



Flipped Classroom

A AULA DO AVESSO

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Outline

What is Flipped classroom ?

Flipped classroom as a learning technique

- original idea
- major results
- towards mastery
- flipped classroom in higher education

Flipped classroom implementation requirements

Mixing Flipped classroom with other techniques

Using Flipped Classroom in a Medical School example

- discussion of clinical cases

Flipped classroom is

A **pedagogical model** aimed at **increasing interaction** between students and teachers.

Consists of **swapping activities** between classroom and elsewhere (home).

The **teacher** is no longer the “sage on the stage” and becomes the “guide on the side”.

Materials made available **upfront**:

Readings + Recorded Lectures + Reference Documents

Flipped classroom is

Flipped classroom models utilise existing learning concepts such as:

- Active learning
- Student motivation
- Student engagement
- Hybrid course design



In a Flipped classroom model

Classroom time is **interaction time**.

- Instructional support: teacher-guided group or lab work
- Deepening knowledge: discussions and illustrations of the **concepts**.
- Instant feedback. Providing **individual attention** becomes possible.
- Review activities, enabling students to develop **critical thinking**.

What a good Flipped classroom **leads to**

With the increased level of individual attention, students feel more **motivated** and **engaged** by taking leading roles in the classroom activities.

This shift in attitude pushes students towards higher levels of **responsibility in the learning process**.

What Flipped classroom is **NOT**

Watching videos of long lectures.

Students working without structure.

Replacing teachers with videos.

Students using computers all the time.

Online course delivery.

Students working in isolation.

Original idea

2007-2008 Bergman and Sams in a high school in Colorado

The criticality of scheduled lectures

Teaching is not tailored to students (personalised)

There is no reason not to supply materials in advance

Priority needs to be given to discussions around **concepts**



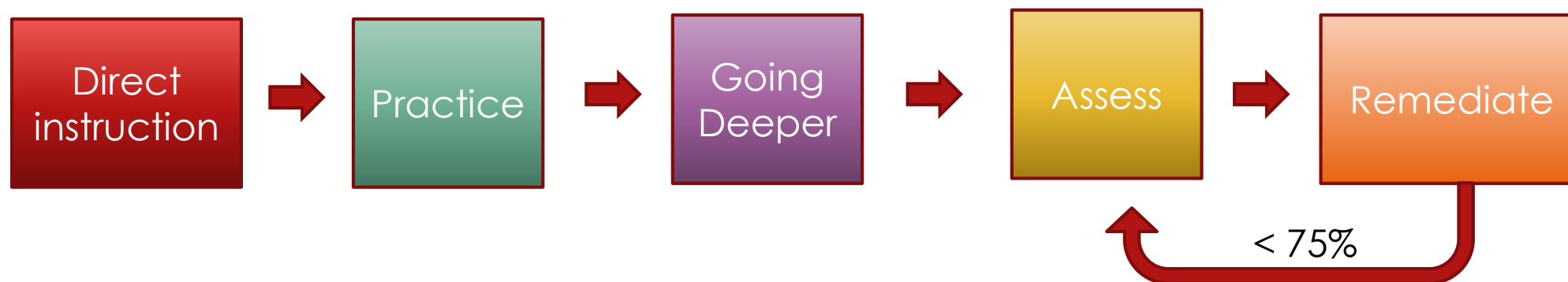
Major results

Measured improvements in

- learning outcomes
- student satisfaction
- use of school resources
- scalability of learning delivery

Towards Learning Mastery

In a flipped classroom, 5 steps, ensuring that the student has learned



Adapted from Bergmann, 2016
<http://www.jonbergmann.com>

Flipped Classroom in Higher Education

Flipped Classroom is directly usable in higher education.

If carefully implemented, it may even be easier (teaching adults).

Specific teaching skills are required (training of teachers), along with correct choices in technology, adoption of common methods, etc.

Guidance, pilot experiments and gradual adoption are advisable.

Flipped classroom requirements

Class size – works best with small groups (<25)

Materials – adoption of rules for their production, uniformity, access

Readiness of instructors – training is required. Propagation within a school.

Design steps that may be difficult

- Breaking down the subject matter in piecemeal chunks
- Incorporating and using assessment
- Matching institutional requirements (conformance)

Mixing Flipped classroom with other techniques

- Distance learning

Can extend the classroom beyond its physical limits, virtual classroom using audio/video.

- e-learning

Interactive tools that can provide the practice component, enabling further “in-class” discussion.

- Instant feedback

Learning Catalytics, Socrative, clickers, no technology voting

Flipped classroom in a Medical School

Example from Porto (FMUP) – Bases Cuidados Geriátricos
(Mixed model with distance learning, typical <20 in class, 100 remote)

Together with a pre-class reading, a pool of clinical cases is made available in the LMS (Moodle) ahead of the class time. Students can pick the cases and volunteer to present them (or be assigned).

From Geriatrics Review Syllabus (8th ed.) American Geriatrics Society)

A session with a hosted video conference (Adobe Connect). A live lecture is transmitted, followed by clinical case presentations (15 min) and a group discussion. Instant feedback.

Final remarks

The Flipped Classroom model can be gradually adopted in higher education

Care should be taken to run pilot experiments first, under adequate guidance

Flawless technical support is needed

A project leading to a pedagogical program is needed

Web Resources

Vanderbilt University Center for Teaching

<https://cft.vanderbilt.edu/guides-sub-pages/flipping-the-classroom/>

Stanford Medicine Interactive Initiatives: Interactive Learning

<http://smili.stanford.edu/interactive-learning/faq.html>

Flipped Learning Network (with how-to's)

<http://flippedlearning.org/>

Educause Learning Initiative (PDF)

7 things you should know about Flipped Classrooms

<http://net.educause.edu/ir/library/pdf/ELI7081.pdf>

Jonathan Bergmann's website <http://www.jonbergmann.com>

Reference Book

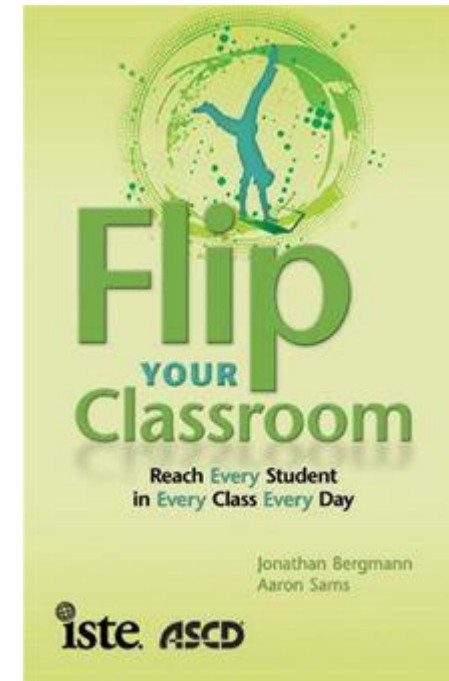
Flip your Classroom

Reach every student in every class every day

by Jonathan Bergman and Aaron Sams

International Society for Technology in Education (Eds.) 2012

ISBN 978-1-56484-351-9



Recent papers

Moraros, J., Islam, A., Yu, S., Banow, R., & Schindelka, B. (2015). Flipping for success: evaluating the effectiveness of a novel teaching approach in a graduate level setting. BMC Medical Education, 15, 27.

<http://doi.org/10.1186/s12909-015-0317-2>

Williams, D. E. (2016). The Future of Medical Education: Flipping the Classroom and Education Technology. The Ochsner Journal, 16(1), 14–15.

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Advances in Physiology Education Published 1 March 2016 Vol. 40 no. 1,
47-55 DOI: 10.1152/advan.00098.2015

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