

Just-in-Time Teaching

Jens Lechtenbörger

Computer Structures and Operating Systems 2019

1 Motivation

1.1 Initial Problem and Improvement

- 2016: Classroom response system revealed lack of student understanding
 - Yet, no in-class discussions, leaving me frustrated
 - * Waste of our time
- After introduction of JiTT: Situation improved

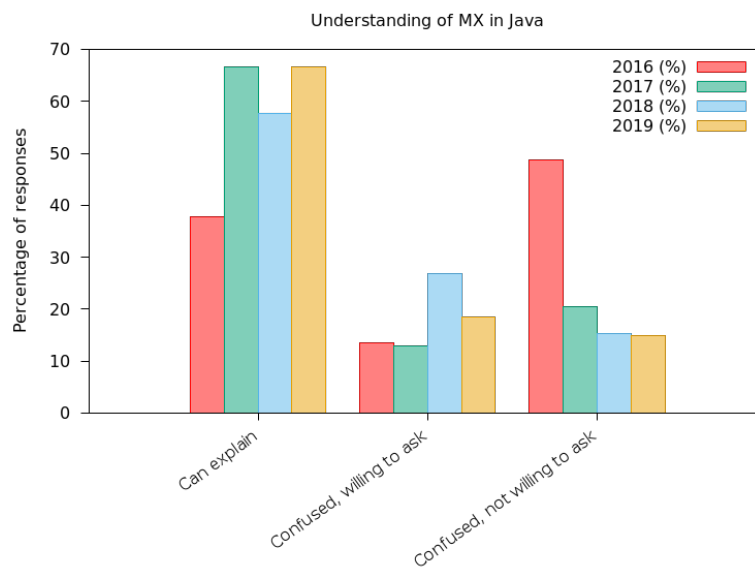


Figure 1: Improved Java MX understanding

1.2 General Improvements

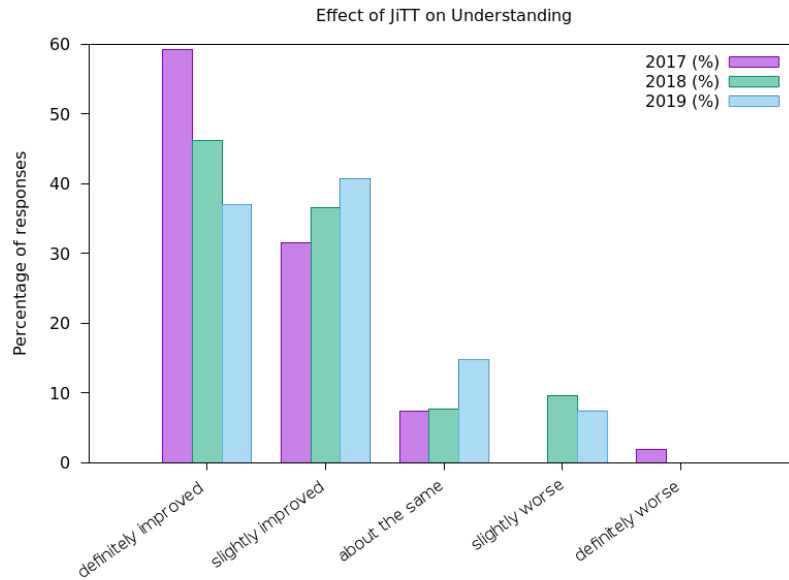


Figure 2: Improved understanding compared with traditional lecturing

2 Just-In-Time Teaching (JiTT)

2.1 Overview

- Teaching and learning strategy based on web-based study assignments (self-learning) and active learner classroom
 - See <https://jittdl.physics.iupui.edu/jitt/what.html>
 - [MSN16] demonstrates impact for statistics courses

2.2 Feedback Cycles with JiTT

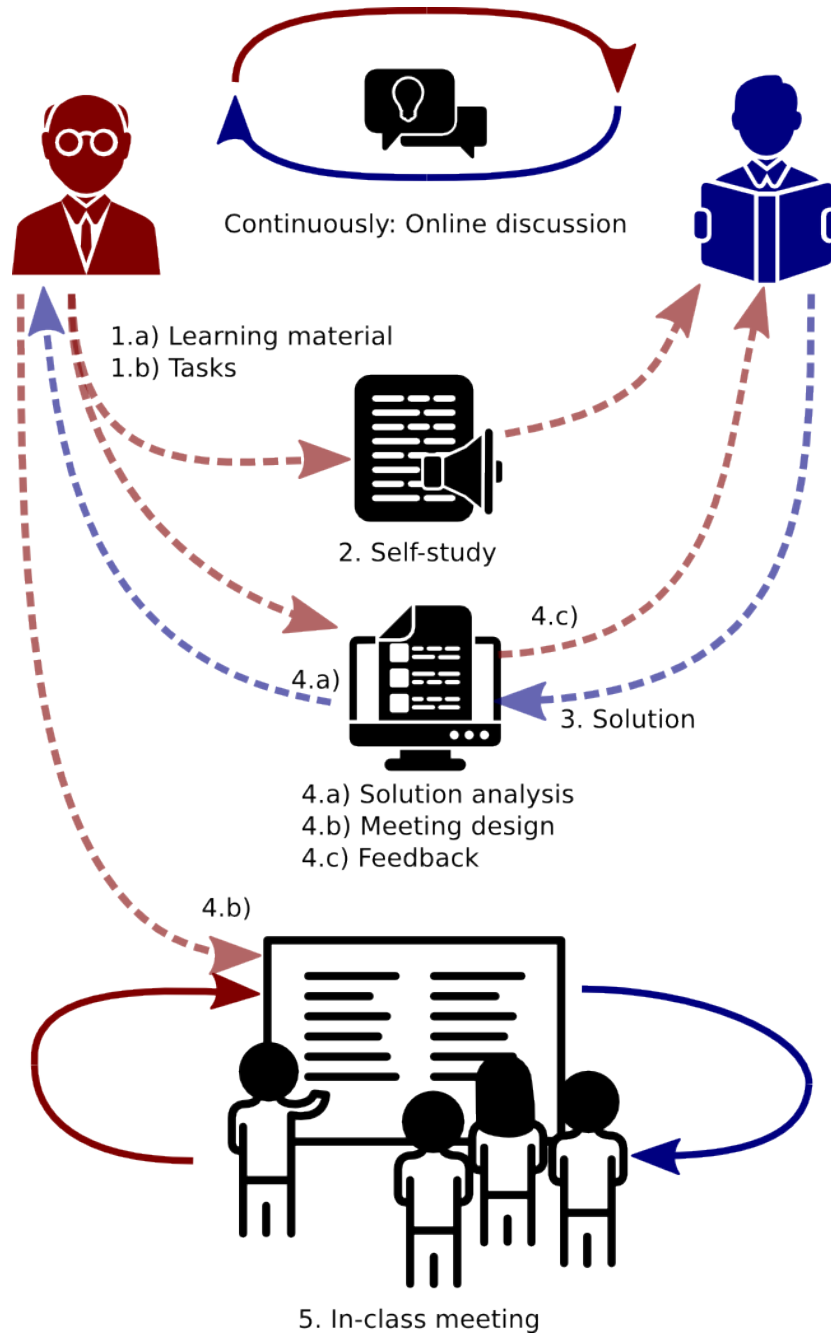


Figure 3: “Feedback cycles with JiTT” by Jens Lechtenböcker under CC BY-SA 4.0; from GitLab. Includes icons by The Noun Project under CC BY 3.0 US: Meeting by Ainsley Wagoner; knowledge sharing, professor, student, audio lesson, online task, online communication by ProSymbols.

2.3 Benefits

- **Feedback loop:** Your out-of-class preparations affect in-class meetings
- More **structure** for out-of-class learning
 - Content and questions, to be tackled at individual learning pace
- Better preparation of in-class meetings
 - Identification and correction of misconceptions/misunderstandings/incorrect prior beliefs
- Valuable **shared** time is used more **effectively** for student-instructor interactions
 - Traditionally, you figure out what's complicated when you are on your own
 - Now, we discuss once you found out what's complicated

3 JiTT Organization

3.1 JiTT Assignments

- Upcoming presentations will contain assignments to be submitted by you via [Learnweb](#)
 - Tickets to exam
 - * Usual deadlines before class
 - But also voluntary assignments with earlier deadlines
 - * **Mondays at 10pm**
 - * **Thursdays at 10am**
 - * Giving us some time to check solutions ahead of class meetings
 - * Voluntary assignments serve as formative assessment; points without impact on grading
 - * Voluntary assignments include one task to solicit questions/comments
 - Next slide

3.2 How to obtain Feedback?

- Each JiTT assignments ends with this task:
 - What did you find difficult or confusing about the **contents** of the presentation? Please be as specific as possible. For example, you could describe your current understanding (which might allow us to identify misunderstandings), ask questions that allow us to help you, or suggest improvements (maybe on [GitLab](#)). You may submit individual questions as response to this task or ask questions in our Riot room and the Learnweb forum. Most questions turn out to be of general interest; please do not hesitate to ask and answer in forum and Riot room. If you created additional original content that might help others (e.g., a new exercise, an experiment, explanations concerning relationships with different courses, ...), please share.

3.3 Asking for Help

- Some students struggle on their own for hours, getting frustrated
 - Asking search engines
 - Consulting YouTube (sometimes with faulty explanations)
- I suggest to ask (and answer) **earlier** and **elsewhere**
 - In person (in class, by appointment)
 - In Learnweb forum
 - Riot room with Etherpad (room’s address in Learnweb)
 - * Riot is a FLOSS messenger, usable with browser and app
 - Communication under pseudonym, to the point, neither greetings nor signatures
 - End-to-end encryption possible, but not enabled in our room
 - Aims to bridge communication silos, thanks to Matrix
 - Functionality similar to Slack/Mattermost
 - * Etherpad is a FLOSS online editor

3.3.1 Past Feedback

- “JiT T destroys our freedom!”
 - Two meetings per week are given, **define** rhythm
 - * You may adopt that rhythm, benefit from my help
 - * Or struggle alone at your own pace
- “JiT T tasks are too difficult/open!”
 - CSOS is worth 9CP, almost a third of term’s workload
 - I do not just want you to remember my steps
 - * I hope to instruct for independent movement in unfamiliar terrain
 - * With challenging (I hope) hurdles and individual feedback
 - Missteps are part of learning
 - I’m here to help (until my holidays start immediately after the last day of the lecture period)
 - If you ask early, you may receive help before deadlines are due
- “JiT T is/was a very good idea and was very helpful to understand the course’s content”

Bibliography

- [MSN16] Monnie McGee, Lynne Stokes, and Pavel Nadolsky. “Just-in-Time Teaching in Statistics Classrooms”. In: *Journal of Statistics Education* 24.1 (2016), pp. 16–26. URL: <https://amstat.tandfonline.com/doi/abs/10.1080/10691898.2016.1158023>.

License Information

This document is part of an Open Educational Resource (OER) course on Operating Systems. Source code and source files are available on GitLab under free licenses.

Except where otherwise noted, this work, “Just-in-Time Teaching”, is © 2017, 2018, 2019 by Jens Lechtenbörger, published under the Creative Commons license CC BY-SA 4.0.

No warranties are given. The license may not give you all of the permissions necessary for your intended use.

In particular, trademark rights are *not* licensed under this license. Thus, rights concerning third party logos (e.g., on the title slide) and other (trade-) marks (e.g., “Creative Commons” itself) remain with their respective holders.