

Adapting Moodle for teaching EBM

using Team-Based Learning in a large classroom:
a Design and Development Research case study

Piersante Sestini

University of Siena

7th EBHC, 2015



Introduction

The screenshot shows a Facebook page titled "Corsi opzionali". The page header includes the Facebook logo, the name "Corsi opzionali", a search icon, and navigation links for "Piersante" and "Home". Below the header are tabs for "Pagina", "Messaggi", "Notifiche" (with a notification icon), "Insights", "Strumenti di pubblicazione", and "Impostazioni". The main content area features a large historical painting of a medical scene, a profile picture of a man in a white coat, and the text "Corsi opzionali Comunità". Below this are buttons for "Crea invito all'azione", "Mi piace", "Messaggio", and a three-dot menu. At the bottom of the post area are tabs for "Diario", "Informazioni", "Foto", "Persone a cui piace", and "Altro".

- Teaching at the University of Siena School of Medicine for more than 20 yrs
- The workhorse of teaching EBM is **small group PBL**
- An ancient university (1240) with **traditional** faculty and students



Introduction



- Teaching at the University of Siena School of Medicine for more than 20 yrs
- The workhorse of teaching EBM is **small group PBL**
- An ancient university (1240) with **traditional** faculty and students
- Therefore I always had few students interested in EBM, and **PBL wasn't a problem**



Problem/Opportunity

Challenge

- Last year, I was given a 24 hrs course of “Scientific writing” for **160** 5th year students

2/15
MCCXXX

Problem/Opportunity

Challenge

- Last year, I was given a 24 hrs course of “Scientific writing” for **160** 5th year students
- I decided to **sneak in** EBM :-)

2/15
MCCXXX

Problem/Opportunity

Challenge

- Last year, I was given a 24 hrs course of “Scientific writing” for **160** 5th year students
- I decided to **sneak in** EBM :-)
- **PBL was out of question**

2/15
MCCXXX

Problem/Opportunity

Challenge

- Last year, I was given a 24 hrs course of “Scientific writing” for **160** 5th year students
- I decided to **sneak in** EBM :-)
- **PBL was out of question**
- Luckily, I have been a regular attender of the **EBHC conference** for the last 6 editions

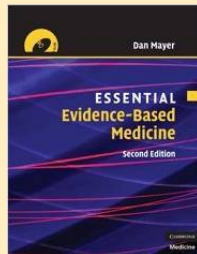
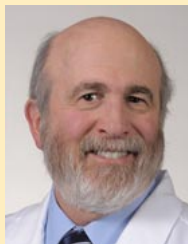
2/15
MCCXXX

Problem/Opportunity

Challenge

- Last year, I was given a 24 hrs course of “Scientific writing” for **160** 5th year students
- I decided to **sneak in** EBM :-)
- **PBL was out of question**
- Luckily, I have been a regular attendee of the **EBHC conference** for the last 6 editions

Conference Workshop: *How to...teaching EBHC with Team Based Learning*



Dan Mayer, 3rd EBHC, 2005

EBHC
MCCXXXV

Team-Based Learning

- A way of having several PBL groups (teams) in a classroom
- Students are divided in stable Teams (5-6 students)

Out of class Usu. 30-50 pages	In class Usu. 1 to 1.5 hours	In class Usu. 3 to 5 class meetings
Readings for preparation	Readiness Assurance Process: Individual test → Same test completed as a team → Appeals → Mini-lecture	Application activities Teams work on a significant problem that requires them to make a significant choice. All teams work on the same problem and report simultaneously.

Structure of a team-based learning module

- Teaching and explanations mostly occur **during discussions**
- Grading is obtained by a mixture of individual RATs, Team scores, and peer evaluation



Group Readiness Assessment Test

IMMEDIATE FEEDBACK ASSESSMENT TECHNIQUE (IF AT®)

Name _____ Test # _____

Subject _____ Total _____

SCRATCH OFF COVERING TO EXPOSE ANSWER

	A	B	C	D	Score	
1.					2	
2.					4	
3.					4	
4.					2	
5.					1	
6.					4	
7.		Learn about IF-AT testing				2
8.						4
9.						4
10.						

Application exercises



Problems with TBL

- It requires a reverse way of thinking the course
- Required readings and application activities must be carefully paired
- A huge amount of grade keeping/accounting (individual, team, peer)
- Tons of paper



My solution: use Moodle

moodle

English (en) piersante sestini

Community driven, globally supported.

Welcome to the Moodle community and discover the value of an open, collaborative effort by one of the largest open-source teams in the world.

COMMUNITY FORUMS

Supported by a global community

Robust open-source learning platform

Powering learning environments worldwide

Moodle stories from around the world

● Use Moodle for:

- Blended course
- Live attendance
- Computer room with 50 seats
- 7-8 teams at the time (out of 30)
- Organization
- Reading material
- RATs
- Application exercises
- Grade keeping
- Feedback questionnaire



Local adaptation to TBL

- Competition = cheating
 - Students didn't like peer evaluation
 - Students who could not follow the course
-
- Changes:
 - RATs only used to record attendance
 - Grade given on a final Critical Reading Question (CRQ), randomized over 12.
 - An essay about the usefulness of an article in a specific clinical vignette
 - Structured grading for summarizing the problem, validity, results, application, further needs
 - Peer evaluation performed but not used in grades
 - Still possible to gain extra points with appeals



Technical details

Moodle modules

Reading materials: Resources

Individual RATs: Quiz module

Team answers: additional team accounts

Team RATs: Quiz with adaptive responses

Application exercises: Quiz module

CRQ: Assignment module

Feedback: Questionnaire module

Peer evaluation: custom PHP script



Topics

9 meetings

- Introduction (plenary)
- Anatomy/Physiology/Pathology of the medical literature
- Literature search (Pubmed, Scholar - Background and foreground questions)
- Scientific frauds
- Diagnosis and Screening (very different!)
- Therapy
- Risk
- Systematic Reviews
- Clinical Practice Guidelines, decision aids, SBAR, other written documents

Program evaluation

Program indicators

- Attendance
- Peer evaluation (quality of participation)
- RATs/exercises
- CRQ results
- Feedback questionnaire
 - Closed questions (score 1-5)
 - Open comments



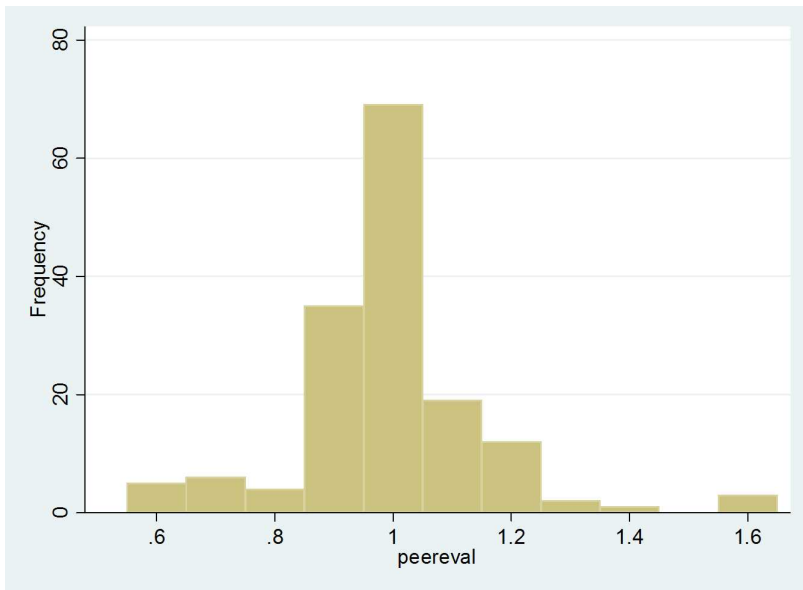
Results

Process indicators

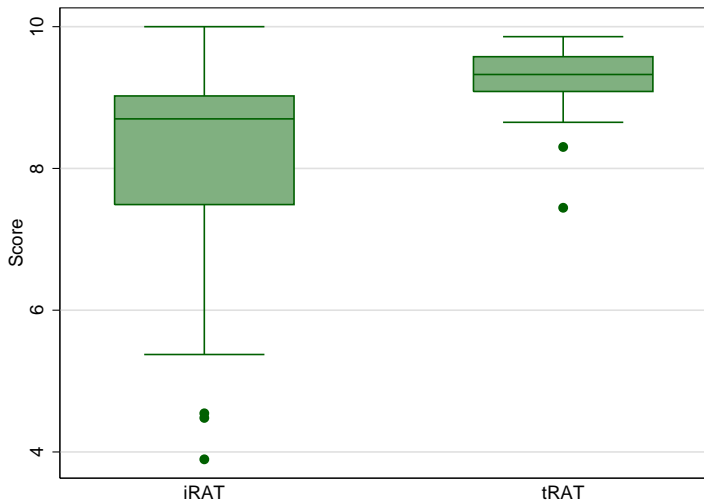
- **Attended** 156
- **Average** 8.1 times (4-9)
- **Took the test:** 158
- **Never showed-up** 9
- **Feedback questionnaires:** 153



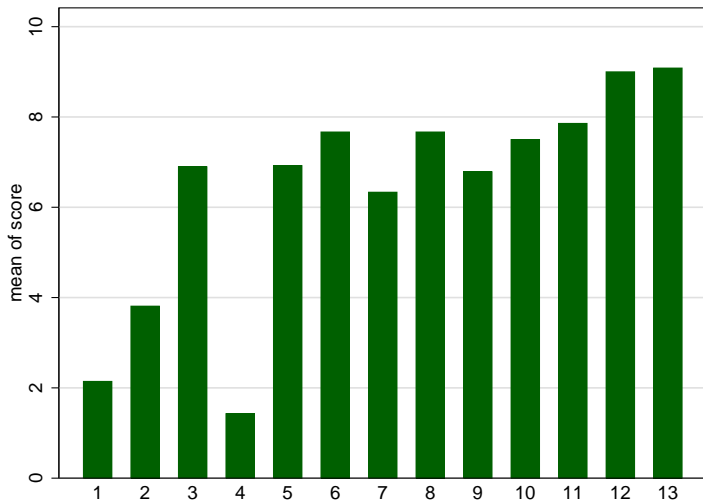
Peer Evaluation



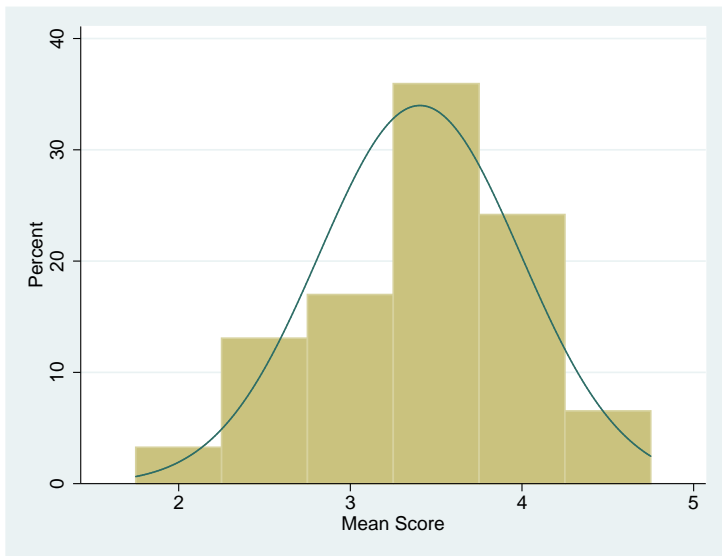
Individual and team RATs



Application exercises

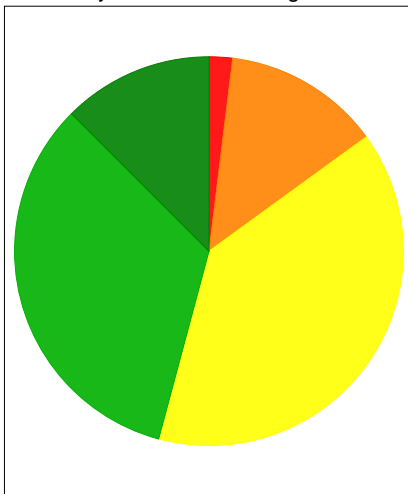


Feedback Questionnaire

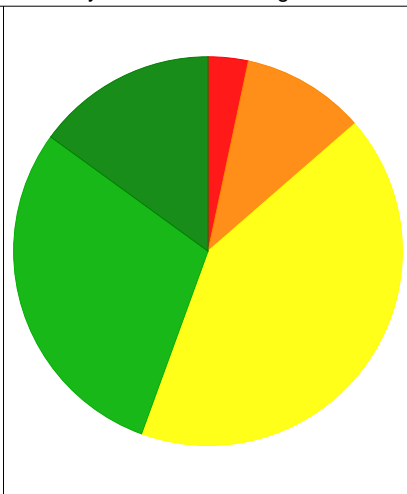


Perceived learning

Did you learn something new?



Did you learn something useful?



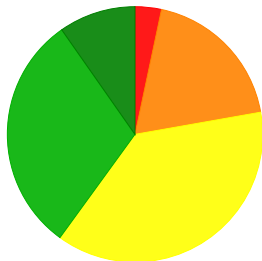
■ Not at all
 ■ Little
 ■ Enough
 ■ Much
 ■ Very much

■ Not at all
 ■ Little
 ■ Enough
 ■ Much
 ■ Very much

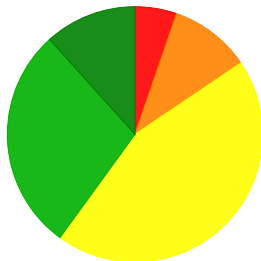


Learning preferences

How much did you like the way of teaching?



How much TBL is suitable for these matters?



How much would you like to use TBL for other disciplines?



How much would you rather prefer lectures?



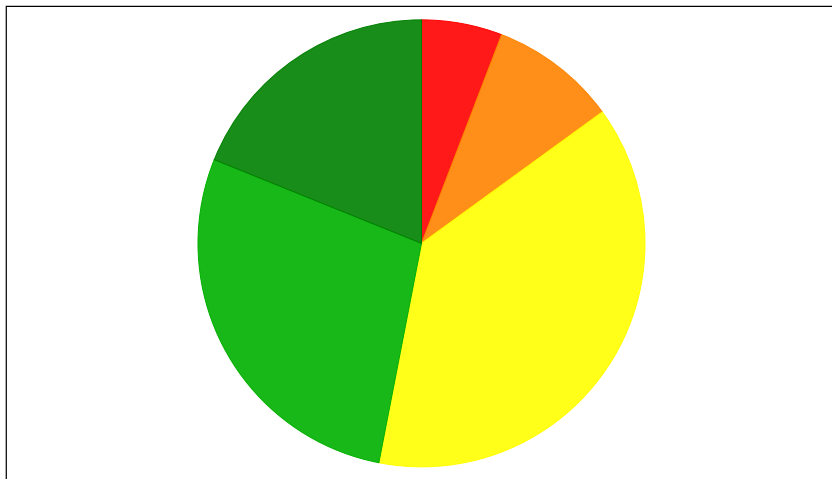
■ Not at all
 ■ Little
 ■ Enough
 ■ Much
 ■ Very much

■ Not at all
 ■ Little
 ■ Enough
 ■ Much
 ■ Very much



Fun?

Was it fun?



Not at all



Little



Enough



Much

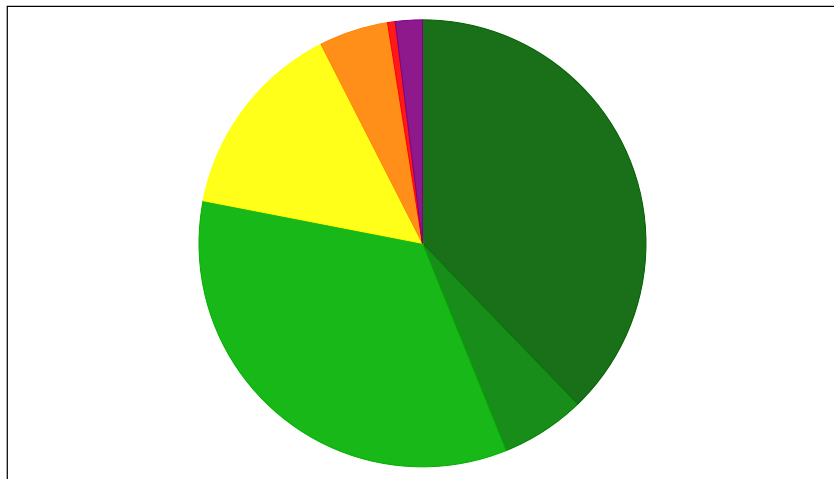


Very much



CRQ

CRQ Penalties



Open comments

Positive aspects

- 63% mentioned interactivity, hands-on or TBL
- 10% mentioned Pubmed or literature
- 6% couldn't find anything good



Open comments

Positive aspects

- 63% mentioned interactivity, hands-on or TBL
- 10% mentioned Pubmed or literature
- 6% couldn't find anything good

Negative aspects

- 41% confusion, noise, organization
- 27% logistic aspects (timetable, location)
- 12% Nothing
- 1% Everything



Conclusions

Using Moodle for teaching EBM with TBL in the classroom is



Conclusions

Using Moodle for teaching EBM with TBL in the classroom is

- **Feasible**



Conclusions

Using Moodle for teaching EBM with TBL in the classroom is

- Feasible
- Suitable



Conclusions

Using Moodle for teaching EBM with TBL in the classroom is

- Feasible
- Suitable
- Paperless



Conclusions

Using Moodle for teaching EBM with TBL in the classroom is

- Feasible
- Suitable
- Paperless
- Effective



Conclusions

Using Moodle for teaching EBM with TBL in the classroom is

- Feasible
- Suitable
- Paperless
- Effective
- Fun!



Conclusions

Using Moodle for teaching EBM with TBL in the classroom is

- Feasible
- Suitable
- Paperless
- Effective
- Fun!

• *Questions?*

