SELF-REGULATION AND SELF-ASSESSMENT OF THE COLLABORATIVE LEARNING COMPETENCE IN HIGHER EDUCATION FOR PRESERVICE TEACHERS

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Abstract

The competence of collaborative learning and the teamwork effectiveness constitute a basic and key competence in higher education. Included in the syllabus of several degrees in the field of social sciences, the collaborative competence is especially relevant for educational students, who are trained to become teachers (in pre and primary education), since teamwork is an important part of their professional role. Several are the dimensions for the analysis of this competence, although there are three dimensions repeated in different studies, also included in some international reports on teaching competences: (1) communication and support (ask and offer help), (2) developing/monitoring of collaborative roles, (3) collaborative knowledge creation (participation and interdependence).

From these three dimensions, an assessment tool (rubric) was created, considering the whole process, the planning the task, the regulation of the performance and the final evaluation. In order to obtain an index of the effectiveness of the process, a number of activities were asked to students for being analyzed in the different groups (dynamics, work methodology, involvement, participation, interaction, commitment, responsibility, contribution, roles, inclusion, relevance, attitude, climate, communication, etc.).

The paper concludes with the importance of self-assessment as a way of self-regulation in teamwork, emphasizing learning and its impact on higher education and professional development in future teachers. According to this, potential feedbacks and forwards are immersed in the evaluation processes that can help students training in the collaborative learning competence.

Keywords: Collaborative learning, digital competences, higher education, self-assessment.

1 INTRODUCTION

In educational studies, regardless of their specialty, to promote the acquisition of the teamwork competence is relevant, since it is one of the transversal competences necessary for the students’ professional future [17,18].

Besides, the teamwork is considered an essential skill because it has a considerable impact on the professionalization of students who, upon completing their studies they will need to design, plan, implement and evaluate teaching and learning processes in collaboration with other teachers and other professionals of the center itself and other educational services.

According to several studies, the teamwork competence is related to higher levels of achievement, greater long-term retention and higher levels of reasoning [10, 24, 34]; also with a greater will before difficult tasks to persist in the achievement of objectives [26]; with intrinsic motivation [32] and the facility to transfer learning [25]. In addition, collaborative efforts exert a considerable influence on the reasons for the dropping of studies, preventing the students’ abandonment [11].

With the introduction of the European Higher Education Area (EHEA), the construction of working groups has been promoted as the basis of many teaching and learning strategies. Teachers consider quickly the advantages of this teaching approach from the connection between learning and the development of specific and transversal competences [21]. However, the preparation of students for teamwork and the planning of management strategies of group members are often not considered in their initial training [37,29].

The active participation of students in their learning process is a significant factor for the development of skills [13, 6]. In this regards, if we use the assessment and place the assessment as a learning
strategy itself -understanding it as formative- and trainer assessment at the same level, we are promoting a sustained authentic evaluation based on learning along with ensuring formative processes that enable meaningful learning [12, 27, 16]. This type of continuous evaluation and consideration of learning style involves designing feedback and feedforward processes [30, 4, 7, 2, 23, 22, 16].

2 SELF-REGULATION AND SELF-ASSESMENT

The university education progresses through the goal of meet the autonomous learning of the students. This autonomy can be enhanced through the design and development of self-regulation processes that promote metacognition [20]. These processes facilitate that students gain better knowledge of their own level of competence, reflect on what they can do to solve the training tasks and become aware of all those skills that must be improved to face the new learning challenges that arise [1, 38, 8].

We understand self-regulation as the set of self-generated thoughts, feelings and actions that are systematically planned and adapted in order to achieve some academic objectives. Consequently, self-regulation involves assessing personal competences and requires, at the same time, the activation of individual actions of appropriation of the value information and its integration in the academic development process. Literature has evidenced that students who have developed the capacity for self-regulation also have a greater commitment in the learning processes and, progressively, assume their responsibility before planning and controlling future processes.

When students self-regulate the development of a teamwork, they take a role of evaluator of their competence development. This is to say that while they are evaluating, and so, they learning and acquiring the habit of self-assessment [3, 5, 33, 31]. For aiming this, teachers need to generate spaces, moments, tools and resources that support the self-assessment of the students. One of these resources may be the use of self-questioning strategies such as rubrics.

The rubric is an assessment instrument of registration that has certain criteria or dimensions to be evaluated by levels or gradations of quality, which finally results in a situation among the performance standards. The quality of a rubric is determined by its validity, efficiency, effectiveness, reliability and relevance [16]. While the rubric use is very simple, its elaboration is complex and requires time, reflection, and debate.

It should be noted that the rubric can also be used in the co-assessment processes. The co-assessment [19, 15, 35, 28] is the evaluation performed by peers, also known as peer assessment. De Barker [9] and Van den Boom [36] point out that it is important to extend the experience from the own evaluation to the co-evaluation in order to sustain them and to sequence their levels of difficulty for a real impact on students' learning. In this sense, the experiences of peer assessment around the competence of teamwork should be introduced gradually; a good way is to initiate this type of experiences through rubrics or questions about actions or specific attitudes of the peers.

3 METHODOLOGY

This paper reports the preliminary results of an innovative teaching project, which aims at designing and validating a rubric on the collaborative learning competence, through the interdisciplinary collaboration of teachers from two universities (University of Salamanca and Autonomous University of Barcelona).

In the first phase the rubric was designed. Considering that there is no consensus in the definition neither the dimensions of teamwork competence, however, there are three dimensions repeated in different studies, included in some international reports on teaching competencies from the European Commission and the OECD:

1 communication and support (ask and offer help)
2 developing/monitoring of collaborative roles
3 collaborative knowledge creation (participation and interdependence).

Based on these three dimensions, a rubric has been created as an assessment tool, which considers all the process, task planning, performance regulation and final assessment (Table 1).
Table 1. Rubric for the evaluation of teamwork competence.

<table>
<thead>
<tr>
<th>INVOLVEMENT AND PARTICIPATION</th>
<th>My participation has been very scarce. I have participated only in one of the parts of the work / activity</th>
<th>My participation has been limited and limited to some parts of the work / activity</th>
<th>I have participated in most of the activities (theoretical development, information gathering, presentation)</th>
<th>My participation has been high, I have acted with commitment and perseverance</th>
</tr>
</thead>
<tbody>
<tr>
<td>INITIATIVE AND ACTIVE ROLE</td>
<td>I have hardly contributed ideas to carry out the work, and never or rarely have proposed suggestions for improvement</td>
<td>I have generally accepted the proposals of others. I have offered ideas, but I have rarely proposed improvements</td>
<td>I have had an active and participatory role, often offering suggestions and suggestions</td>
<td>I have always provided useful ideas to the team and I have also encouraged others to participate, or have initiative.</td>
</tr>
<tr>
<td>RESPONSIBLE TIME MANAGEMENT</td>
<td>I have rarely delivered work on time and the group has had to change their deadlines or take on my work to meet deadlines</td>
<td>I have often delayed delivery. Other members of the team have had to remind me to keep an eye on deadlines</td>
<td>I have done the tasks on time, other members of the group have made reminders, but it has not been necessary to modify or delay tasks</td>
<td>I have kept focused on the work that was needed and even at the end I offered my help or I supported my colleagues</td>
</tr>
<tr>
<td>COMMUNICATION AND COHESION</td>
<td>I have rarely heard and shared the ideas of other colleagues. I have barely helped to maintain the cohesion of the team.</td>
<td>Sometimes, I have listened to the ideas of my colleagues, but they have not integrated into the work. I'm not worried about the unity of the team</td>
<td>I prefer to distribute tasks. I have listened and shared the ideas of my colleagues, in a dialoguing way, but on a few occasions I have offered to integrate them.</td>
<td>I have always listened and considered the ideas of others, I have tried to integrate them, looking to maintain the cohesion of the team</td>
</tr>
<tr>
<td>CONFLICT RESOLUTION</td>
<td>In situations of disagreement or conflict I have not heard other opinions or accepted suggestions. I find it hard to accept other opinions that are not mine.</td>
<td>In situations of disagreement or conflict, I have rarely heard other opinions or accepted suggestions. I have not proposed alternatives for consensus, but I have accepted them.</td>
<td>In situations of disagreement or conflict, I have almost always heard other opinions and accepted suggestions. Sometimes I have proposed alternatives for consensus or solution</td>
<td>In situations of disagreement or conflict I have always heard other opinions and accepted suggestions, proposing alternatives for consensus or solution</td>
</tr>
</tbody>
</table>

In the second phase, the rubric was used by the authors in different ways:

METHOD 1: The first method is based on the direct use of the rubric during the self-assessment process of the student around the personal perception of the teamwork competence. From this evaluation, the student automatically generates an immediate feedback. Also, the student quickly visualizes her/his own level and where s/he should go. However, during the process of validation, it has been considered a complementary instrument, from which each of their teammates were asked to evaluate them as a group, using the same rubric, so that at the end of the process the student has their own self-assessment as well as the other carried out by their classmates. A simple and quick self-co-assessment process were carried out via a technological resource that facilitates this task. In our case, we choose the use of CoRubrics [14], a free ICT tool without advertising.

METHOD 2: The rubric has allowed to obtain an effectivenss index of the process indirectly. The rubric has also allowed the design of a questionnaire (see Table 2) that, after being contrasted with teachers, has been embedded in Google Forms. Google Form is one of several free online questionnaires that we can be used to obtain information from students through a survey. The results are visualized by the questionnaire administrator -in this case the university teachers- in an individual report of the answers given by each participant (not a co-assessment report) and in spreadsheet-bases format (Excel). After all the data are collected. These data, unlike the previous method, should be treated by teachers before showing students.
In this case, the questionnaire was administered to students, through a web link. After that, each teacher decided how to carry out the feedback with the aim of enhancing self-reflection and self-regulation of students in the learning and development of teamwork competence. The teacher could make a summary of the data and a general comment of the results obtained in the group-class and even present graphs, could perform a dynamic of self-knowledge in one of the seminars, could develop group or individual tutoring, etc.

Table 2. Questionnaire for co-assessment

<table>
<thead>
<tr>
<th>Question</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am satisfied with my individual contribution to teamwork</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>I am satisfied with the group performance, fruit of the work of all</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>All group members have had the opportunity to participate and learn</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>The communication between all the members of the group has been positive and fluid</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>There have been no conflicts, or if there have been conflicts</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>We have reached agreements through dialogue and seeking the consensus of the majority</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>The opinion of some has not been imposed more than others</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>The deadlines for the tasks and the final delivery / exhibition</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>We have enjoyed teamwork</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
</tr>
</tbody>
</table>

It is important to consider the structure of the combination of closed and open questions in the questionnaire as fields are mandatory response. This implied that all students had to reflect through an argumentative text about the assessment elements of teamwork competence (dynamics, work methodology, participation, interaction, commitment, responsibility, roles, inclusion, contribution, attitude, communication, etc.).

4 RESULTS

With the use of both methods, very high levels of student and teacher satisfaction were achieved. The relevance was not the format or the alternative processes for the evaluation of the competition but the use of well-designed self-evaluation guidelines based on reflective practice as a form of self-regulation in teamwork. We present the results twofold, including evidences from both methods.

Beginning with first method, the suitable moment to carry out the self-assessment was chosen by each teacher according to its purpose: to promote change during the process of an activity and to improve the quality of the final product requested (it implies immediate individual and group self-regulation), to promote only the change for future teamwork whether academic or professional (involves transfer of self-regulation). In both cases, the competence of teamwork was favored. It must be said that not always in a learning process there is enough time to develop the first case.

On the other hand, another relevant fact is that the self-evaluation of teamwork competence allows the teacher to move from group evaluation to individual evaluation. The method one provides the teacher elements to discriminate and contrast with other evidence the work that has been done by each of the students in the group. For example, evidences used for comparison of the individual learning were: the registration of connections to the group online space, the contributions in an online forum, or in a group repository, in a digital collaborative document or in face-to-face tutorials, in the oral presentations, if they exist, such as the demand for questions surrounding the content of the activity, etc.).
Regarding the second method, we used the GoogleForms to send the students to participate in the self and co-assessment process. A total of 251 first year students in the Degree of Teacher Education participated, only in the University of Salamanca (from Salamanca, Zamora and Ávila districts).

A significantly higher values were found in the self-assessment than the co-assessment. This means the students rate higher our own appraisals, compared to group performance. 52% were very satisfied, plus 43% who were satisfied with their personal contribution to the group, in terms of “implication and participation in the group work”. However, only 42% were satisfied with the performance of all the members of the group.

As depicted in figures 1 and 2, there were differences in between the assessment of “implication” and the “taking the lead (initiative)”. While majority of students assume their participation contributes to the group work, only 32% takes the active role of leader, with higher level of involvement.

![Figure 1. Percentages of self-assessment in the Rubric, item “implication”](image)

![Figure 2. Percentages of self-assessment in the Rubric, item “leadership”](image)

21% of participants reported that they did not enjoyed during the teamwork. Conflicts were referred, regarding the distribution and responsibility in the tasks. In terms of effective communication in the group, 90% appreciate that agreements have been generated in consensus, through dialogue. However, 20% consider that the opinion of some were imposed over others. What is more, 40% recognized that there were conflicts that were not resolved effectively.
5 CONCLUSIONS AND IMPLICATIONS

One of the main implications for future practices is that the information provided by the self and co-evaluation can serve to self-regulate planning and teaching actions. For example, it has been observed that when the teacher guides the beginning of team work and requests in writing the initial operating agreements settled by the group together with the temporal planning of the sub-tasks that the group demand implies, they favor the success of the work academic since it allows to identify deficiencies or bad formulations; all these implies a process of awareness of the students regarding what is requested. On the other hands, if during the process they are asked for intermediate tasks of follow-up of the group it favors an appropriate time management, redirect the work if it is necessary from the debate among the students, make decisions before the final stage, flourish hidden conflicts that if they appear in the final stretch are more complex to solve, etc.

This self-regulation of the planning and teaching actions based on the self and co-evaluations of the students around the competence of teamwork have to do also with the socio-affective domain. For example, in certain circumstances or predictions the teacher can encourage dynamics of socialization, motivation, interest promotion, responsibility, etc. It must be said that the experience is a degree, so the experience teachers may bring the most relevant actions and prevent certain detractor for the academic success in the group work.

Exchanging of experiences among the university teachers favors the knowledge of different strategies for teaching and learning around the acquisition of the collaborative learning competence, especially to overcome some difficulties found by students. The main focus was on preventing the conflicts or how to advise students to manage and solve it based, mainly, on the interdependence and the responsibility when sharing a task.

Finally, we conclude that the rubric is a useful support for learning self-regulation and co-regulation of teamwork, as it offers a critical analysis of individual and group work evaluation.

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