

**DON'T THROW THE BABY OUT  
WITH THE BATHWATER!**

FLEXING THE LECTURE BEFORE YOU FLIP THE CLASSROOM

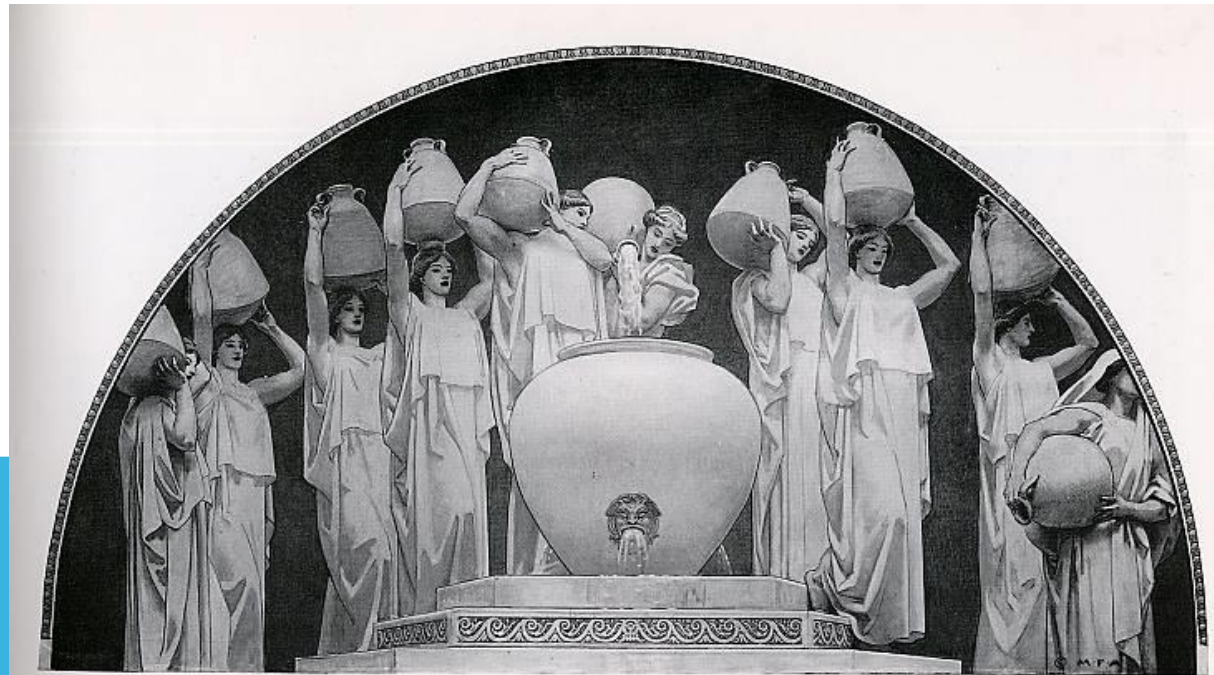
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[dreamstime.com](http://dreamstime.com)

# OLD SCHOOL WAS GOOD SCHOOL: THE IMPORTANCE OF THE LECTURE

A method of teaching that dates back to the Middle Ages, when learning was perceived to be the passive transfer of knowledge from a wise expert to the “empty vessel” that was the student



# **OLD SCHOOL WAS GOOD SCHOOL**

**Some educational purposes are well served by the lecture:**

Clarify difficult concepts

Organize thinking


Promote problem solving

Challenge attitudes

**Lecture is certainly efficient**

**It's hard to argue...because most professors themselves  
learned very well by the lecture method**

- DiLeonardi (2007), p 154





*The mind is not a vessel to be filled,  
but a fire to be kindled*

— Plutarch

# OLD SCHOOL WASN'T PERFECT

Lecture method lacks opportunities for:

- Individual feedback to learners

- Connection with a variety of learning styles

- Active learning

- Independent learning

**“What is urgently needed is an educational program in which students become interested in actively knowing, rather than passively believing”**

**“If you expect students to use knowledge to solve any kind of problems, you must provide them with opportunities to practice the needed skills and receive feedback about their performance.” – Michael (2006), p 159-161**



**Our dilemma is that we hate change and love it  
at the same time; what we really want is for  
things to remain the same, but get better**

**– Sydney J. Harris**



# GOOD NEWS

We can morph the lecture into a more participatory form of learning with the addition of a few tweaks

The proverbial “sage-on-the-stage” can give way to the 21<sup>st</sup>-century instructor

Techniques for more active learning can easily be accommodated within the confines of the sacred 50 minutes

Its all about helping our learners learn more and better AND

I would argue it is also about creating new rewarding experiences for faculty





# NEW SCHOOL

Early ideas come from David A. Kolb, theorist known for his work on organizational behavior and contributions to the theory of learning styles and adult education, what education geeks call “Experiential Learning”

*Kolb: Application through action in a new circumstance within the range of generalization*

- Medical education in a nutshell!



“Experiential learning thus involves a “direct encounter with the phenomena being studied rather than merely thinking about the encounter, or only considering the possibility of doing something about it..“

– <http://infed.org/mobi/david-a-kolb-on-experiential-learning/>

# ACTIVE LEARNING

Active learning doesn't just happen; it occurs in the classroom when a teacher creates a learning environment that makes it more likely to occur

All too often when we go into the classroom to teach, we assume that nothing more than our expert knowledge of the discipline and our accumulated experiences as students and teachers are required to be a competent teacher...the time has come for all of us to practice “evidence-based” teaching

– Michael (2006), p 164-165



# EVIDENCE: NEUROSCIENCE

## *50 minutes isn't really 50 minutes*

Prime Time 1

Minutes 0-20

Prime Time 2

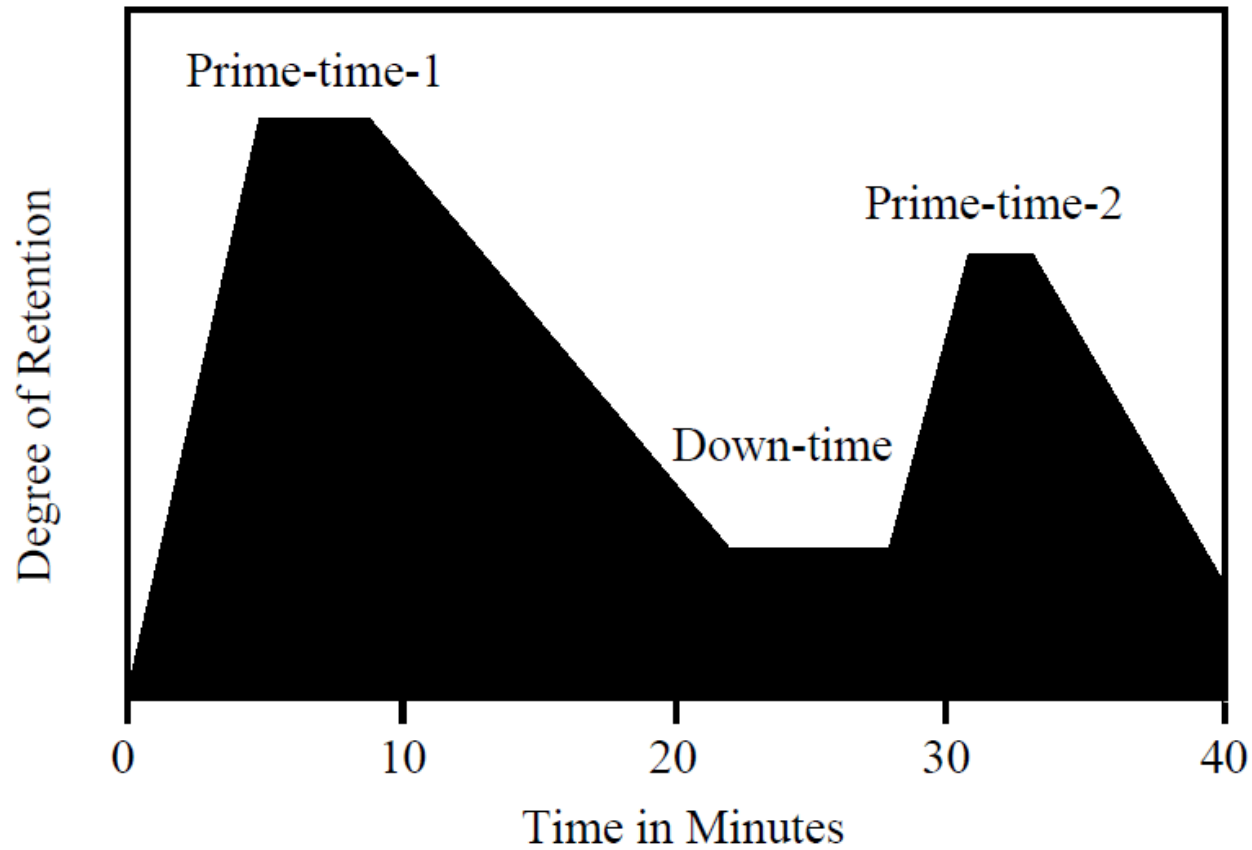
Minutes 40-50

Downtime ☹️

*Everything in between!*

David Sousa, *How the Brain Learns*, 2011

# Retention During a Learning Episode



# NEUROSCIENCE

## Prime Time 1

- New information
- Only correct information
- Build from previous knowledge
- Assessment of knowledge

## Prime Time 2

- Reinforcing knowledge
- Summarizing / Take-home points

## Downtime

- Not so much



# DOWNTIME

Learners need to **USE** the information they were exposed to in Prime Time 1 in order to assimilate it and remember it

Learners need to be **ACTIVELY** engaged in applying the new knowledge in order to process it in a way that will allow them to remember it

Although a lecturer might demonstrate synthesis and evaluation, the learner is unlikely to master these skills without active practice

“The educator can overcome some of the difficulties (inherent in lectures) by introducing interactive windows ...that positively influence recall and learning”

–DiLeonardi (2007), p 155


# ACTIVE LEARNING

By interspersing learning activities within the lecture, teachers can present essential content, synthesized from multiple sources, and also provide for involvement in the learning process

Because students are engaged in the learning process, they are able to assess their own learning needs and take an active role in meeting them

When cases are analyzed in small groups, students become more comfortable in face-to-face communication, learn how to promote their ideas in groups and give feedback to others, and learn about individual and group accountability

– Oermann (2004), p 1-5



# ACTIVE LEARNING

Material not processed through the decision-making functions of the mind is less likely to be recalled after an extended period of time

–Fink quoted in Graffam (2007), p 40

Who are you going to believe, me or your own eyes?

– Groucho Marx





# NEW SCHOOL IS GOOD NEWS TOO

Adding active learning techniques to lectures:


“Encourages intra-group and inter-group problem solving without increasing the number of faculty”

“One of the biggest advantages of this approach is the relatively small amount of faculty time that was needed”



–Stringer (2002), p 101

# DOWNTIME ACTIVITIES = ACTIVE LEARNING

- **Techniques for Discussion**
    - Think – Pair – Share
    - Three-Step Interview
  - **Techniques for Reciprocal Learning**
    - Note-Taking Pairs
    - Jigsaw
  - **Techniques for Problem Solving**
    - Send-A-Problem
    - Case Studies
  - **Techniques for Using Graphic Information Organizers**
    - Concept Mapping
  - **Techniques for Focusing on Writing**
    - One-Minute Paper
- 

# THINK – PAIR - SHARE

Prior to class, instructor develops a thoughtful, engaging question

At the appropriate point in the lecture, poses the question to the class

Give individual learners a moment to consider their own response to the question

Ask each student to pair with another student nearby

Have Student A share his or her response with Student B and vice versa

Students can then present their own or their partner's response to the class



# NOTE-TAKING PAIRS

Students present to lecture and take notes as per usual

Instructor directs students to pair up (either the instructor or the students can decide who will make up each pair)

Partner A begins by summarizing the main points from a section of the lecture content to Student B, who offers corrections and additional information

Partner B summarizes the next section, with Partner A offering corrections/additions

Partners continue alternating sections as above until they finish checking their notes and have compiled a new set of improved notes



# SEND-A-PROBLEM

Instructs students to form groups of two to four ; takes time to describe the activity, gives instructions, and answers questions

Distributes a different problem to each group; asks each group to do the following: discuss the problem, generate possible solutions, choose the best solution, record their conclusions and place their response in a designated folder.

Calls time. Instructs each group to pass their folder to the next group so that each group receives a new folder; *without looking at the previous group's answers*, students again brainstorm responses and record results until time is called; repeat the process as many times as needed

In the final period of time each group reviews the responses to the problem, analyzes, evaluates and synthesizes the information, adding any additional information they wish

The activity concludes with groups reporting out the responses contained in the folder; any additional points can be added by other groups at this time

# JIGSAW

Instructor presents a list of possible topics for developing expertise  
(alternately these topics can be student-generated, as in a review session)

Students form groups charged with developing expertise on a given topic

Students work within these “expert” groups to master the topic. They also explore ways to help others learn the topic including examples, applications, etc...

Then students move from their expert groups to new “jigsaw” groups in which each student serves as the only expert on their specific topic.

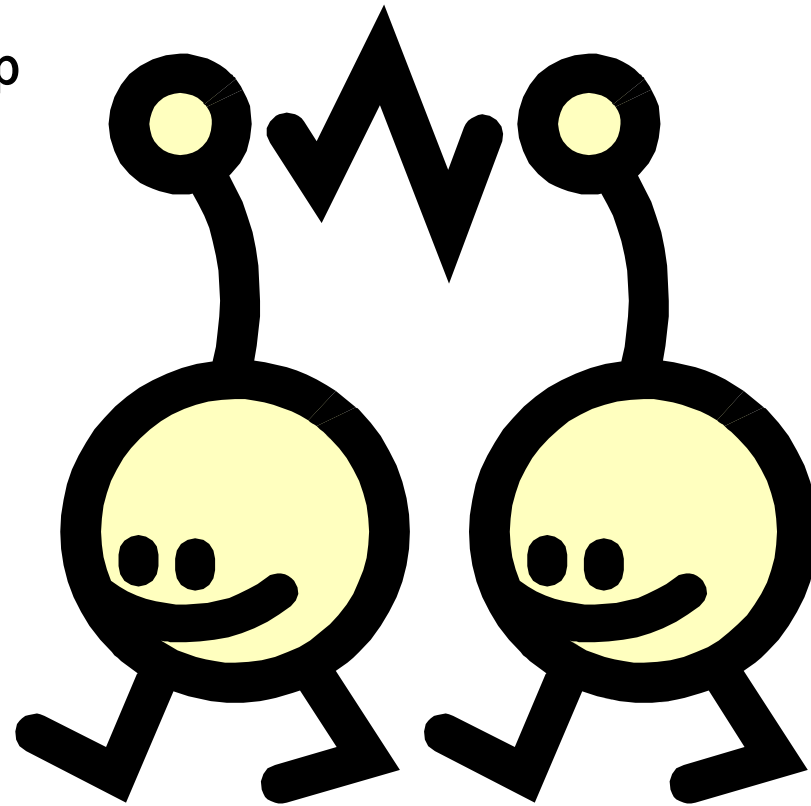
Each student teaches the other group members the material of their specialty; leads the discussion on their area of expertise

Whole class reflects together on group discoveries in a closure activity



# LET'S ACTIVE!

Try out one of the activities with the group



# OTHER METHODS FOR ACTIVE ENGAGEMENT



Demonstration



Hands –on practice



Recess



Case studies



Role plays



Minute paper



Concept map



Online research



YouTube



Ted Talk



Khan Academy



Chunking




# LECTURE+ACTIVE LEARNING TECHNIQUES

An excellent teaching institution stimulates the curiosity of students and leads them to ask themselves questions and to seek the answers themselves

Do (our) students learn *how to learn* during the time they are at the educational facility?

– Hurst (2004), p 1605-1606



# BABIES & BATHWATER

If “losing” 20 minutes of lecture seems daunting, ask yourself “What do I want these students to remember 2 years from now?”

Remind yourself that they weren’t learning 50 minutes of material anyway, despite your best efforts

Respect the lecture by choosing it for the purpose it serves best, incorporating approaches designed to overcome the limitations of one-way communication, stimulating active learning and critical thought, and reflecting critically on your lecturing with a view toward improving

– DiLeonardi (2007), p 161



**They always say time changes things, but  
you actually have to change them yourself**

– Andy Warhol



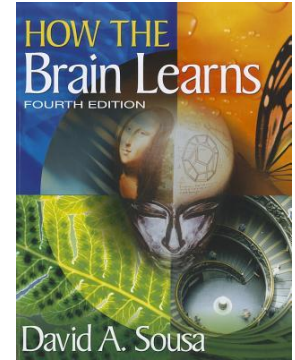
# RESOURCES FOR THE 21<sup>ST</sup> CENTURY

University of Minnesota Center for Teaching and Learning

<http://www1.umn.edu/ohr/teachlearn/>

Teaching and Learning with Technology – Penn State

<http://tlt.psu.edu/>



Infed: Millions of users across the world exploring education, learning and community

<http://infed.org/mobi/david-a-kolb-on-experiential-learning/>

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\*\*Cheerleading video courtesy of Tumbler Teaanddimples



