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

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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

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
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<td>sveučilišni diplomski studiji</td>
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<td></td>
<td>Professional master diploma (specialist graduate professional studies)</td>
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<td>specijalistički diplomski stručni studiji</td>
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<td></td>
<td>Post-master specialist university studies</td>
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<td>Bachelor diploma (undergraduate university studies)</td>
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<td>Professional higher education diploma (short cycle)</td>
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<td>kratki stručni studiji</td>
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<td></td>
<td>strukovno specijalističko usavršavanje i oposabljanje</td>
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<td>Master craftsman diploma</td>
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<td>Upper secondary VET certificate (four years)</td>
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<td>Upper secondary VET certificate (five years) for nursing technicians</td>
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<td>Upper secondary VET certificate (one year)</td>
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<td>Vocational training certificate</td>
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<td>Primary education certificate (eight years) (*)</td>
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Source: Croatian Ministry of Science, Education and Sport
EQF-INTERNATIONAL RECOGNITION LEVEL
(diplomas/qualifications) *Diploma Supplement

NATIONAL QUALIFICATIONS FRAMEWORK & QUALITY ASSURANCE

FACULTY STUDY PROGRAMS

COURSE LEVEL

TEACHING UNIT LEVEL

- 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:
  - **Cognitive**
  - **Affective**
  - **Psychomotor**

*emotional aspects for learning behaviours*

*the most important in University education*
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, identity, 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
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 framework system – evocation (E), meaning realisation (R), reflection (R)
- providing ICT-based learning process (MERLIN, e-learning system)
Course description and teaching methods

- **High** TEACHER ACTIVITIES
  - DIRECT TEACHING
  - ACTIVE TEACHING
  - Discussion
  - Self-learning

- **Low** STUDENT ACTIVITIES
  - Low
  - High
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

COURSE-LEVEL LEARNING OUTCOMES

INSPIRATION FROM BLOOM’S TAXONOMY

UNIT/CHARPETO LEARNING OUTCOME

The case study
Bookbinding projects

Understanding, Creating, Applying
Evaluating, Analyzing, Remembering

Active verbs

Clickers questions,
The case study
ERR framework improves

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

CONCEPTUAL CLICER QUESTIONS

FORMATIVE ASSESSMENT

ACTIVE LEARNING

DEEPER UNDERSTANDING

BLOOM TAXONOMY (COGNITIVE)
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**
ERR framework benefits

- 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

- Portfolios (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)

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<td><strong>BEFORE LECTURE (at home)</strong></td>
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<td>mental maps, drowing at home</td>
<td>online quiz, before coming to lecture</td>
<td>group discussion at the beginning of the lecture</td>
<td>assessment in small groups at the end of the lecture</td>
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<td>- ne zaboravite rješiti kviz</td>
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Active teaching and how to achieve it (example)
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?
Active teaching and how to achieve it (example)
Active teaching and how to achieve it (example)

Bloom taxonomy

social game (practice lessons)
Grading criteria (example)
Conclusion

Students Exhibition
Craftbookbinding
Conclusion

Student’s bookbinding Products
Thanks for your attention!

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