="checkbox"/> 21年秋期 | <input checked="" type="checkbox"/> 21年春期 | | |

全項目チェック

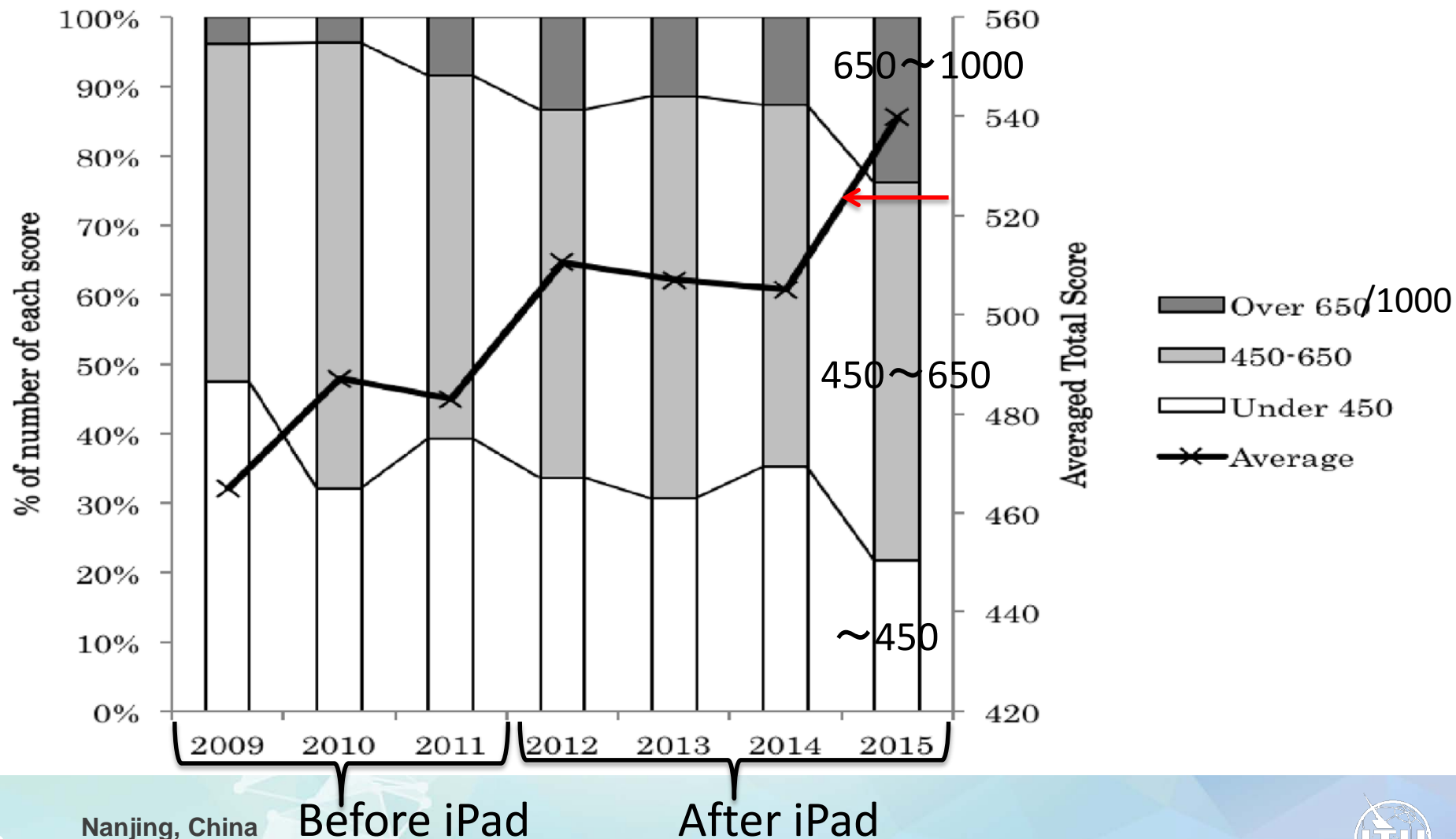


Change of Distribution



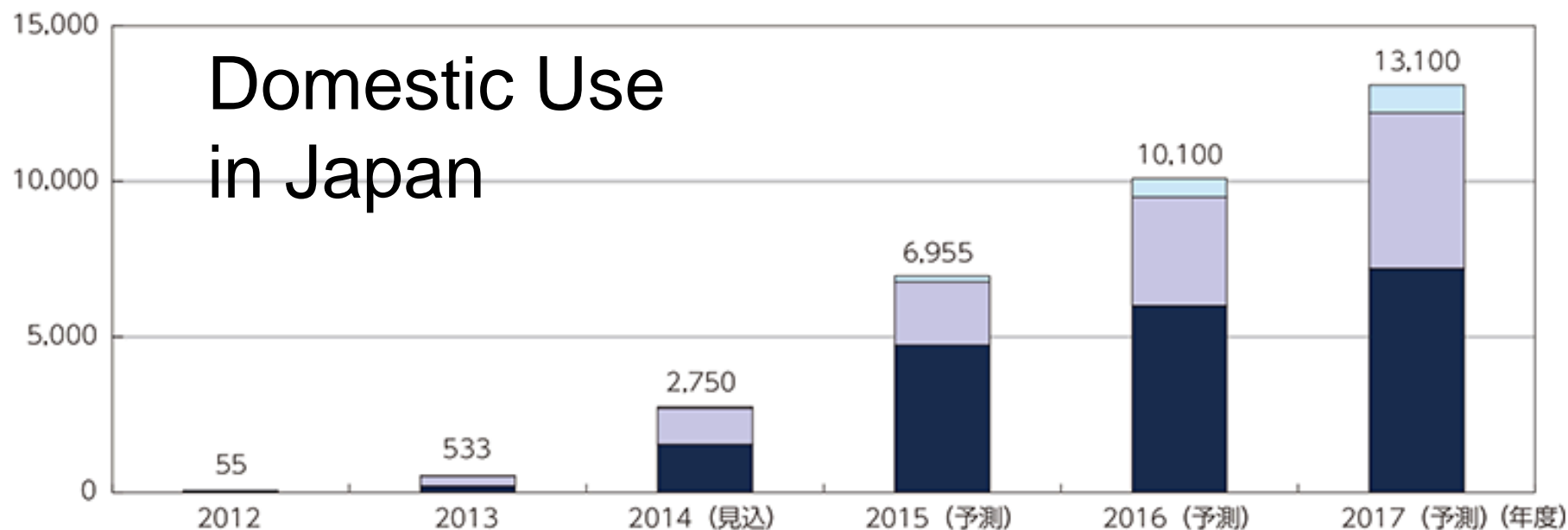
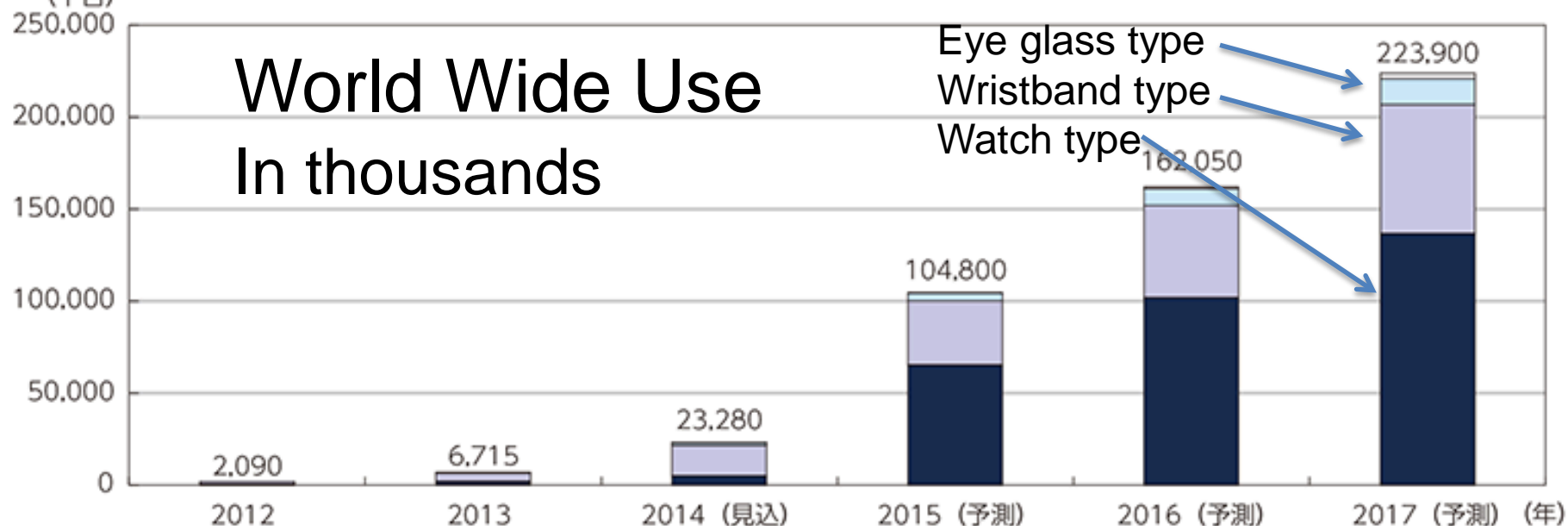


IT Test Results



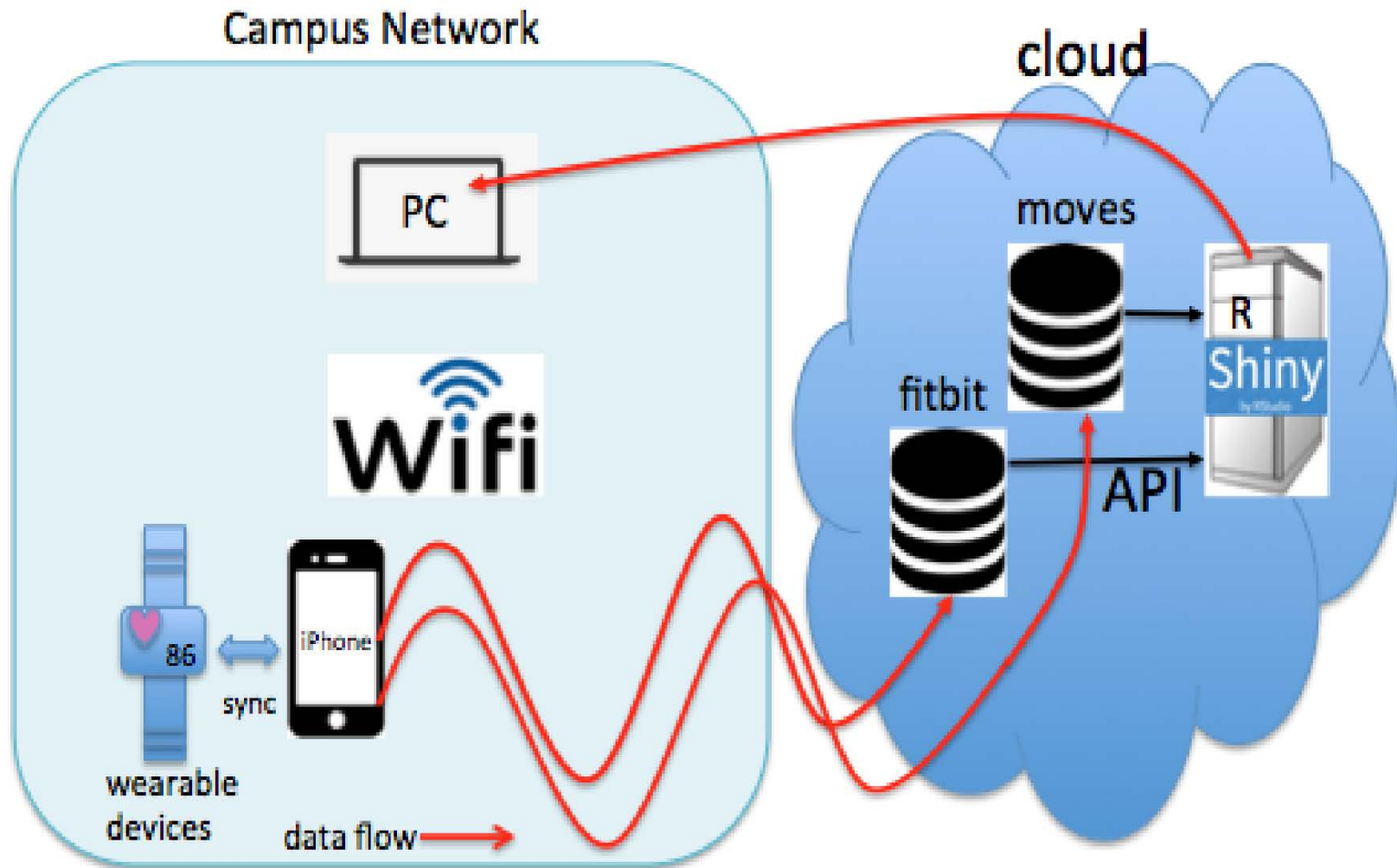


The Use of Wearable Devices





Health Support System for Sharing Vital Data and Life Log





Web Application Using R Shiny Server

Vital data from fitbit and moves

participants: fitmove team
2016B

- ☐ No. 01
- ☐ No. 02
- ☐ No. 03
- ☐ No. 04
- ☒ No. 05

vital data

- ☒ heart_rate
- ☐ walking_steps
- ☐ sleeping_hours
- ☐ moves
- ☐ sd/mean_analysis

beat difference or analysis period



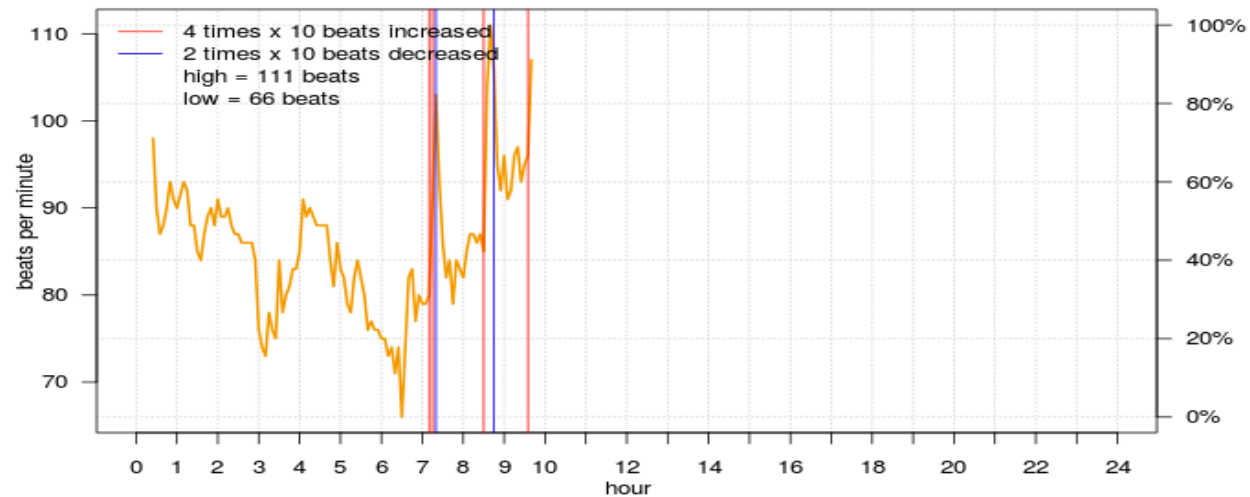
weeks for walking_steps and sleeping_hours

- ☐ 1
- ☒ 2
- ☐ 3
- ☐ 4

date

2017-03-03

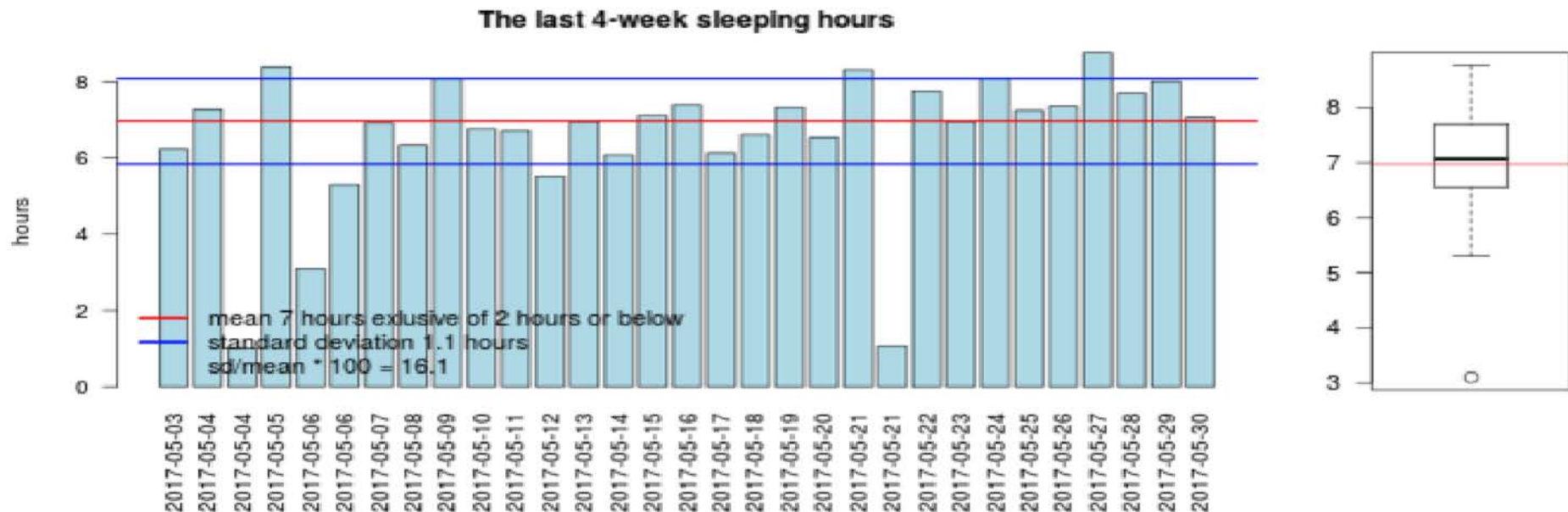
The heart rate on 2017-03-03



	One day	startTime	endTime
1	walking	20170303T002912+0900	20170303T002935+0900
2	walking	20170303T071555+0900	20170303T071603+0900
3	walking	20170303T091301+0900	20170303T091305+0900



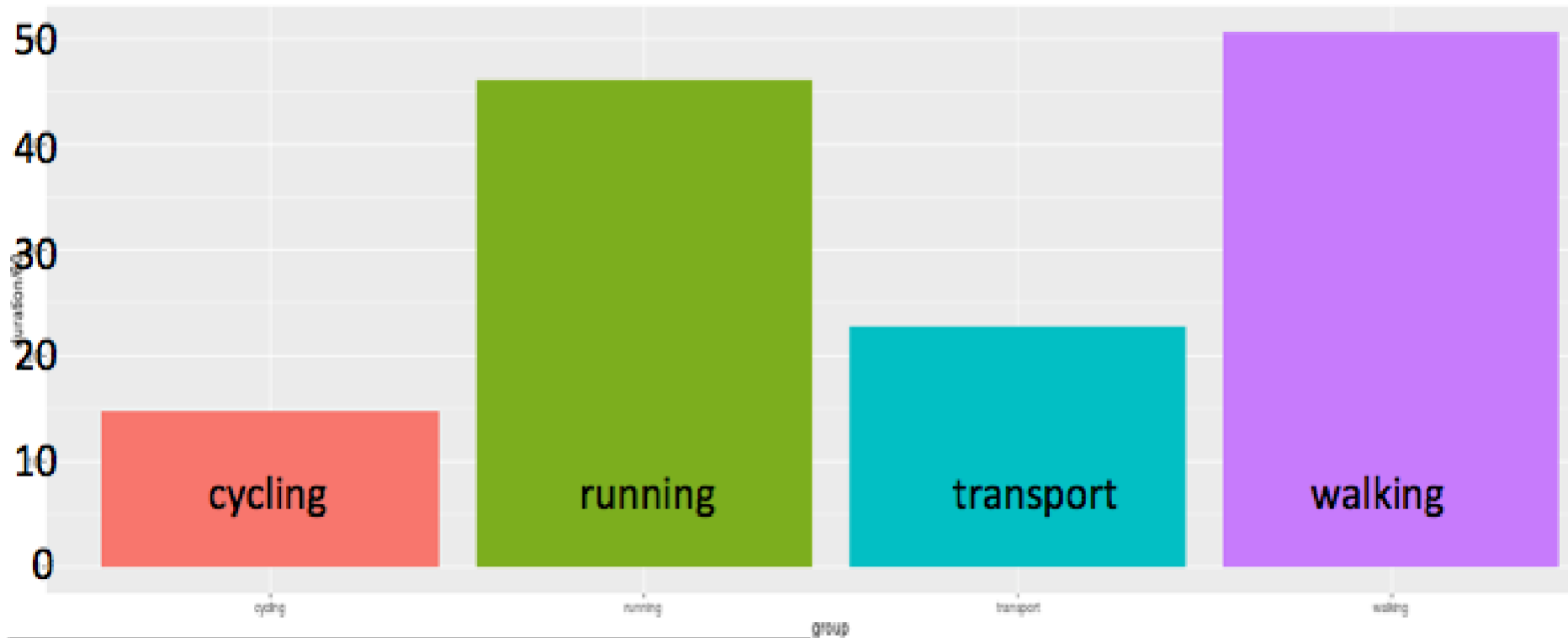
Four-week Walking Steps and Sleeping Hours





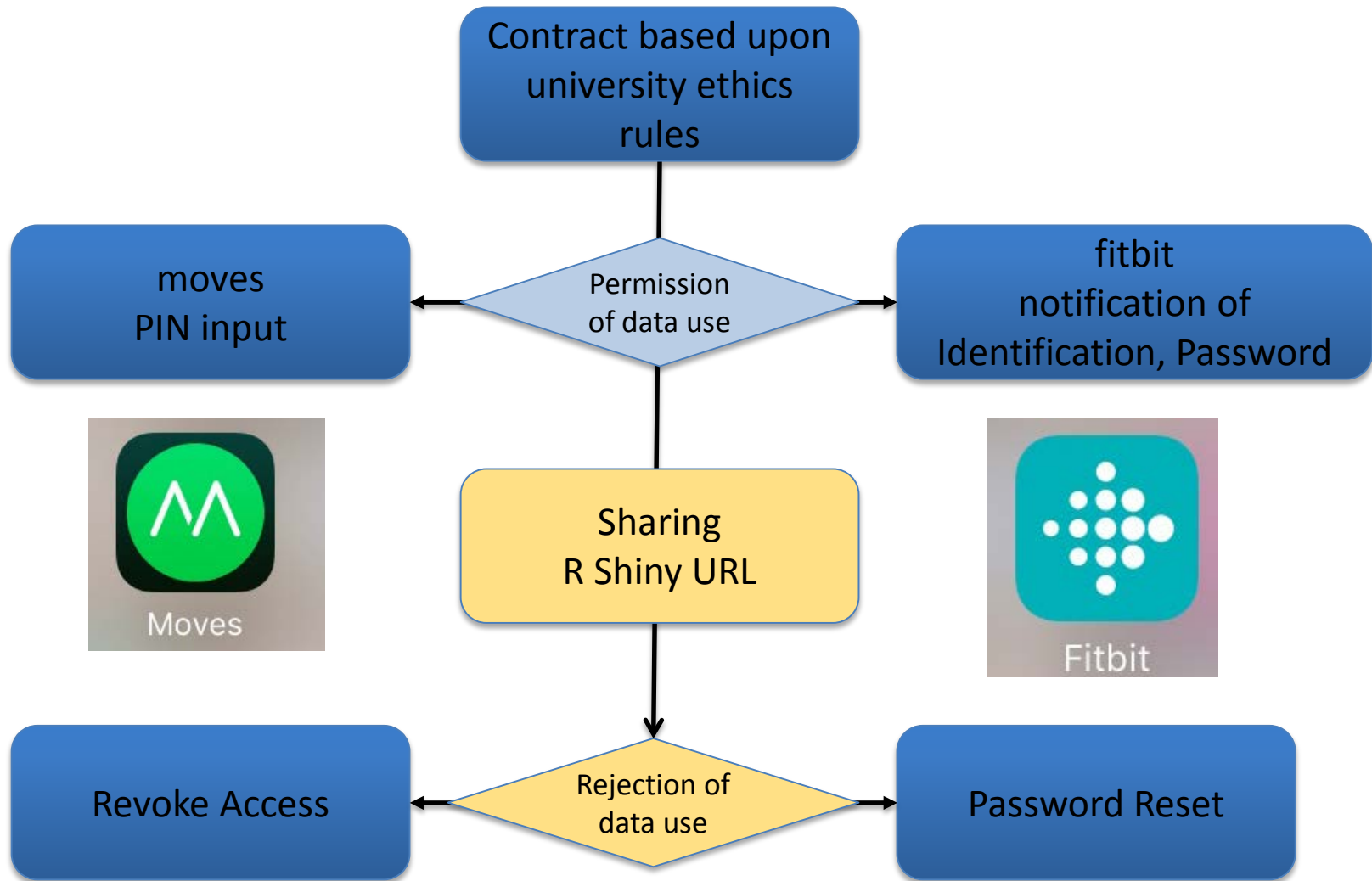
Life Log

duration in minutes



	One day	Duration(sec.)	Distance(m)
1	walking	3032.0	3344.0
2	cycling	887.0	2793.0
3	transport	1359.0	3806.0
4	running	2762.0	5739.0

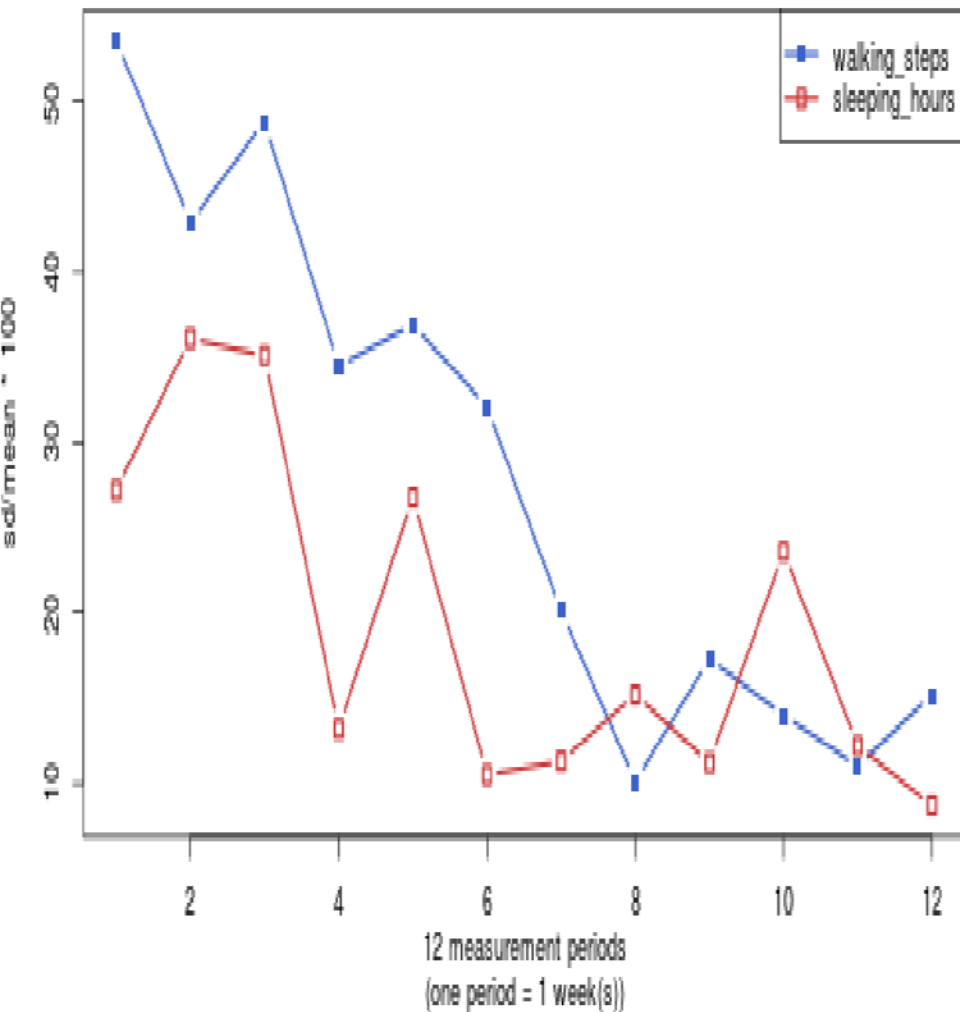
Contract with Students Data Sharing



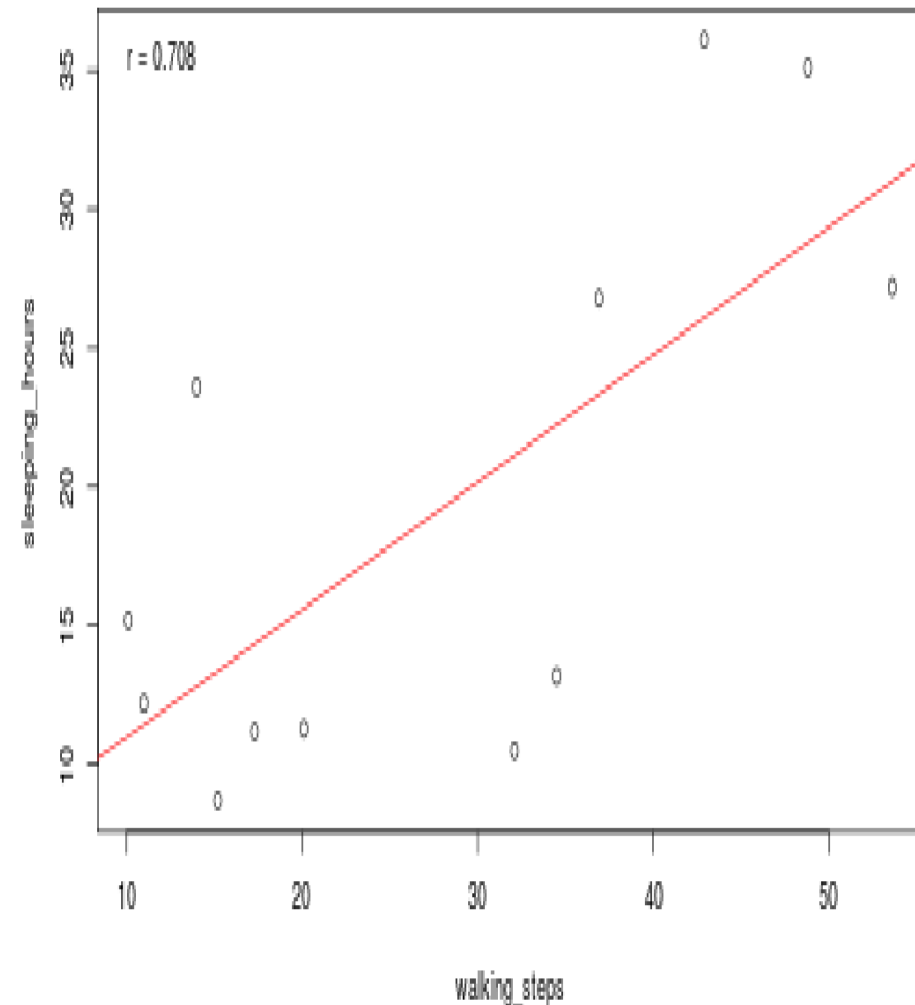


Success Case of Daily Activity Pattern

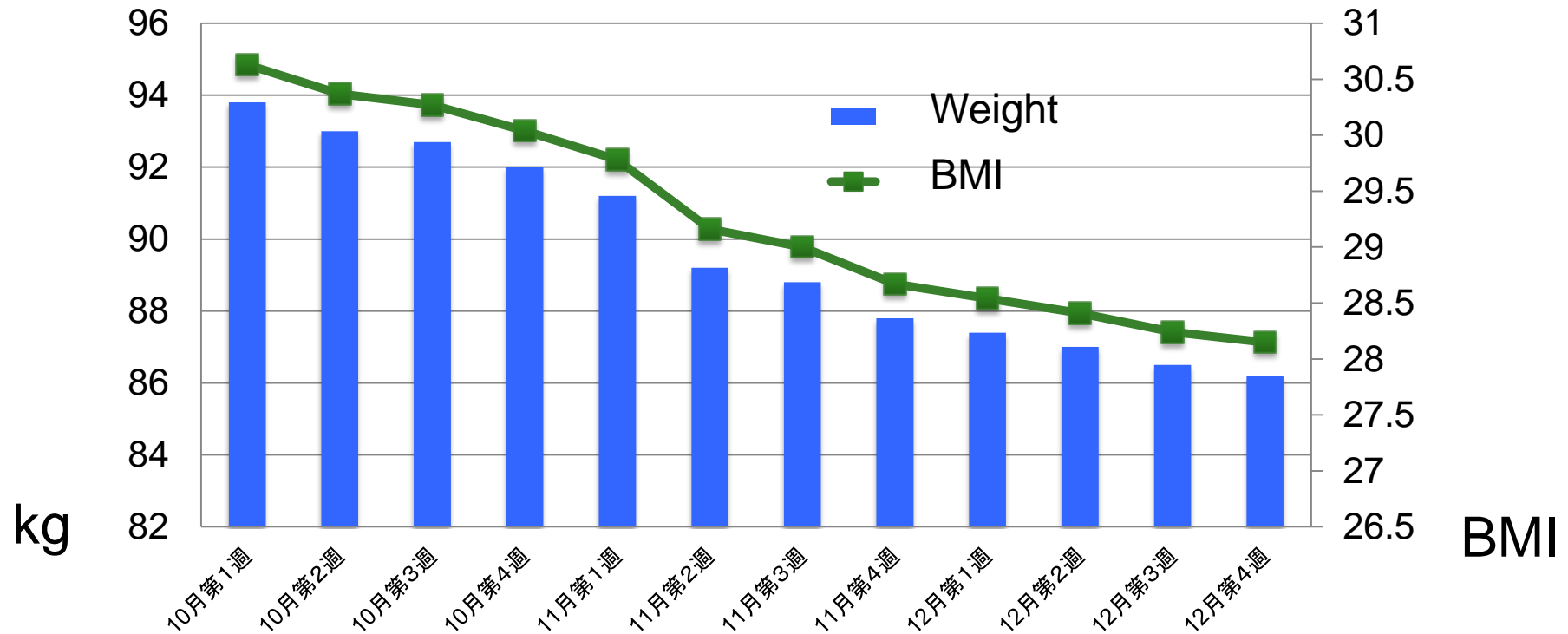
sd/mean x 100 transition
from 2016-10-09 to 2016-12-31



correlation between
walking and sleeping



Decreases of Weight and BMI October to December 2016



1. Motivation was kept by data visualization.
2. Walking steps increased.
3. Educator's advice worked to maintain the motivation.
4. Student checked BMI constantly.

Analysis of the Success Case (ARCS)

(Attention) Use of a wearable devices for data visualization
(Relevance) Inherent necessity of improving BMI
(Confidence) Recognition of effectiveness
(Satisfaction) Improved fitness with peer support

- One of three students has succeeded.
- Student engagement in health consciousness as basis for achieving productive study.
- The use of wearables improves student engagement with possible enhancement with shared data.



Conclusion (1)

- Need for Standards in reference to Fundamental Requirements for Applications, as well as ICT Devices and Services for Learning on Campus
 - ISO standards
 - 9000 quality management
 - 27000 security management
 - Lower costs
 - Increase quality
 - Openness to Technology
 - Application
 - PC, Tablet PC and Smartphone
 - Cloud service



Conclusion (2)

- Worldwide Framework on the Proliferation of Good Practice in Education
- ITU's Educational Initiative for Every Student to Take Quality Education in a Cost-Effective Manner
- ITU Standards on Guidelines on the use of ICT Devices and Open Content on Cloud for Education