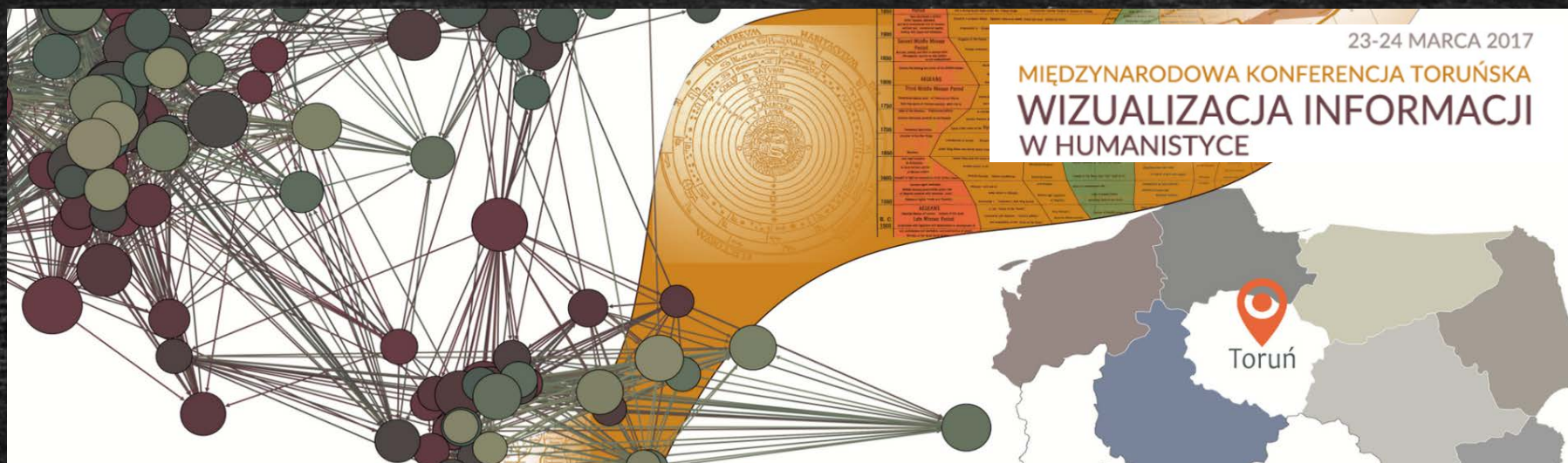




University of Zagreb
Faculty of Graphic Arts



FROM VISUALIZATION FRAMEWORK IN TEACHING BOOKBINDING AT THE FACULTY OF GRAPHIC ARTS

Ph. D. Suzana Pasanec Preprotić, assistant professor*

*Department of Bookbinding and Packaging

23/03/2017



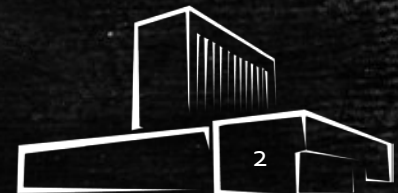
University of Zagreb

Trg Maršala Tita 14

10 000 Zagreb

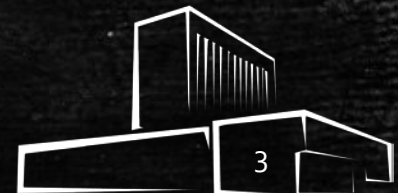
Croatia

www.unizg.hr





- The largest Croatian University (founded in 1669; modern University 1874)
- Constituents: **29 Faculties, 3 Art Academies**
- Number of regular students: **72.500** (50% of all students in Croatia)
- Teaching and administrative full-time staff: **7000**
- Graduated students per year: **7.500** (830 MSc, 380 Ph.D)
- Foreign students per year: **100** (ERASMUS, CEEPUS)





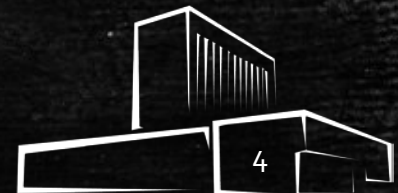
Faculty of Graphic Arts

Getaldićeva 2

10 000 Zagreb

Croatia

www.grf.unizg.hr



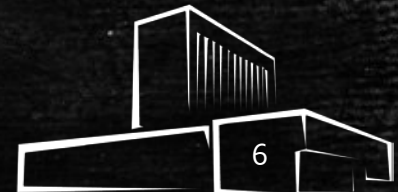


- **Only scientific and educational graphic institution in Croatia**
- Graphic High School founded in 1959
- Faculty of Graphic Arts became independent in **1989**
- Postgraduate Study Program established in 2000





- Educates future masters in **graphic technology**, in scientific field of graphic engineering, in area of technical science
- Leading institution in region with **multidisciplinary approach**
- Supports **long-life learning** for staff
- Establishes the connection between higher education and high-school education in Croatia and European Union





- Implements the **transfer of knowledge** and results of technical and scientific research of graphic engineering, design and communications fields to **the private and public sector** in cooperation with the other higher education institutions in the region
- The activities of graphic technology including **printed and digital media** applications and components of visual communications and multimedia





- Employs more than **60 teaching** with about 20 non-teaching staff
- About 800 students on undergraduate, graduate and postgraduate study programs , **150 freshman**
- Students can choose between **printing technology** and **graphic design** as their main curriculum
- 6 departments offer more than **80 courses**



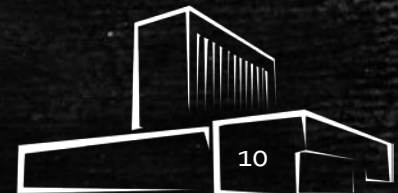


- I. Department for **fundamental and general knowledge**
- II. Department for **graphic design and information processing**
- III. Department for **computer graphic and multimedia**
- IV. Department for **graphic materials and printing plates**
- V. Department for **printing processes**
- VI. Department for **bookbinding and packaging**





- Publishes Academic journal of printing and graphic communication **"Acta Graphica"** (DOAJ, EBSCO, HRČAK, I₂OR, OAJI)
- Main organizer and host of The International Conference on Printing, Design and Graphic Communications - **Blaž Baromić**
- Actively involved in organization of „IARIGAI“ Conference
- Support several other conferences: The International Scientific Conference Printing & Design, The International Scientific Conference MATRIB, The International Colours Day organized by HUBO





- Moving ahead with Bologna process and European Programs in 2005 throughout the European Higher Education Area (EHEA)

UNDERGRADUATE STUDY PROGRAM, 6 SEMESTERS (3 YEARS)

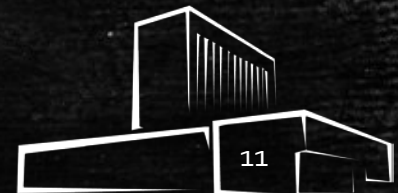
- Technical-technological
- Design of printed products

GRADUATE STUDY PROGRAM, 4 SEMESTERS (2 YEARS)

- Technical-technological (Printing technology or Multimedia)
- Design of printed products

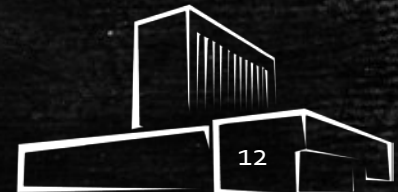
POSTGRADUATE DOCTORAL STUDY PROGRAM, 6 SEMESTERS (3 YEARS)

- Graphic Engineering
- Graphic Product Modelling





- Bologna Process is instrument to **improve academic quality** and performance in view of integration into European Higher Education and Research Area
- Faculty of Graphic Arts adopted **learning outcomes** based system in accordance with the Croatian Qualifications Frameworks (CROQF, 2013)
- Learning outcomes are **important for recognition** (1 ECTS* = 25-30 h)
*EU Credit Transfer System - the investment of time in learning process

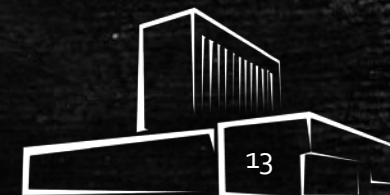


NQF levels	Qualifications	EQF levels
8.2	Doctoral diploma	8
8.1	Postgraduate research master of science diploma <i>poslijediplomski znanstveni magistarski studiji</i>	
7	Master diploma (graduate university studies) <i>sveučilišni diplomski studiji</i>	7
	Professional master diploma (specialist graduate professional studies) <i>specijalistički diplomski stručni studiji</i>	
	Post-master specialist university studies <i>poslijediplomski specijalistički studiji</i>	
6	Bachelor diploma (undergraduate university studies) <i>sveučilišni preddiplomski studiji</i>	6
	Professional bachelor diploma (undergraduate professional studies) <i>stručni preddiplomski studiji</i>	
5	Professional higher education diploma (short cycle) <i>kratki stručni studiji</i>	5
	VET post-secondary development and training certificate <i>strukovno specijalističko usavršavanje i osposobljavanje</i>	
	Master craftsman diploma	
4.2	Upper secondary general education school leaving certificate	4
	Upper secondary VET certificate (four years)	
	Upper secondary VET certificate (five years) for nursing technicians	
4.1	Upper secondary VET (three years)	
3	Upper secondary VET certificate (two years)	3
	Upper secondary VET certificate (one year)	
2	Vocational training certificate	2
1	Primary education certificate (eight years) (*)	1

POSTGRADUATE DOCTORAL STUDY PROGRAM

GRADUATE STUDY PROGRAM

UNDERGRADUATE STUDY PROGRAM





- EHERA – learning outcomes levels



- Principal question of traditional learning (teacher centred)

WHAT DID YOU DO TO OBTAIN YOUR DEGREE?

- Principal question of non-traditional learning (student centred)

WHAT CAN YOU NOW THAT YOU HAVE OBTAINED YOUR DEGREE?

- ✓ This approach is of relevance to the labour market, more flexible when taking into account issue of long-life learning



- Learning outcomes focus on what the **student can demonstrate** at the end of a learning activities

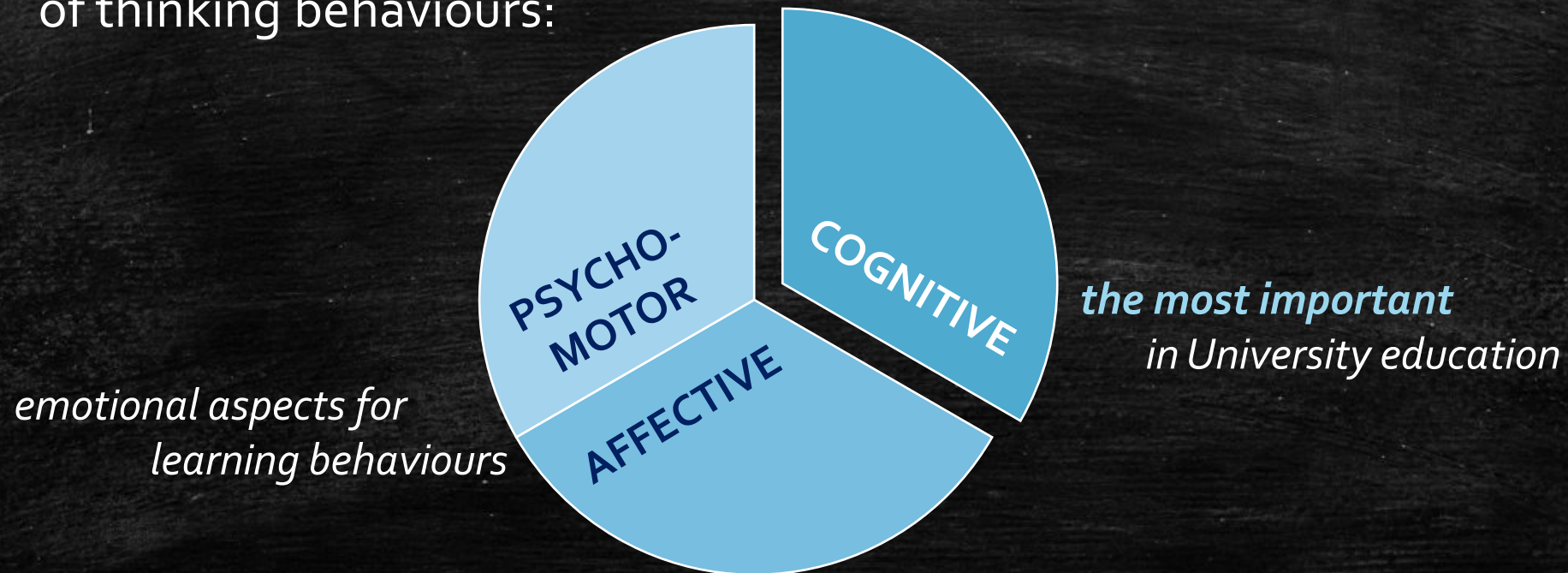




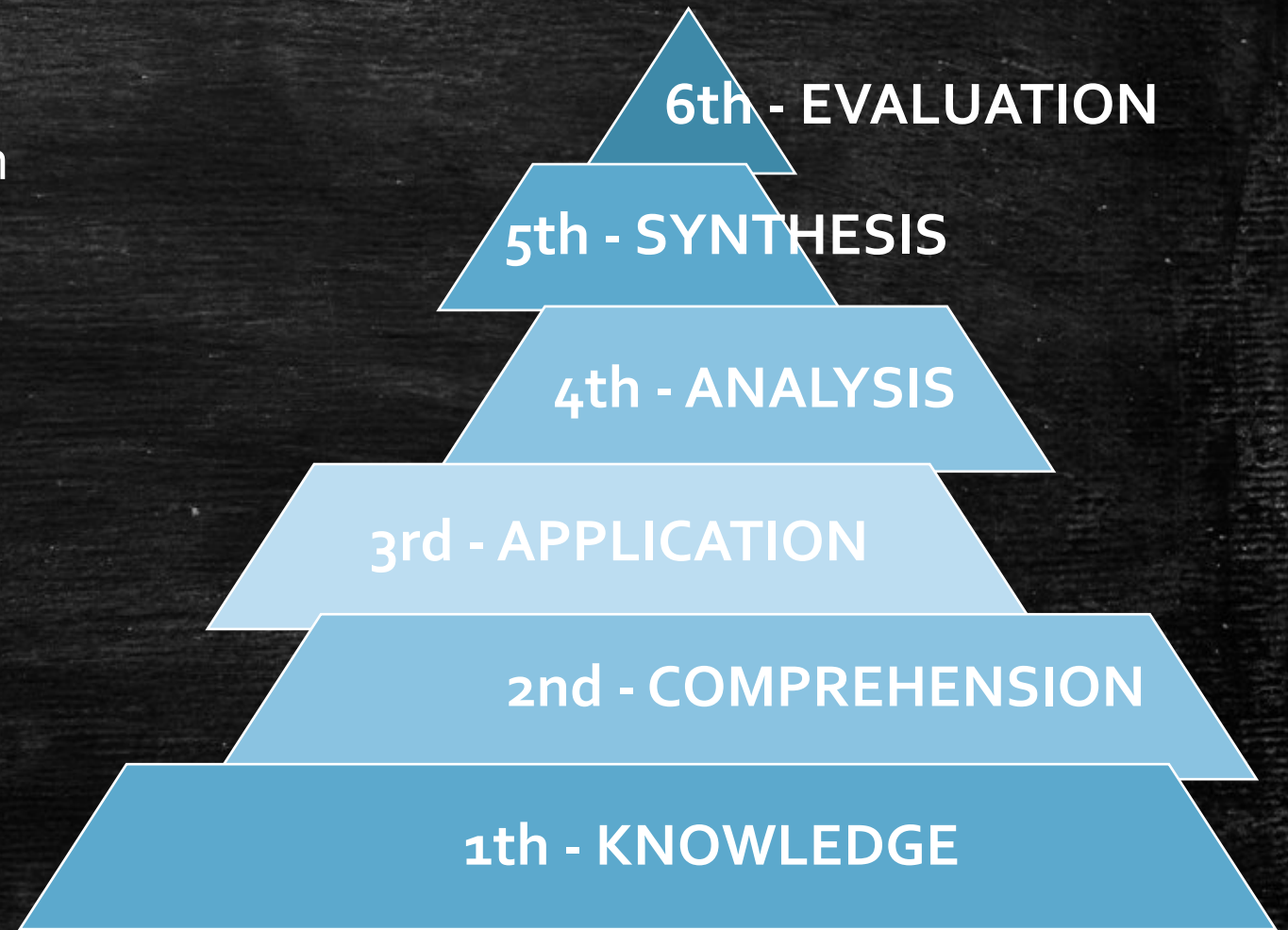
- **Learning outcomes** are description of what student should know, understand and be able to do as a **result of learning**
- The term **student competence** is used in association with **learning outcomes**



- Teacher **Benjamin Bloom** carried out on the development of **levels classification of thinking** during the learning process
- Bloom identified **3 domains of learning**, classification (taxonomy) of thinking behaviours:



- Bloom taxonomy provides a **framework** in which one can build upon prior learning to **develop more complex levels of understanding**
- The **cognitive domain** is composed of **6 levels**:





COGNITIVE DOMAIN ACTIVE VERBS:

EVALUATION

→ argue, attach, choose, compare, conclude, convince, criticise, decide, explain, evaluate, grade, judge, measure, predict, recommend, resolve

SYNTHESIS

→ argue, categorise, collect, combine, compose, create, design, develop, establish, explain, integrate, invent, make, manage, modify, organise, rearrange, reconstruct, set up

ANALYSIS

→ arrange, calculate, categorise, classify, compare, connect, criticise, determine, distinguish, divide, examine, illustrate, order, point out, separate

APPLICATION

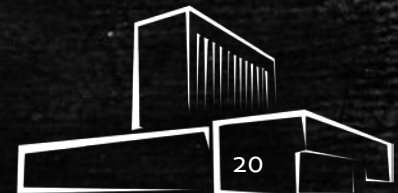
→ apply, calculate, change, choose, complete, demonstrate, develop, examine, find, modify, organise, prepare, produce, select, show, solve, transfer, use

COMPREHENSION

→ associate, change, classify, convert, describe, discuss, identify, distinguish, illustrate, interpret, predict, recognise, report, select, solve

KNOWLEDGE

→ arrange, collect, define, describe, examine, find, order, recognise, show, outline, name, list, memorise, present

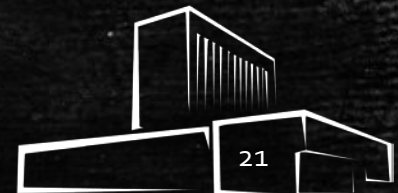




- Learning outcomes linked to teaching and assessment

TEACHING AND LEARNING ACTIVITIES:

- I. Lectures
- II. Tutorials
- III. Discussions
- IV. Group work
- V. Seminar
- VI. Peer group presentation





ASSESSMENT TECHNIQUES FOR EFFECTIVE LEARNING AND CRITERIA:

- I. Written examination (multiple choice tests)
- II. Project works, Presentations, Essays
- III. Portfolios (mental-drawing maps)
- IV. Performance assessment





FORMATIVE ASSESSMENT INCLUDING:

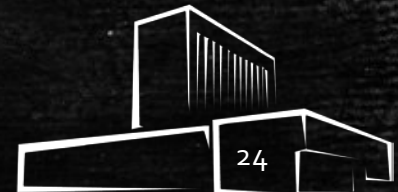
- I. Provide information as **feedback** to modify the teaching and learning activities
- II. Teachers and student **identification** of learning outcomes and criteria for its achieving
- III. The active **involvement** of students in their own learning
- IV. Good **communication** between teacher and students
- V. **The response** by the teacher to students needs





LEARNING OUTCOMES GRADING CRITERIA:

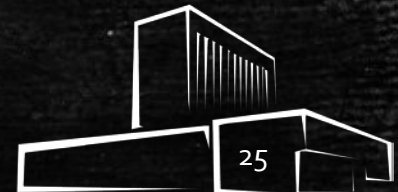
- ✓ Learning outcomes specify **the minimum acceptable standards** to enable the student pass a module (bare grade)
- ✓ Statement indicates what **the student must demonstrate** to achieve a higher grade
- ✓ Scoring guide tool (rubrics) describes **the grading criteria** the performance of students (marks and grades)
- ✓ The rubrics helps to define **the criteria of assessment system**





LEARNING OUTCOMES ADVANTAGES:

- + Approach and **support** teaching and learning at international level
- + Teacher could tell students more precisely **what is expected of students**
- + **Help teachers** to design their materials more effectively and appropriate teaching strategy





LEARNING OUTCOMES IN GRAPHIC TECHNOLOGY EDUCATION:

*Learning outcomes can be specified in a way that covers the range of necessary competence and emphasizes **the integration of different competence in the practice** of printing products, multimedia and graphic design.*



LEARNING OUTCOMES OF QUALITY ASSURANCE:

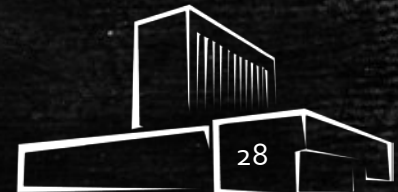
- + Increase transparency and **standards comparability** (EQF international recognition)
- + **Clear information** to employers and higher educations on the achievements and characteristic associated with particular qualification
- + Contribute to the **students mobility** by facilitating the international recognition of their qualifications





Learning outcomes play a key role in ensuring:

- ✓ **International** qualification frameworks transparency
- ✓ **National** qualification frameworks transparency
- ✓ Contributing to **implementation** of various action lines of the **Bologna process** throughout the European Higher Education Area



in example:

STUDY PROGRAM: UNDERGRADUATED, GRAPHIC ENGINEERING, 180 ECTS

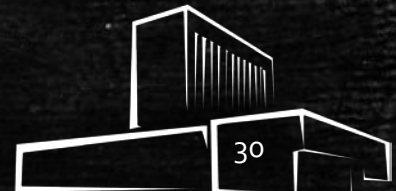
DEPARTMENT: BOOKBINDING AND PACKAGING

COURSE NAME: BOOKBINDING 1, 6th semester, 5 ECTS

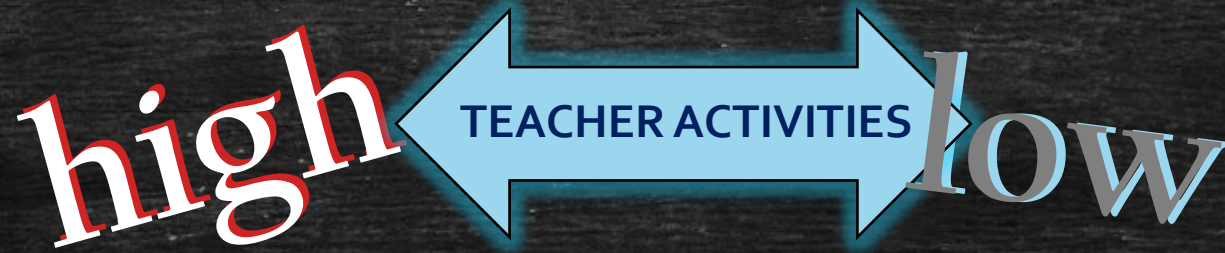


Course description and teaching methods

- 30 hours of lectures (teacher) + 28 hours of practice work (assistant)
- obligatory course Number of Course learning outcomes: 5
- Teaching methods: **ERR framework**, *including Bloom active verbs*
 - ✓ promoting students active learning and critical thinking
 - ✓ dialogic and self-reflective learning
 - ✓ including frame work system – evocation (E), meaning realisation (R), reflection(R)
 - ✓ providing ICT-based learning process (MERLIN, e-learning system)

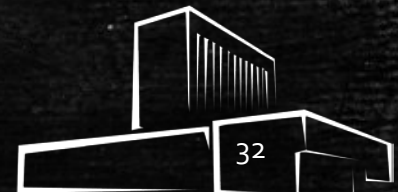


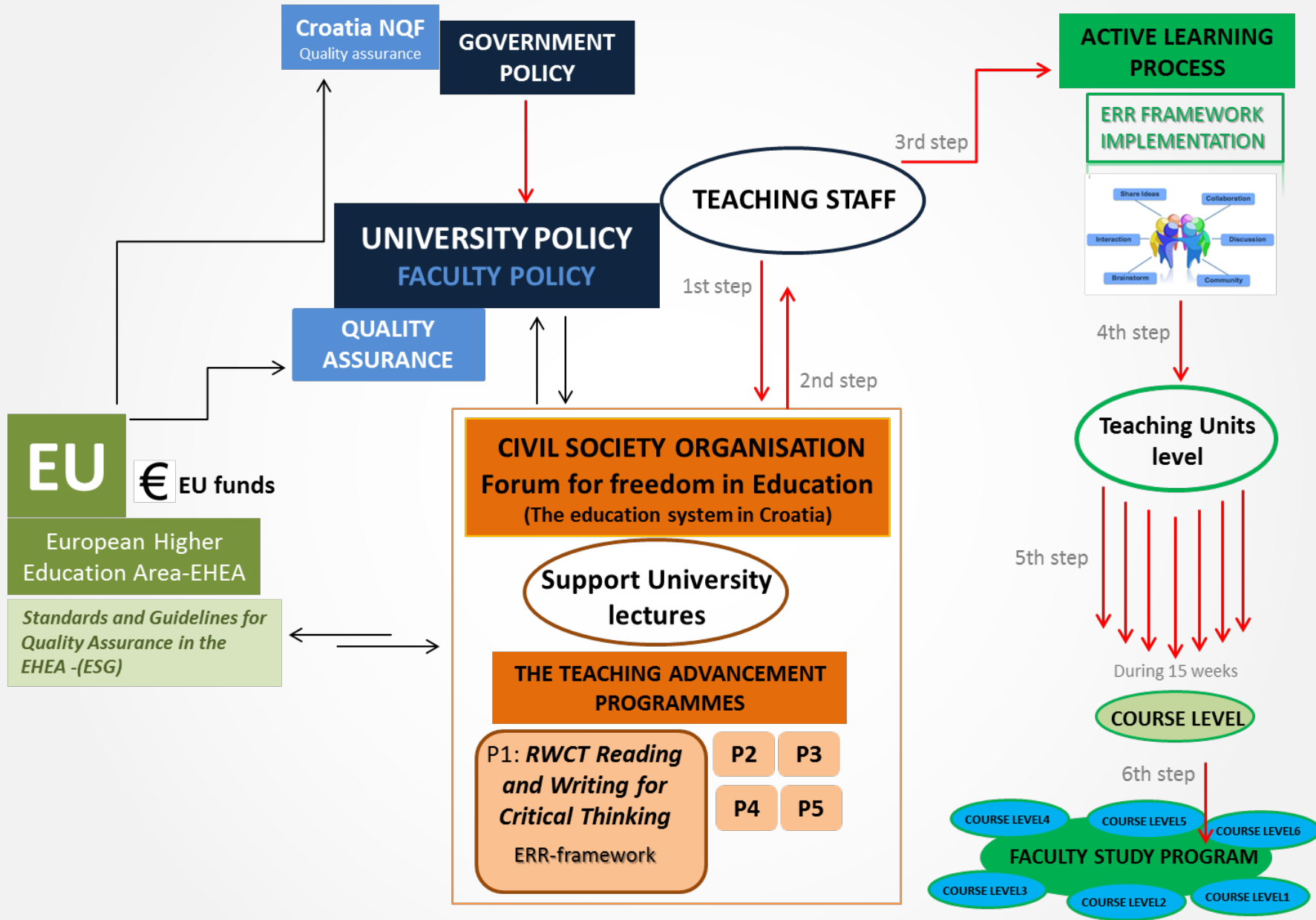
Course description and teaching methods



Course description and teaching methods

- ✓ Learning outcomes and competence aligned with the 6th level (Croatia NQF, 2013)
- ✓ Learning outcomes and qualifications are 150 hours
- ✓ ERR framework including **Bloom taxonomy**
- ✓ Teaching and learning activities:
 - **team-teaching** (work groups about 3-5 students): Evocation + Reflection
 - **discussions** (student-centred learning approaches): Evocation + Reflection
 - **ICT learning environment** (social network model of thinking)
 - **short lectures** (meaning realisation)





ERR framework improves

- Alignment within a given Course



*The case study
Bookbinding projects*



Clickers questions,
The case study

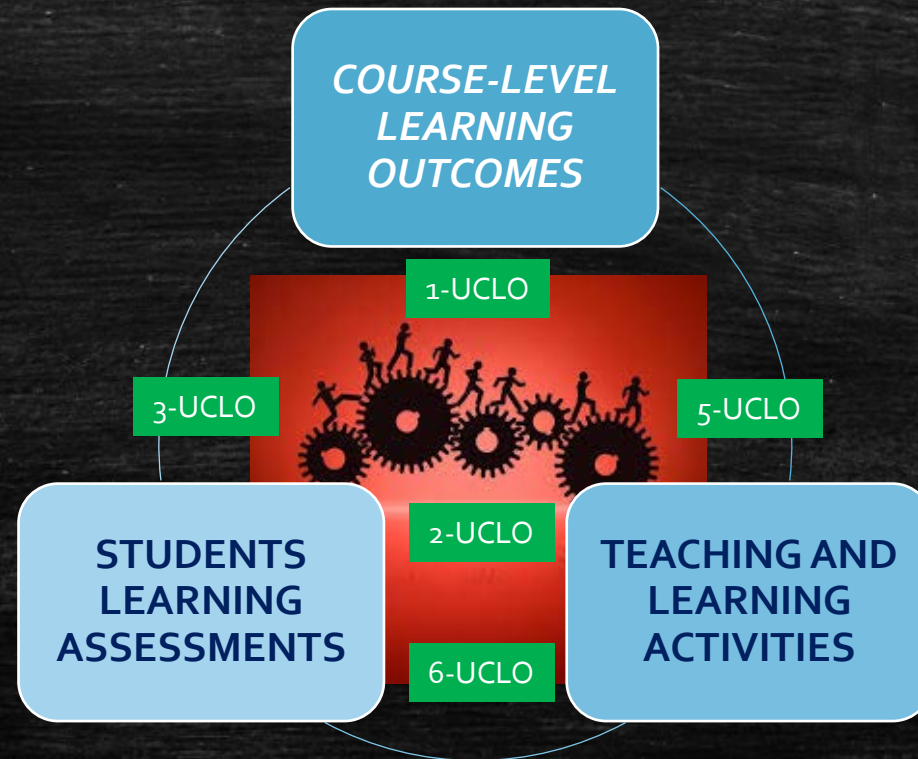
Active verbs

ERR framework improves

- From the Course-level to the **Unit-Chapter Learning outcome**

x-UCLO

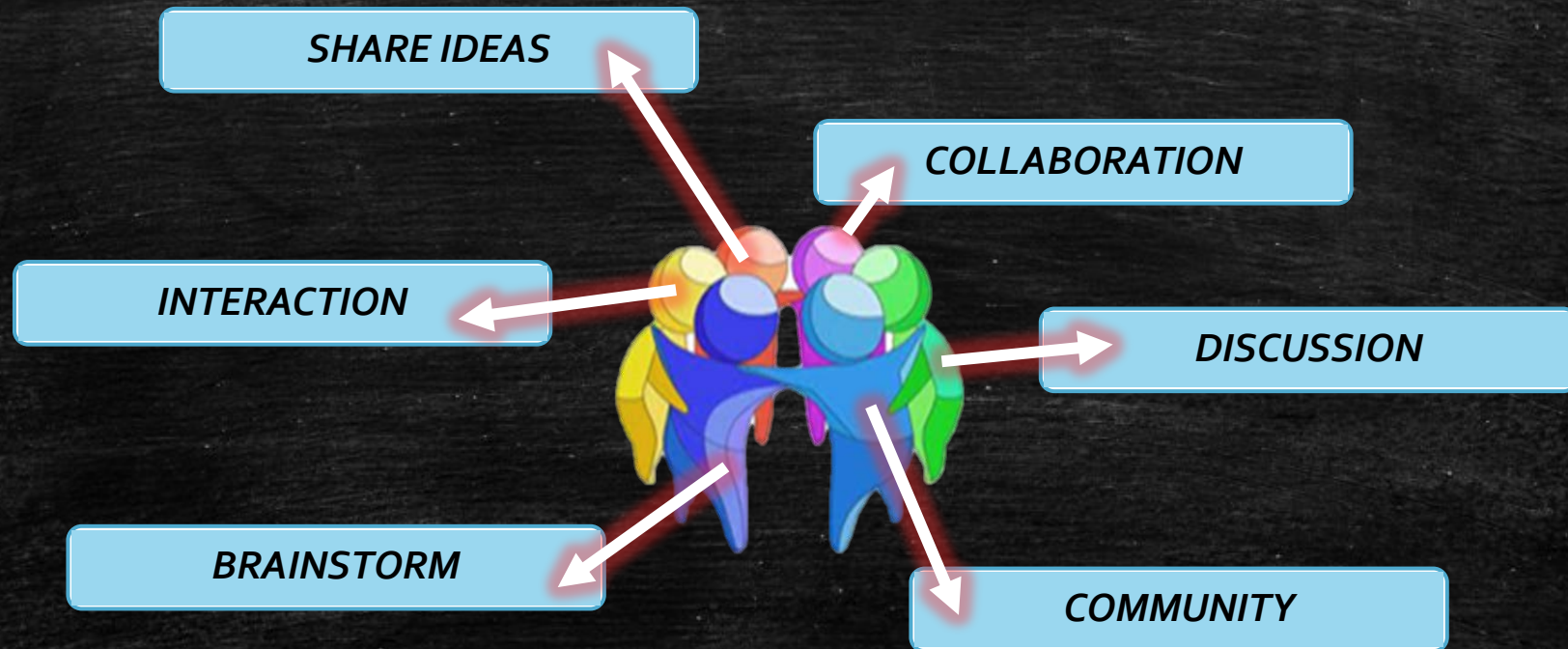
Course Unit - Learning outcome
(1st, 2nd, 3rd, 4th, 5th, 6th)



ERR framework improves

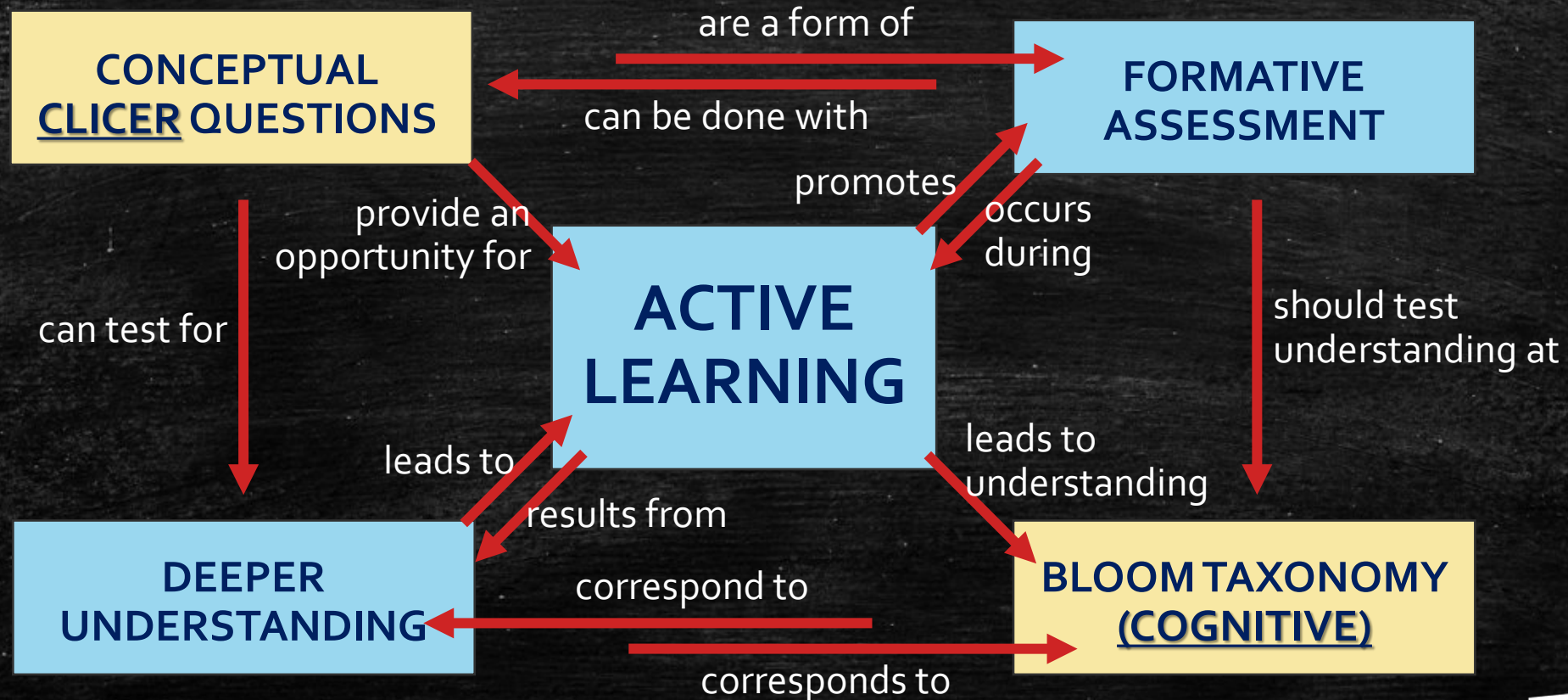
- Determine **critical thinking skills of students** (analysis, synthesis, evaluation)

Bloom taxonomy



Concept map of active learning

- Students like interactivity of active-learning class



ERR framework benefits

- Active learning course including
 - Instruction quality (organization, clarity, interesting)
 - **Additional course materials** (learning goals, groups, quizzes)
 - **Interaction in lecture** (via group activities, clickers, multiple approaches to learning)
 - **Teacher must concentrate on what students to learn**, not just on what materials should be covered in the course
 - Teacher must **generate interest in topics of lecture**, how to awaken students
 - Teacher must **challenging students with interesting questions** (using class discussions and active-learning forms)
 - Teacher must **develops habits of critical thinking**

Teacher has to do!



ERR framework benefits

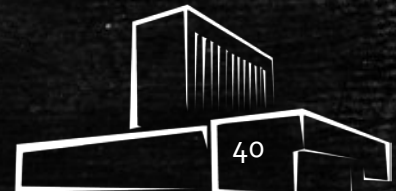
Student has to do!

- Active learning course including
 - Strategic active-learning have to **engage the students** (intellect, physical, verbal) into small groups
 - Providing the **case study with problematic situation** is obligatory!
 - Students must **analyse and discuss the case study** and then **role-play possible solutions**
 - Providing helpful intervention and **advice-modeling critical thinking** for students
 - Students lead to **open-end activities** (problem solving and decision-making)
 - Case study scenarios might be **realistically experience in the future**
 - Students have to communicate effectively with others in **figuring out solutions to complex problems** („the critical thinking is learnable skill“)



Assessment techniques for effective learning and criteria

- Written examination (multiple choice tests)
 - ✓ paper and pencil
 - ✓ Merlin system tests
- Portofolios (mental-drawing maps)
- Performance assessment
















Learning outcomes grading criteria

- Scoring guide tool (rubrics)
 - ✓ marks **systematization** throughout learning activities
 - ✓ **final grading** the performance of students



Active teaching and how to achieve it (example)

	P3: Uloga procesa rezanja u knjigovežnici 	NAME OF LESSONS	
1th	 MM 1 (rezanje)  - pročitati s razumijevanjem - izraditi mentalnu mapu i donijeti na predavanje 3 - ne zaboravite riješiti kviz!	mental maps, drawing at home	BEFORE LECTURE (at home)
	 MM1 - kviz  - nakon pročitaneog tekst i crtanja mentalne mape, kratko odgovorite na dobivena pitanja - kviz je otvoren 16.03. od 21:45 do 22:15 h - za rješavanje kviza imate na raspolaganju 10 minuta	online quiz, before coming to lecture	
2nd	 Evokacija 1  - donijeti isprintano na 3.predavanje	group discussion at the beginning	BEFORE LECTURE (in the classroom)
3rd	 Uloga procesa rezanja u knjigovežnici 	lecture	LECTURE
4th	 Refleksija 1  - donijeti isprintano na 3. predavanje	assessment in small groups	AFTER LECTURE
5th	 PROVJERA ZNANJA 1  - provjera znanja nakon odlusnog predavanja o ulozi rezanja u knjigovežnici - za rješavanje testa na raspolaganju imate 45 minuta - test otvoren od 17.3. do 24.03.	online assessment	AFTER LECTURE (at home)

Active teaching and how to achieve it (example)



drawing
map

Nažalost, ovaj test nije još raspoloživ

Pitanje 1
Nije još odgovoreno
Broj bodova od 15,00
Oznaci pitanje
Uredi pitanje

Značaj rezanja u knjigoveštvu.

Paragraf B I

Staza: p

Pitanje 2
Nije još odgovoreno
Broj bodova od 15,00
Oznaci pitanje
Uredi pitanje

Kakvi papiri oštećuju nož, odnosno zahtijevaju češće mijenjanje noža?

Paragraf B I

online
quiz



Active teaching and how to achieve it (example)

EVOKACIJA 2

PITANJA:

1. Da li gramatura papira utječe na broj savijanja?
2. Objasnite razliku između križnog i paralelnog savijanja.
3. Čemu služi savijanje, a čemu žlijebljenje (objasni razliku)
4. Koje vrste uložnih kutova poznajete?
5. Što je perforiranje?

evocation

Kriterij odabira uvezne jedinice u nakladničkom bešavnom uvezu

Doprinos konkurentnosti:

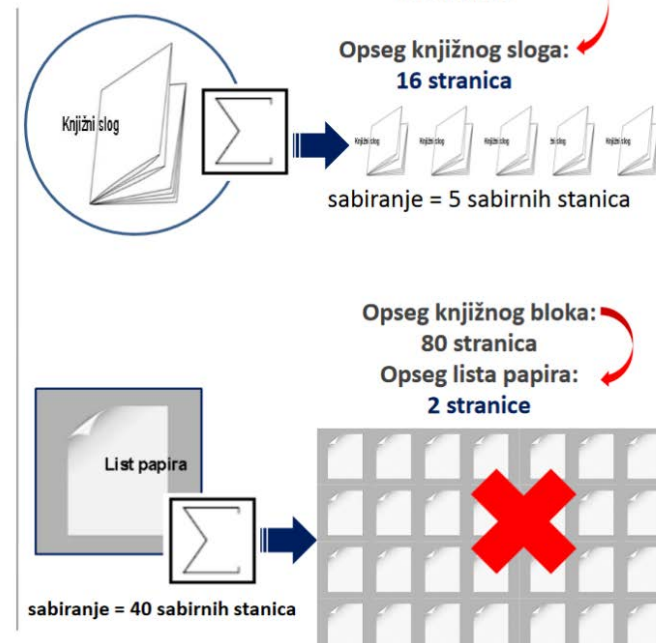
KNJIŽNI SLOG

➤ **visok** proizvodni kapacitet

LIST PAPIRA

➤ **nizak** proizvodni kapacitet

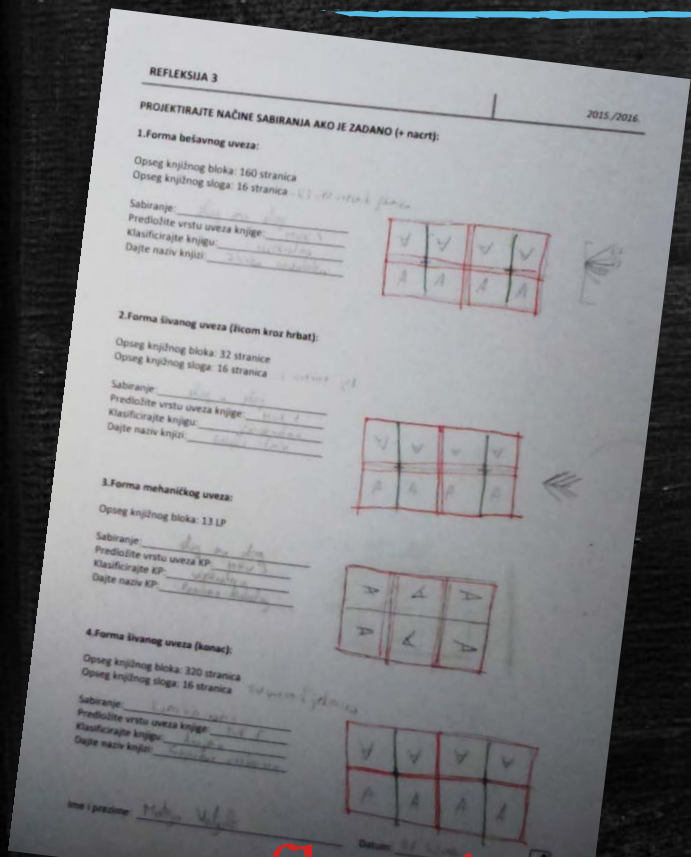
Standardi :
ISO 11800;
LBI Z39.78-2000.



lecture



Active teaching and how to achieve it (example)



reflection

Nažalost, ovaj test nije još raspoloživ

Pitanje 10
Nije još odgovoreno
Broj bodova od 1,00
Oznaci pitanje
Uredi pitanje

Prilikom rezanja se potiskuje kup papira.

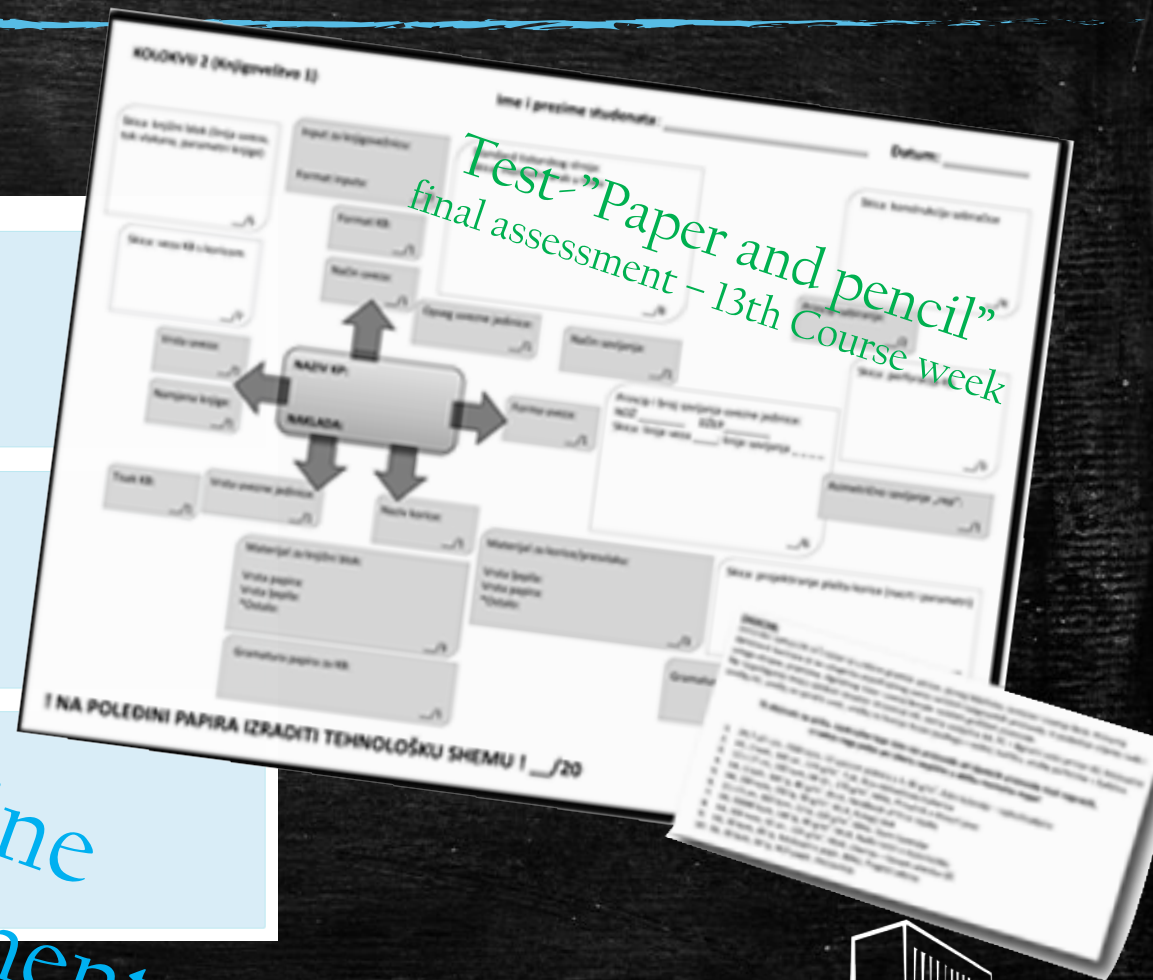
Pitanje 11
Nije još odgovoreno
Broj bodova od 1,00
Oznaci pitanje
Uredi pitanje

Nož na krugorezaču radi na principu .
Odaberi...
dijagonalnog reza
reza pritismom gredom
škarnog reza
reza nožem

Pitanje 12
Nije još odgovoreno
Broj bodova od 1,00
Oznaci pitanje
Uredi pitanje

Za dizanje tereta koristimo .

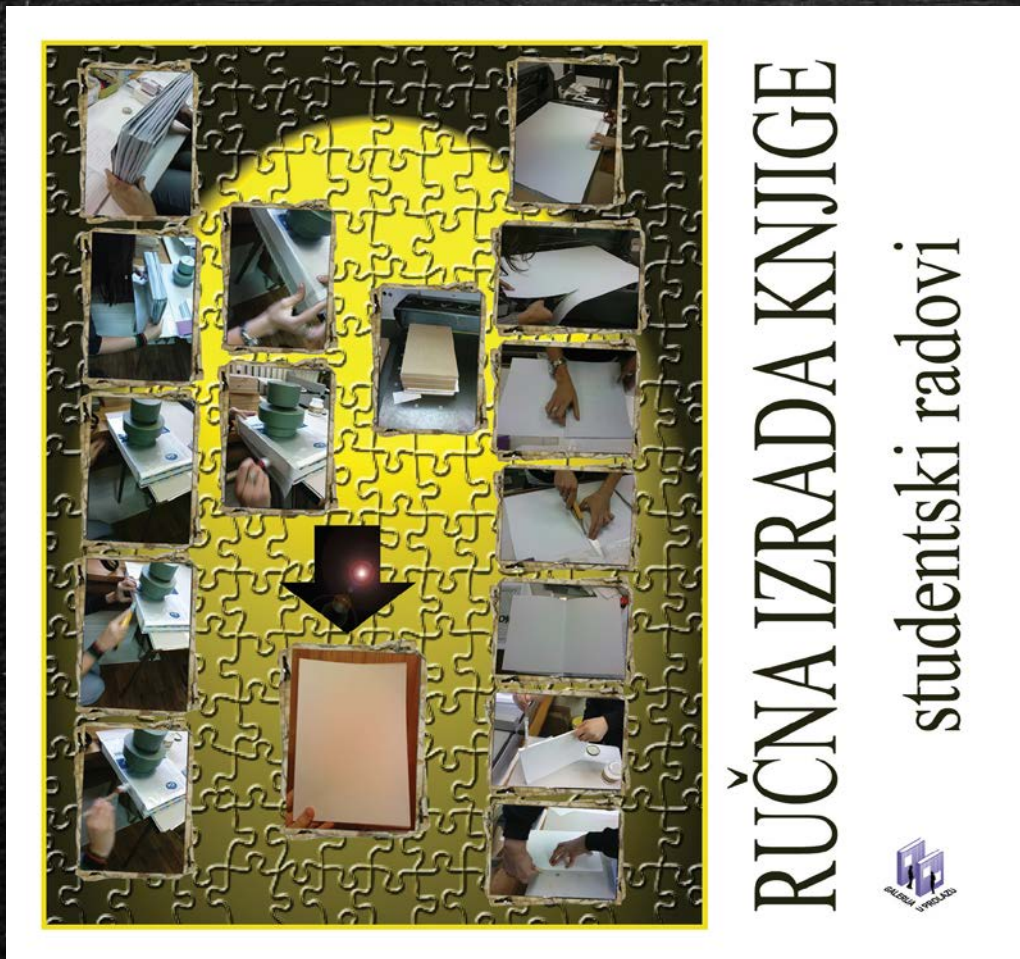
online assessment



Active teaching and how to achieve it (example)



Conclusion



Students Exhibition

Craftbookbinding

Conclusion



Student's bookbinding Products



University of Zagreb
Faculty of Graphic Arts



Suzana Pasanec Preprotić,
assistant professor
spasanec@grf.hr



Gorana Petković,
research assistant
gorana.petkovic@grf.hr

Thanks for your attention!

