

# A Paradigmatic Shift from "Assessment *of* Learning" to "Assessment *for* Learning"

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# INTRODUCTION

## What is assessment?

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- It is more than grades.
- It is feedback for both instructors and students.
- It drives student learning.





# INTRODUCTION

## Why do assessment?

- to better understand the current knowledge that a student possesses
- to evaluate attainment of course goals

for  
accountability

- **Summative**  
assessment is for the purpose of documentation and dissemination of outcomes.

for  
improvement

- **Formative**  
assessment implies that the results will be used in the formation and revision process of an educational effort.



## METHOD

### Assessment used as an educational tool promotes learning

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- assessment **of** learning = for grading
- assessment **for** learning = for effective feedback to clarify student understanding of concepts, and planning ways to remedy misconceptions and promote deeper understanding.





## METHOD

### The population of the study

- 2 groups of 2<sup>nd</sup> year medical students at the University of Zagreb Medical Faculty
  - **“wbl-students”**: 37 students were enrolled in a hybrid problem-based elective course of acid-base physiology
  - **“f2f-students”**: 84 students attended the same problem-based elective course in a traditional face-to-face (f2f) environment



# METHOD

## Hybrid (blended, mixed) course

**Learning...**  
is not making  
*deposits* in one's  
*data bank*.

...it is more like  
mixing a new  
ingredient into the  
*soup* of perception  
and cognition.

(Davis *et al.*, 2000)

**f2f part of our  
hybrid course**





## METHOD

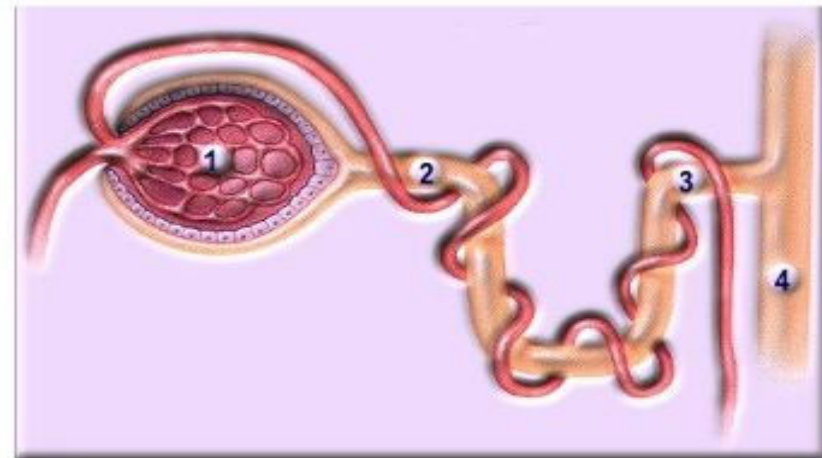
# Overview of the *wbl* part of the course

[Finish](#)[Help](#)

- e-tutorial - 78 pages
- help-pages
- 62 original pictures
- 27 quizzes and tests
- 4 specialized calculators
- 3 flash-animations

### Question 1 (4 points)

Povežite ispravno brojeve u slici s procesima koji su svojstveni pojedinim dijelovima nefrona.



- |   |                |
|---|----------------|
| 1 | Filtriranje    |
| 2 | Reapsorbiranje |
| 3 | Secerniranje   |
| 4 | Koncentriranje |
- 
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|-------|---|
| 1 --> | <input type="text" value="Filtriranje"/>    |
| 2 --> | <input type="text" value="Reapsorbiranje"/> |
| 3 --> | <input type="text" value="Secerniranje"/>   |
| 4 --> | <input type="text" value="Koncentriranje"/> |

[Save answer](#)





# METHOD

## 27 quizzes and tests

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- 1 diagnostic pretest
- 25 formative assessments
- 1 summative assessment (proctored final exam)
- 1 student ~ 10 formative assessments









# RESULTS

**"Wbl-students" perform better on the final exam than "f2f-students"**

PARAMETER	"WBL-STUDENTS" 	"F2F-STUDENTS" 	P
Number of enrolled students	37	84	
Female/Male ratio	24/13	51/33	NS**
Mean score of the summative test (of maximum 36 points)	25,81 ± 0,66	22,08 ± 0,67	0, 0009*
Mean grade of the final physiology test (scale 1-5)	3,28 ± 0,19	3,20 ± 0,14	NS*
Students' overall satisfaction with the course (scale 1-5)	4,54 ± 0,10	3,56 ± 0,18	< 0, 0001*
Students' rating of the tutor (scale 1-5)	4,58 ± 0, 06	4,73 ± 0, 12	NS*

\* Descriptive statistics are reported as means ± SE. Analyses of data were performed using Student's *t*-tests. (NS =  $P > 0,05$ )

\*\* Analyses was performed using  $\chi^2$  - test with Yates correction ( $\chi^2 = 0, 053$ ;  $P = 0, 8180$ )

## RESULTS

**Student usage of the site was generally high**

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- On an average a student accessed the wbl environment  $491 \pm 30$  times (from min. 170 times to max. 857).
- On an average a student spent 1620 minutes (36 school hours) in the virtual environment.



## RESULTS

### **"Wbl-students" who take quizzes perform better on exams**

- Students who achieved a high score in the final examination
  - completed on average 2 times as many formative assessment items
    - completed 4-8 formative self-tests (out of 10), while students in the "low-score" group completed only 0-3 formative assessments
  - achieved a higher score for formative tests than students who did poorly





## CONCLUSION

**Students' progress can be positively affected by the use of technology**

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- E-learning should be a rich and engaging experience - it is not just the distribution of static resources.
- With an appropriate organization of formative assessments instructors can have students engaged in doing, rather than just passive experiencing or reading.





# CONTACTS

Please visit us, we'll be happy to help you ☺

**CARNET**

## Referral Center for Assessment in E-learning



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