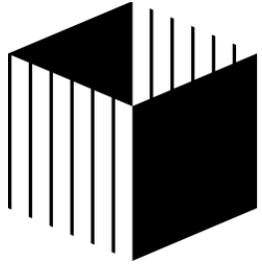


# A Practice of Flipped Learning in Programming Education with Sakai

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k i b a c o

## Standard e-Learning system (LMS) in Tokyo Metropolitan University

- Launched at Feb 26, 2015
- Based on Sakai 2.7.1

## Integrated with some university-wide ICT systems for students and faculty members

- Average monthly active users: 5,500/month
- The total numbers of yearly login users: About 1,000,000

“kibaco” means “wooden box”

# Outline of Flipped Classroom Practice

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The target subject is "Practice of Information Literacy 2B"

- An elective and practical training subject in all faculties
- The target of the subject is to learn basic knowledge of computer science and programming and work on resolve problems of mathematical sciences.
- Some students who have never learned programming take this subject.

There are some problems to conduct the class.

- Need more time to practice programming in class
- Differences in knowledge and ability on programming among learners are quite intense.

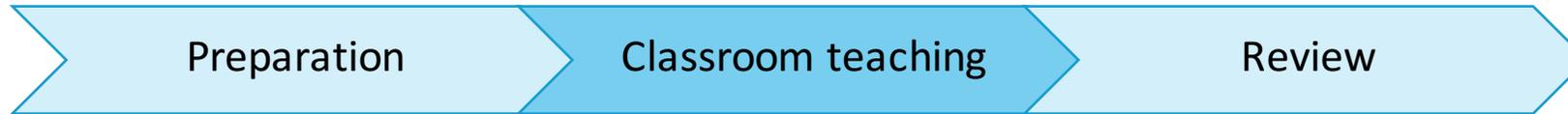
Kibaco has a streaming service using Mediasite® Video Cloud Platform.

- Works as a function of kibaco

# Difference of Teaching Style

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## Traditional classroom



Lecture, Work

Review

## Flipped classroom



Lecture

Work

Review

Teacher prepare lecture videos and assignments one week before.

# Make Flipped Classroom Effectively

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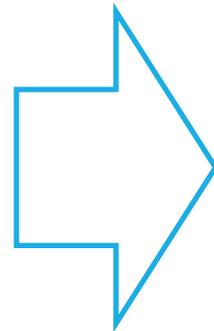
Instruct students to work on the assignment after watching lecture videos one week before

- The content of the preparation needs to be reflected lecture in the classroom in order to maintain the motivation for the learner's preparation.



Learner

- See videos
- Submit assignment



Sakai

LTI Tool

Assignment



Video player

mediasite®

# Browsing Video from Sakai

Using Mediasite® Video Cloud as centrally manage video distribution

- Learners launch a video player through LTI from kibaco.



kibaco

マイページ 情報リテラシー実践II B 情報リテラシー実践II C 情報リテラシー実践II C tutor連絡

ホーム 授業情報

お知らせ オプション

資料

コースウェア

**予習動画**

課題

テスト/アンケート

授業情報

名簿

成績簿

利用ガイド

ログインについて

首都大学東京

学術情報基盤センター

TMUNER

e-Learning 総合案内

サポート(自動応答)

お知らせ (最近 30 日間のお知らせです)

現在のお知らせはありません。

授業関係のお知らせ

お知らせ (最近 30 日間のお知らせです)

現在のお知らせはありません。

授業開始時に自分の大福帳を持っていってください

- 授業中に自由に書いてください
  - 自分にとっての重要なポイント
  - 質問
  - 授業に対する要望
- 返事が欲しい場合は「返事が欲しい」旨明記してください
- 授業終了後、教員卓に提出してください

出度確認おねがいしますの授業お知らせのよう注意書きがたい

## 入力値に応じた条件文

- 条件が成り立つときだけ、続くブロックの処理を実行する

例) 入力された数字が正の数かを判断する

```
ソースコード
```

```
value = input("Please input value: ")  
if int(value) > 0 :  
    print(value + " is a positive number.")
```

入力値は str 型なので変換してから比較する

実行結果 (正の数の場合)

```
Please input value: 5  
5 is a positive number.
```

実行結果 (正の数以外の場合)

```
Please input value: -5
```

入力後、何も表示されずにプログラムが終了する

値を入力

入力値が正

NO

YES

正の数と表示

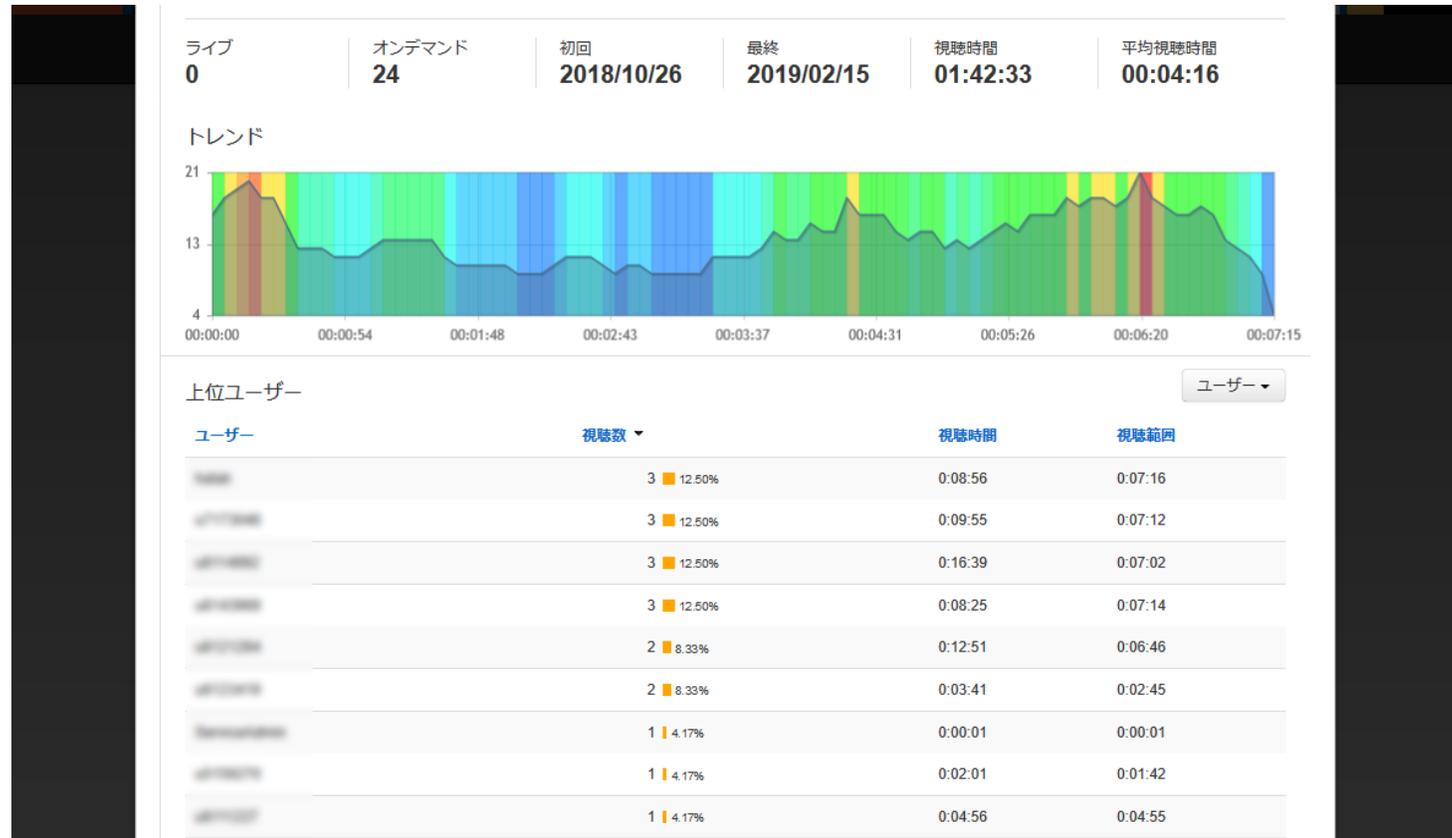
終了

情報リテラシー実践2B

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# Analysis of Viewing History



# Results

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A Flipped classroom using Kibaco with Mediasite® supported individual learning and ensure sufficient times for learning.

- Learners especially beginner views the videos repeatedly.
- Especially, the videos that describe using software was seen again and again.

Video player has used as a partial function of kibaco.

- Users use video player without being conscious that these systems are separated.