RUBRICS FOR STUDENTS’ ASSESSMENT IN INTERDISCIPLINARY CONTEXT: INNOVATIVE TEACHING EXPERIENCES IN HIGHER EDUCATION

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INTERDISCIPLINARY TEACHING EXPERIENCE INNOVATION IN UNIVERSITY

“INTEGRATION OF THE DIFFERENT DISCIPLINES AND SKILLS TO ADDRESS THE PROCESS OF ECONOMIC PROBLEMS SOLUTION”

This experience is included into a funded teaching innovation project in the program of consolidation of the European Higher Education Area (EHEA) of the UEx.
Objectives

✓ Get an improvement in student learning, so that he can gain in significance and functionality.

✓ To acquire a comprehensive view of the degree.

✓ Promote the development of some CROSS SKILLS particularly relevant for a graduate in Economics and Business Administration.

✓ Establish the basis of an innovative teaching methodology that can be applied to other subjects, courses and / or qualifications.
• Capacity Analysis and Synthesis.
• Problem Solving Ability.
• Using CTs.
• Deep understanding of abstract concepts

• Application of multidisciplinary knowledge to real situations.
• Development of Interpersonal Skills.
• Ability to work in team.
• Oral and Written Communication
Methodology

3 TEACHING INNOVATIONS:

• INTERDISCIPLINARY LEARNING.

• COOPERATIVE LEARNING TECHNIQUES.

• RUBRICS FOR EVALUATION.
Context

- **Institución**: Faculty of Economics and Business Administration. UEx

- **Degree**: First year in the Degree in Economics and Double Degree in Business Administration-Economics.

- **Subjects**: Macroeconomy, Microeconomy, Mathematics, Estatistics and Sociology.
Activity

Resolution of problems that reflect real economic situations by students

Implementation in the classroom: “Jigsaw technique”

5 Phases:

1. Formation of base equipments and allocating tasks.
2. Individual work.
3. Working in teams of experts.
4. Return to the base group.
5. Assessment of learning and the effectiveness of this technique.

Promotes acquisition of skills and improvement in academic results
Teacher’s rol
MODERATORS
COORDINATORS
FACILITATORS
MEDIATORS

Student’s rol
ACTIVE
CONSTRUCTIVE
COLABORATOR
COOPERATIVE
CONVERSATIONAL
CONTEXTUALIZED
REFLEXIVE
RESULTS

Assessment of learning by teacher
EDULEARN 2014: 6th International Conference on Education and New Learning Technologies

Assessment of learning by teacher

INDIVIDUAL ASSESSMENT: TEST

EVIDENCED THE EFFICIENCY IN LEARNING WITH THIS TECHNIQUE
Once analysed the answer of those that gave an answer and comparing them with the results of the hetero-assessment we concluded that both of them were correlated.

<table>
<thead>
<tr>
<th>CI1. Write here the name of the classmate of your &quot;base group&quot; that you think has contributed greater to the whole work than the rest:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>CI2. Write here the name of the classmate of your “base group” that you think that has contributed little or none, that means, those who have worked not enough and have delegated their work to the rest:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>CI3. Write here the name of the classmate of your &quot;expert group&quot; that you think has contributed greater to the whole work than the rest:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>CI4. Write here the name of the classmate of your “base group” that you think that has contributed little or none, that means, those who have worked not enough and have delegated their work to the rest:</th>
</tr>
</thead>
</table>
GROUP EVALUATION: RUBRICS

MOTIVACIÓN

Transparente:
Rubrics help students learn the elements to take into account in order to evaluate them, how to measure them and the weight of this elements.

Formative:
Rubrics provide feedback to the student, who can adjust their learning based on the information received.
<table>
<thead>
<tr>
<th>PROBLEM UNDERSTANDING (10%)</th>
<th>A (100 points)</th>
<th>B (70 points)</th>
<th>C (40 points)</th>
<th>D (0 points)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The base group identifies clearly the relevant information of the problem: initial data, variables to resolve, conditions that have to be into account and the final objective of the problem.</td>
<td>The base group identifies the relevant information of the problem but is unable to properly establish all the relationships between the different variables.</td>
<td>The base group identifies the relevant information of the problem, but sets wrong relationships between variables.</td>
<td>The base group does not identify neither the relevant information of the problem nor the ultimate goal of it.</td>
<td></td>
</tr>
<tr>
<td>10 points</td>
<td>7 points</td>
<td>4 points</td>
<td>0 points</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DEVELOPMENT OF SOLUTION (40%)</th>
<th>A (100 points)</th>
<th>B (70 points)</th>
<th>C (40 points)</th>
<th>D (0 points)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The base group uses the most appropriate mathematical technique for solving the problem.</td>
<td>The base group uses the most appropriate mathematical technique for solving the problem.</td>
<td>The base group uses the most appropriate mathematical technique for solving the problem.</td>
<td>The student does not present properly techniques for problem resolution, for he uses inadequate techniques. Or</td>
<td></td>
</tr>
<tr>
<td>It does so in a clear and orderly.</td>
<td>It does so in a clear and orderly.</td>
<td>Although not explain some steps, it reaches the correct final solution in at least 40% of all of the problem.</td>
<td>The base group uses the most appropriate mathematical technique but it reaches the correct final solution in less than 40% of all of the problem.</td>
<td></td>
</tr>
<tr>
<td>It reaches the correct final solution in all parts of the problem.</td>
<td>Although not explain some steps to reach the correct final solution in at least 70% of all of the problem.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40 points</td>
<td>28 points</td>
<td>16 points</td>
<td>0 points</td>
<td></td>
</tr>
<tr>
<td>A (100 points)</td>
<td>B (70 points)</td>
<td>C (40 points)</td>
<td>D (0 points)</td>
<td></td>
</tr>
<tr>
<td>---------------</td>
<td>---------------</td>
<td>---------------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td><strong>USE OF IT TOOLS (20%)</strong></td>
<td>The base group correctly uses statistical tools of Excel all calculations.</td>
<td>The base group correctly based tools of Excel uses over 60% of calculations but not entirely.</td>
<td>The base group uses correctly some of the tools of Excel, but it does at least 60% of the calculations.</td>
<td>The base group uses incorrectly tools Excel.</td>
</tr>
<tr>
<td>20 points</td>
<td>14 points</td>
<td>8 points</td>
<td>0 points</td>
<td></td>
</tr>
<tr>
<td><strong>INTERPRETATION AND CHECKING RESULTS (30%)</strong></td>
<td>The base group can interpret the solution and presents the final conclusion clearly.</td>
<td>The base group can interpret the solution that offers and he presents the final conclusion clearly. It justifies and frames his conclusions in the economic and sociological theories given in classes.</td>
<td>The base group can interpret the solution that offers and it doesn’t justify or frame it in the economic and sociological theories given in classes.</td>
<td>The student does not interpret the obtained solution or does it incorrectly.</td>
</tr>
<tr>
<td>30 points</td>
<td>21 points</td>
<td>12 points</td>
<td>0 points</td>
<td></td>
</tr>
</tbody>
</table>

ALL SCORES OBTAINED ARE BETWEEN 0.65 to 0.85 (1 point maximum)
GRUPAL COEVALUATION

<table>
<thead>
<tr>
<th>GROUP COEVALUATION</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>CG1. I was able to answer questions within the group.</td>
<td>1</td>
<td>4</td>
<td>5</td>
<td>17</td>
<td>34</td>
</tr>
<tr>
<td>CG2. There has been good coordination in the group.</td>
<td>1</td>
<td>4</td>
<td>5</td>
<td>17</td>
<td>34</td>
</tr>
<tr>
<td>CGE. I have relied on group member.</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>16</td>
<td>34</td>
</tr>
</tbody>
</table>

With a maximum score of 5, the average given by students to the questions: resolve doubts, group coordination and group trust, are, respectively, 4.2, 4.3 and 4.3, so that means that students have valued very highly the work within the groups.
Assessment of learning by students

QUESTIONNAIRE:

41 questions, Likert scale from 1 to 5

Interdisciplinary
Cooperative learning
Skills
Learning
Assessment
Influence of the experience in learning
(Averages for the valuation of items related to learning)
Conclusions

After developing an innovative experience in the classroom using ICL methodology, we can assess that it has achieved very positive learning objectives, both in content and skills, indicating an improvement in university education.

Rubrics provide a formative assessment, not merely summative, but a more objective rating.

We believe that these experiences do not move the disciplinary approach to an interdisciplinary one but complement.

Therefore, the purpose of this paper is to explain a didactic-methodological proposal extrapolated from other subjects, courses, and degrees. We have explained how to proceed in its design and development and in its learning assessment from an interdisciplinary perspective.
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