STUDENT ENGAGEMENT AND PERCEPTION OF eRUBRIC-BASED EVALUATION PROCESS

Authors: José Miguel Tricás (PhD, MsC, OMPT, PT)
          César Hidalgo (PhD, MsC, OMPT, PT)

Speaker: Silvia Pérez (PhD, MsC, OMPT, PT)

Institution: University of Zaragoza, Spain
INTRODUCTION

- The shift from teacher-centered learning to student-oriented learning gives more autonomy to learners, but also requires that they take more responsibility for their learning.

- Assessment information is used to inform students about their progress and aid them in their development.

- Within the setting of active learning methodologies in higher education, formative assessment has gained special importance in the last years.

Rubrics have a great potential of:

- fostering SRL and subject-specific competences
- facilitate students’ self-assessment and assessment by peers and teachers
INTRODUCTION

- Rubrics have become an essential instrument for formative assessment.
  (Andrade & Valtcheva, 2009; Halonen et al., 2003; Jonsson & Svingby, 2007; Moskal & Leydens, 2000)

- Students are increasingly working in technology enhanced learning environments (TELEs).

---

Electronic rubrics (eRubrics)

- Advantages of eRubric:
  ✓ easy to use
  ✓ feedback can be given much more quickly
  ✓ better self-regulate their learning than would be the case in traditional learning environments.
  ✓ provide for more interaction
  ✓ help students to become more autonomous in evaluating their competences.

(Simon & Forgette-Giroux, 2001)
OBJECTIVES

General Objective

➢ To analyze student’s opinion on the experience of the use of rubrics.

Specific Objectives

➢ To describe and understand the satisfaction degree of the students with the erubric based assessment process.
➢ To obtain evidences of student’s engagement through their own reflexion.
➢ To understand the advantages and disadvantages of the erubric expressed by the students.
MATERIAL AND METHODS

STUDY DESIGN AND PARTICIPANTS

- N = 134 students
- 1st Course OMT Master’s Programme
- 2015/2016
- 2 educational contexts:
  - University of Zaragoza
  - International University of Cataluña
- Subject → OMPT applied to the Cervical Spine (4 ECTS)
  Practical examination
MATERIAL AND METHODS

MATERIALS

1. Rubric

<table>
<thead>
<tr>
<th>MATERIALS</th>
<th>EXPERTO</th>
<th>AVANZADO</th>
<th>APRENDIZ</th>
<th>NOVEL</th>
<th>PESO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Posición del paciente</td>
<td>Nada que mejorar</td>
<td>Olvida pequeños detalles</td>
<td>El paciente está incómodo o la posición no es la más correcta para la técnica</td>
<td>Desconoce en qué posición colocar al paciente</td>
<td>20%</td>
</tr>
<tr>
<td>Posición del fisioterapeuta</td>
<td>Nada que mejorar (bueno ergonomía y buen uso del cuerpo)</td>
<td>Puede mejorar en el uso del cuerpo para la técnica (bueno ergonomía y colocación con respecto al paciente)</td>
<td>Sabe dónde y cómo colocarse pero no tiene buena ergonomía</td>
<td>Desconoce dónde y cómo colocarse; mala ergonomía y no es útil para la técnica</td>
<td>20%</td>
</tr>
<tr>
<td>Procedimiento</td>
<td>Nada que mejorar</td>
<td>Realiza bien la técnica pero debería mejorar algún aspecto específico (dirección toma, posición de reposo...)</td>
<td>Conoce la técnica pero no la realiza correctamente (no hace lo que dice); tomas incorrectas, dirección incorrecta, posición de reposo incorrecta...</td>
<td>Desconoce cómo realizar la técnica</td>
<td>20%</td>
</tr>
<tr>
<td>Efecto</td>
<td>El indicado para la técnica</td>
<td>Se consigue el efecto pero es mejorable mediante el ajuste de algún pequeño parámetro (Uso del cuerpo, dirección...)</td>
<td>Efecto indicado pero poco o incluso sin llegar al segmento/región/estructura diana</td>
<td>Ninguno (o contraindicado; ej.: grado III para alivio de síntomas...)</td>
<td>20%</td>
</tr>
<tr>
<td>Razonamiento Clínico</td>
<td>Conoce:</td>
<td></td>
<td>Conoce la técnica sin problema pero no tiene buena resolución de problemas y tiene problemas con las indicaciones/detalles.</td>
<td>Incapaz de describir la técnica ni su uso o indicaciones. Desconocimiento de situación clínica ni tratamiento indicado.</td>
<td>20%</td>
</tr>
</tbody>
</table>
MATERIAL AND METHODS

MATERIALS

2. **Questionnaire** “Students opinion on rubric based assessment process” (Martínez & Raposo, 2011)

### SECTION 1
- 11 close items + 1 open item
- Agreement – Disagreement
- Likert scale
- Dimensions
  - Rubric features
  - Modality of assessment
  - Assessment process
  - Learning impact
  
  (Alfa Cronbach 0.814)

### SECTION 2
- 9 items
- 0-10 assessment scale
- Dimensions
  - Student engagement
  - Global perception of assessment process
  
  (Alfa Cronbach 0.716)
MATERIAL AND METHODS

PROCEDURE

1. Rubric Configuration
MATERIAL AND METHODS

PROCEDURE

2. Practical Examination

- Groups → 1 teacher/8 students
- Students perform one technique on each other
- 3 assessments:
  - Peer-assessment
  - Self-assessment
  - Teacher assessment
- Immediate data processing to obtain mean values
- Automatic individual email sending with personalized comments
MATERIAL AND METHODS

PROCEDURE

3. **Filling in the Questionnaire** “Students opinion on rubric based assessment process”
MATERIAL AND METHODS

PROCEDURE

4. Results Analysis

- SPSS 21.0 for MAC
RESULTS AND DISCUSSION

SAMPLE DESCRIPTION

- N = 134 students
- 46.3% men, 53.7% women
- Age → 25.85 years

1. Rubric features
2. Modality of assessment
3. Assessment process
4. Learning impact
5. Student engagement
6. Global perception
RESULTS AND DISCUSSION

1. Rubric Features

<table>
<thead>
<tr>
<th>Features</th>
<th>Fully disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Fully agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. The rubric allows to know what it is expected from examination</td>
<td>0.7%</td>
<td>12.7%</td>
<td>65.7%</td>
<td>20.9%</td>
</tr>
<tr>
<td>B. The rubric allows to verify the level of competence acquired</td>
<td>4.5%</td>
<td>11.9%</td>
<td>61.2%</td>
<td>22.4%</td>
</tr>
</tbody>
</table>

- Students claimed that they **better understood teacher expectations** when the assignment involved a rubric.  
  *(Reynolds-Keefer 2010)*

- Students’ anxiety (negative SRL) may **decrease** when implementing long-term interventions with rubrics, which is probably due to the fact that students know what is expected of their work and how it will relate to their grades.  
  *(Panadero, Alonso-Tapia, & Huertas 2012)*
RESULTS AND DISCUSSION

2. Modality of assessment

<table>
<thead>
<tr>
<th>Option</th>
<th>Fully disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Fully agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. The rubric allows self-assessment</td>
<td>0.7%</td>
<td>12.7%</td>
<td>52.2%</td>
<td>34.3%</td>
</tr>
<tr>
<td>B. The rubric allows peer-assessment</td>
<td>0.7%</td>
<td>5.2%</td>
<td>60.4%</td>
<td>33.6%</td>
</tr>
<tr>
<td>C. The rubric allows to assess every group equally</td>
<td>5.2%</td>
<td>23.9%</td>
<td>47.8%</td>
<td>23.1%</td>
</tr>
</tbody>
</table>

- Self-assessment with eRubrics facilitates students' understanding of their learning process, contrasting their achievements against objective proof presented by eRubrics. (Tella-González & Raposo-Rivas, 2013)

- Peer assessment count on a wide literary tradition that is enhanced by the use of eRubrics. This type of assessment facilitates peer correction, information feedback and peer analysis of the processes involved. (Falchikov, 2005; Hargreaves, 2007; Bretones Román, 2008)
RESULTS AND DISCUSSION

3. Assessment process

- The **application of assessment criteria** differs according to whether it is interpreted by teachers or students.

(Lapham, A. & Webster, R. 2003)

<table>
<thead>
<tr>
<th></th>
<th>Fully disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Fully agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. The rubric allows a more objective assessment</td>
<td>4.5%</td>
<td>19.4%</td>
<td>58.2%</td>
<td>17.9%</td>
</tr>
<tr>
<td>B. The rubric makes teachers clarify the criteria</td>
<td>3.0%</td>
<td>12.7%</td>
<td>57.5%</td>
<td>26.9%</td>
</tr>
<tr>
<td>C. The rubric shows how we will be assessed</td>
<td>0%</td>
<td>5.2%</td>
<td>63.3%</td>
<td>31.3%</td>
</tr>
<tr>
<td>D. The rubric demonstrates the work done</td>
<td>3.0%</td>
<td>22.4%</td>
<td>61.9%</td>
<td>12.7%</td>
</tr>
</tbody>
</table>

- Working together with students on criteria formation and adoption will make students active in the process and **increase the success rate** of the peer assessment.

(Falchikov, 2001; Sahin, 2008)
RESULTS AND DISCUSSION

4. Learning impact

<table>
<thead>
<tr>
<th>A. The rubric provides feedback</th>
<th>Fully disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Fully agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.5%</td>
<td>11.2%</td>
<td>61.2%</td>
<td>26.1%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B. The rubric help us understand the features the examination shall have</th>
<th>Fully disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Fully agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.2%</td>
<td>6.7%</td>
<td>67.2%</td>
<td>23.9%</td>
</tr>
</tbody>
</table>

- Rubrics contribute to student learning by aiding the feedback process. *(Schamber & Mahoney, 2006)*
- Rubrics provide students with more informative feedback about their strengths and areas in need of improvement. *(Rosaline, 2011)*
- The positive effects on learning may be due to student motivation and satisfaction with the use of technology in general. *(Panadero and Jonsson, 2013)*
RESULTS AND DISCUSSION

5. Student engagement

<table>
<thead>
<tr>
<th></th>
<th>1-2</th>
<th>3-4</th>
<th>5-6</th>
<th>7-8</th>
<th>9-10</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. The rubric has motivated me</td>
<td>9.0%</td>
<td>9.7%</td>
<td>20.1%</td>
<td>37.3%</td>
<td>23.9%</td>
</tr>
<tr>
<td>B. The rubric has promoted participation</td>
<td>6.7%</td>
<td>9.7%</td>
<td>19.4%</td>
<td>36.6%</td>
<td>27.6%</td>
</tr>
<tr>
<td>C. The rubric has made me more responsible</td>
<td>11.9%</td>
<td>8.2%</td>
<td>25.4%</td>
<td>42.5%</td>
<td>11.9%</td>
</tr>
</tbody>
</table>

- Throughout the peer assessment process, students learn to develop high levels of responsibility and to focus on learning itself.

- Peer assessment also provides the learners with a context where they can observe the role of their teachers and understand the role of assessment.

(Hanrahan & Issacs, 2001)
RESULTS AND DISCUSSION

5. Student engagement

<table>
<thead>
<tr>
<th></th>
<th>1-2</th>
<th>3-4</th>
<th>5-6</th>
<th>7-8</th>
<th>9-10</th>
</tr>
</thead>
<tbody>
<tr>
<td>D. I have performed collaborative work within the group</td>
<td>6.7%</td>
<td>9.0%</td>
<td>17.2%</td>
<td>35.8%</td>
<td>31.3%</td>
</tr>
<tr>
<td>E. I have cheated</td>
<td>74.6%</td>
<td>6.0%</td>
<td>12.7%</td>
<td>6.0%</td>
<td>0.7%</td>
</tr>
</tbody>
</table>

- Students often have **negative attitude** towards peer assessment. Some students may not like the idea of having their work to be assessed by peers or assessing their peers’ work.

(Brown, 1998; Magin, 2001; Van den Berg et al., 2006)
RESULTS AND DISCUSSION

6. Global perception of assessment process

<table>
<thead>
<tr>
<th></th>
<th>1-2</th>
<th>3-4</th>
<th>5-6</th>
<th>7-8</th>
<th>9-10</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Peer-assessment with rubric “Has been very interesting”</td>
<td>9.7%</td>
<td>11.2%</td>
<td>15.7%</td>
<td>35.8%</td>
<td>27.6%</td>
</tr>
<tr>
<td>B. Peer-assessment with rubric “Has been very good”</td>
<td>10.4%</td>
<td>11.2%</td>
<td>16.4%</td>
<td>34.3%</td>
<td>27.6%</td>
</tr>
<tr>
<td>C. Peer-assessment with rubric “Is not useful”</td>
<td>59.7%</td>
<td>13.4%</td>
<td>18.7%</td>
<td>5.2%</td>
<td>3.0%</td>
</tr>
</tbody>
</table>

➢ It seems that teachers should explain the purpose of conducting peer assessment clearly at the very beginning of the exercise. In addition, sufficient training for peer assessors should be provided, so that they become more confident about themselves, as well as having more confidence in their peer assessors.

(Strijbos et al. 2010)
LIMITATIONS OF THE STUDY

- Use of rubrics in only one examination
  - in studies where the rubric was introduced during one period only, or where the students got only a couple of lessons in self-assessment, the effects reported are small and only partial. (Andrade, 2001; Andrade & Boulay, 2003)

FUTURE LINES OF WORK

- CoRubrics GAFE 2.0
  - It allows to make comments while answering the rubric.
  - It allows peer-assessment, self-assessment and teacher assessment in the same rubric providing the differentiation in grading and feedback.

(https://sites.google.com/site/corubricses/funcionamiento-corubrics-gafe)
CONCLUSIONS

- *E-rubrics* seem to have the potential to promote learning by making criteria and expectations explicit, facilitating feedback, self-assessment and peer-assessment.

- The importance of students in their own learning process requires their participation in the assessment task, fact that is globally appreciated by the students.

- Information analysis gathered by the instrument described has allowed to confirm that the learning experience has been considered interesting, motivating, it has promoted participation, cooperative work and peer-assessment.

- Transparency and clarity items seem to concern students, issue which is not solved by the use of an instrument.

- The use of *e-rubrics* increases engagement levels when attention is focused on their guidance and reflexion role.
THANK YOU VERY MUCH
STUDENT ENGAGEMENT AND PERCEPTION OF eRUBRIC-BASED EVALUATION PROCESS

Authors: José Miguel Tricás (PhD, MsC, OMPT, PT) → jmtricas@unizar.es
         César Hidalgo (PhD, MsC, OMPT, PT) → hidalgo@unizar.es
Speaker: Silvia Pérez (PhD, MsC, OMPT, PT) → silviap@unizar.es
Institution: University of Zaragoza, Spain