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Perceptions of Students toward Learning-Oriented Assessment: The Potential of Peer Assessment

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Abstract. This study used a mixed approach to examine the implications and benefits of intergroup peer assessment in the context of cooperative work in higher education. The main objective was to analyze how this assessment strategy influenced learning, motivation, and the development of transversal competences of a sample of 305 students who were enrolled for a degree in primary education at the University of Zaragoza. An ad hoc questionnaire was used to collect quantitative and qualitative data on students' perceptions of their engagement with the task, the relationship between peer assessment and their learning, and the improvement of their competences, such as active listening, constructive criticism, and critical judgment. Firstly, quantitative and descriptive analyses were carried out. A Cronbach's alpha reliability analysis was also carried out. Secondly, in order to structure the qualitative information, a category tree was developed. The main results show that students value peer assessment positively because it facilitates their active learning, improves group cohesion, and fosters the development of key competences. In addition, the researchers observed an increase in motivation, ability to work in a team and critical reflection on the results and processes of students' own work. These findings suggest that intergroup peer assessment not only supports knowledge acquisition, but also promotes cooperation between and engagement and critical thinking by students. In conclusion, intergroup peer assessment emerges as a powerful tool to enhance learning and competence development in higher education by proposing a more participatory and formative approach to assessment processes.

Keywords: peer assessment; learning-oriented assessment; cooperative learning; competences; higher education

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1. Introduction

Peer assessment has gained relevance in higher education because of its potential to foster active learning, critical reflection, and the development of metacognitive skills (Akintolu & Adewoye, 2024; Bonoff et al., 2024; Topping, 2017). This approach promotes collaboration among students and encourages them to take responsibility in the evaluation process, thereby contributing to greater motivation and engagement (Hossain et al., 2024). Additionally, research has shown that feedback provided by peers can improve the quality of learning and aid in the acquisition of key competencies (Falchikov & Goldfinch, 2000; Flores et al., 2020). However, in classical assessment methods, which permeate much of the evaluation practices of higher education institutions, the teaching staff have traditionally been the figures who perform the task of assessment (Ibarra-Sáiz & Rodríguez, 2010), while the students have been relegated to a passive role with little or no participation in the evaluative processes. The tests that are usually used are limited, to a large extent, to pursuing a reproduction of knowledge, and encourages memorization rather than comprehension (Álvarez, 2008). Even today, the exam still prevails as the main assessment instrument (Alsowat, 2022; Paternina & Quessep, 2017; Villarroel et al., 2020) and grading as the fundamental purpose. Likewise, methodologies still have a mainly summative character and do not require students to demonstrate other, complex skills and knowledge such as critical capacity or teamwork (Almerich et al., 2020) and, likewise, do not allow students to self-regulate, owing to the absence of *feedback* during learning. This conception and application of assessment undoubtedly conditions learning by limiting its potential to a mere process of certifying or verifying what has been learned, rather than being a process of optimizing learning.

However, assessment should focus on facilitating learning, which requires a change in the way it is understood and implemented. If such change is to take place, any assessment procedure we use should be geared to improve and promote meaningful and lasting learning (Ibarra-Sáiz & Rodríguez, 2010). We agree with Andreu-Andrés (2009) that, if students are to develop certain competences that favor their personal and professional development, they must be provided with situations in which they develop critical thinking about the results of their work and the processes they have followed. To this end, they must abandon the passive role of following "instructions" in processes that are controlled by academic experts and, instead, become actively involved in the assessment, revision and improvement of their own learning (Tang & Chow, 2007). In this sense, from the learner's point of view, assessment has a positive effect on their learning when it is related to authentic tasks, represents reasonable demands, encourages learners to use knowledge in a realistic context, supports the development of a wide range of skills, and is perceived as beneficial in the long term (Brown, 2015).

For all these reasons, assessment should be considered as an enriching tool that reflects the student's level of learning. It should be a continuous process to highlight progress and difficulties in teaching and learning, redefine assessment practices and provide feedback for formative assessment (Boud &

Soler, 2023), by replacing the traditional assessment that is focused on final results (Topping, 2017). Hence, in recent years, there has been talk of "learning-oriented assessment" as a learning opportunity (Jalilzadeh & Coombe, 2023; Wakid et al., 2024), and as a fundamental goal of the educational process (Sánchez, 2022),. This process is based on three key aspects (Álvarez, 2008; Wicking, 2022): considering assessment activities as learning activities, involving learners in the assessment process by giving them an active role, and providing *feedback* during learning, i.e. giving assessment a formative character.

In this regard, it is worth mentioning learning-oriented assessment, which has become a key pillar for promoting a more participatory and student-centered education, and transforming the role of assessors so that it is a more collaborative approach (Boud & Molloy, 2013). In this context, peer assessment has proven to be an effective strategy for fostering autonomous learning and critical reflection; it also reinforces a sense of shared responsibility in the educational process (Topping, 2017). Several studies have documented its positive effects, which include improvements in critical thinking skills, self-regulation of learning, and the development of metacognitive competencies in students (Van-Gennip et al., 2010). Additionally, it is reported that this approach contributes to richer and more detailed feedback, which supports a deeper understanding of the content (Ibarra-Sáiz & Rodríguez, 2020). Research also highlights the role of peer assessment in improving student motivation and engagement, creating a collaborative and socialized learning environment (Topping & Ehly, 2001). However, some studies point out that the implementation of this practice may face barriers, such as resistance from both, students and teachers, toward this evaluative model (Falchikov, 2000). Despite these challenges, peer assessment remains a key tool for strengthening student-centered higher education (Double et al., 2020).

Learning-oriented assessment introduces a more holistic and long-term approach, using feedback not only to correct but to foster autonomy and reflective learning. Unlike formative assessment, which focuses on immediate performance improvement, learning-oriented assessment promotes a continuous process of self-improvement. This approach has been shown to enhance motivation and student engagement (Boud & Soler, 2023). In this sense, learning-oriented assessment focuses on using assessment strategies that promote and maximize students' learning opportunities, rather than on the certification or validation of knowledge through summative assessment (Keppell & Chan, 2006). This model helps to embrace participatory and collaborative assessment processes that rely on an open, flexible, and shared conception of knowledge.

Of the various assessment strategies that meet these conditions, *peer assessment* is a good practice for promoting learning opportunities. This type of assessment involves a group of students who issue judgments and comments on the work of other groups (Brew, 2003), and assess the performances and productions of their peers on the basis of previously defined criteria and by

providing *feedback.*

The benefits of this type of assessment strategy in terms of learning and competence development are diverse. According to Brown and Dove (1996), it enhances students' control over their own learning. It encourages active student participation and promotes cooperation, thereby making the learning process a shared one. It also helps students make their learning more direct and practical. Similarly, authors report improved motivation for groupwork (Loureiro & Gomes, 2023; Panadero et al., 2023), increased personal responsibility (Carless & Chan, 2017), better judgment skills (Segers & Dochy, 2001) and an improved ability to give appropriate feedback to peers. It also leads to better attitudes toward and critical assessments of students' own work. Moreover, we can consider this type of assessment as one of the most effective ways to promote collaboration and cooperation among students (Prins et al., 2005) because it encourages dialogue, interaction and the construction of shared meanings (Elwood & Klenowski, 2002). It also fosters critical thinking (Kumar et al., 2023) which is essential for students' learning, so that they can reflect on the process they followed during a task and the final results obtained (Bordas & Cabrera, 2001).

Despite increasing interest in peer assessment in higher education, there are areas that still require research, such as its influence on the learning process, the acquisition of competencies, student commitment to the task, and student motivation to learn (Ibarra-Sáiz et al., 2020). The relationship between peer assessment and autonomous learning remains an underexplored topic, particularly regarding its impact on the development of metacognitive and reflection skills (Topping, 2017). Additionally, current studies have not sufficiently examined how peer assessment affects students' intrinsic motivation or how it influences their perceptions of the quality of the feedback they receive. These gaps in the literature highlight the need for deeper investigations, to optimize the implementation and benefits of this methodology in higher education.

We designed an evaluation experience for higher education that aims to implement and investigate the didactic implications and benefits of this evaluative strategy in our classrooms. Specifically, we focused on assessment processes in the context of cooperative work and teamwork, by implementing the intergroup peer assessment strategy with a formative function. Thanks to this approach, we provide situations in which students can develop their individual and collective critical thinking by reflecting on the results of their work and the process they followed.

2. Objectives

Considering the theoretical background and given the scarcity of studies reported by the literature, the present study was proposed to analyze students' perceptions of the potential of intergroup peer assessment in their learning. In order to achieve this general objective, this study aimed to analyze students' perceptions of their participation in the peer assessment process and:

1. Students' commitment to the task;
2. Students' learning processes;
3. Students' motivation to learn;
4. Whose contribution to the improvement of academic productions;
5. Students' understanding of evaluative processes; and
6. Students' acquisition of transversal competences.

3. Method

A mixed-method study was designed, both in terms of approaches and data collection and analysis, with the aim of analyzing the experiences of intergroup peer assessment of students enrolled for a Bachelor's degree in Primary Education.

The integrated methodological approach combined quantitative and qualitative analyses, which allowed us to achieve a deeper understanding of the social phenomena being studied. This methodological combination reinforced the robustness of the results obtained (Dawadi et al., 2021), while increasing their relevance and effect on educational practice, and providing a broader and more meaningful framework for the application of results.

3.1. Sample

A total of 305 students of the Bachelor's degree in Primary Education at the University of Zaragoza participated in the study. Of the students, 77% were female and 23% male. This distribution reflects the general gender composition of this degree, and a predominance of women in the teaching profession. The mean age of the participants was 19.2 years (SD= 2.9).

because we were interested in accessing a specific and accessible group of students, the sample was selected by non-probability convenience sampling. The inclusion criteria were being enrolled in the first year of the Bachelor's degree in Primary Education, attending classes regularly and agreeing to participate in the study voluntarily. In addition, we ensured that the participants had no previous work experience as teachers, in order to guarantee homogeneity in the analysis of the results.

3.2. Instrument

Once a thorough literature review had been carried out, a questionnaire was designed for data collection. The instrument was divided into three parts: the first section collected socio-demographic data (gender, age, university degree), the second collected quantitative data, and the third collected qualitative information.

This questionnaire was based, firstly, on the citizenship competences model developed by the Council of Europe. This theoretical model addresses all the transversal or generic competences we need to live together as equals in culturally diverse democratic societies (Council of Europe, 2016). Secondly, the questionnaire is based on the questionnaire designed by Sánchez-Martí et al. (2019).

The quantitative data collection section of the questionnaire involved 34 items with a 7-point Likert-type scale format (1 = Strongly disagree; 7 = Strongly agree). It was composed of five dimensions: 1) Involvement in the task and learning process; 2) Motivation; 3) Perceptions of formative assessment; 4) Understanding of assessment processes; and 5) Development of transversal competences. Cronbach's alpha index for the set of indicators in the questionnaire was 0.98, which indicates a high degree of reliability.

The final part of the questionnaire focused on collecting qualitative data. For this purpose, a total of 10 questions were offered, which were also categorized into five areas: 1) Learning and competence development; 2) Motivation; 3) Group cohesion and teamwork; 4) Formative evaluation; and 5) Other ways of understanding evaluation.

Once the final version of the questionnaire had been configured, it was administered to participants via an online tool. Upon accessing the questionnaire, participants were provided with information regarding the purpose of the study, its voluntary nature and a guarantee of anonymity for their responses. The research was governed by the ethical principles set out in the Declaration of Helsinki (World Medical Association, 2013).

3.3. Data analysis

The statistical package SPSS Version 24.0 was used to process the quantitative data. In accordance with the research objectives, descriptive statistics, namely means and standard deviations, were applied. Using this type of statistics enabled us to do a more concise presentation of the data collected for each of the items that make up the questionnaire, which led to a better interpretation of the results.

In order to structure the qualitative information, a category tree was developed. The final tree was created through a three-step process. First, an initial version of the tree was developed deductively, based on the design of the open-ended questions. Then, the responses were analyzed using the tree, to propose changes and improvements to the initial version, if necessary. No modifications were made, so the final version of the category tree was composed of the five initial dimensions: learning and competence development, motivation, group cohesion and teamwork, formative assessment and other ways of understanding assessment.

To achieve validity in the research, a pre-analysis was conducted. Researcher 1, Researcher 2 and Researcher 4 conducted individual analyses of the qualitative

questions of the questionnaire, which were randomly selected for different participants. After performing a kappa analysis to assess inter-observer agreement, a high reliability was found between Researcher 2 and Researcher 4 for coding the responses (k = 0.79). Therefore, these two researchers were assigned the task of analyzing the responses. Subsequently, they both checked the same response at different times to calculate intra-observer reliability, for which they obtained satisfactory results (Researcher 2 k = 0.82; Researcher 4, k = 0.79). These findings support consistency in response categorization, as suggested by Fleiss et al. (2003).

After this process, a categorical content analysis was carried according to Bardin's (2002) method, which focuses on semantic understanding and categorization. For this analysis of qualitative data, NVivo software (Version 1.7) was used.

4. Results

This section comprises two main sections: the descriptive analysis, and the qualitative analysis.

The descriptive analyses of university students' perceptions of the five study dimensions (learning process; group cohesion; another look at evaluation; formative evaluation; motivation to learn) that made up the ad hoc questionnaire to assess university students' perceptions of the intergroup peer assessment experience are shown in Table 1.

Table 1. University students' perceptions of the experience of intergroup peer assessment (N = 305)

Learning process	M	SD	Min/Max
It made me attach greater value to the tasks of the course	5.5	1.3	1/7
It enabled me to integrate the knowledge of the subject into my general knowledge	5.6	1.4	1/7
I became more aware of the objectives of the course	5.7	1.3	1/7
It improved the planning of my tasks	5.6	1.4	1/7
I became more responsible about my learning	5.7	1.2	1/7
It clarified any doubts I had about the course	5.2	1.5	1/7
It improved my understanding of future tasks	5.5	1.4	1/7
I learned more actively	5.8	1.3	1/7
It enabled me to plan the learning process better and make decisions relevant to it	5.7	1.2	1/7
Group cohesion			
It increased my confidence in my fellow team members	5.6	1.4	1/7
My acceptance by my groupmates improved	5.6	1.4	1/7
It improved my teamwork competence	5.9	1.2	1/7
It made me feel part of the group	5.9	1.3	1/7
It helped me to accept my mistakes	5.8	1.3	1/7
It improved communication with groupmates	6.0	1.3	1/7

Another look at evaluation			
It allowed me to compare my work with that of my classmates	6.1	1.3	1/7
I realized the importance of using different assessment strategies to evaluate different tasks	6.1	1.2	1/7
It made me anxious	2.7	1.9	1/7
It made me feel good	5.4	1.5	1/7
I became aware of the responsibility to evaluate classmates	6.1	1.2	1/7
I've had the opportunity to learn from and with classmates	6.0	1.3	1/7
Formative evaluation			
It helped me to evaluate my work better	6.0	1.2	1/7
It enabled me to see where my work could be improved	6.0	1.3	1/7
It enabled me to reflect on the process of developing the work and the resulting product	5.7	1.2	1/7
It enabled me to deliver the work after I became aware of information on areas that needed improvement	5.8	1.2	1/7
It enabled me to improve the quality of my work	6.0	1.3	1/7
It gave me the opportunity to teach others through formative evaluation	5.7	1.4	1/7
The feedback of my classmates enabled me to verify the results of my work	6.0	1.2	1/7
Motivation to learn			
It has been useful to improve the tasks of my working group	6.0	1.3	1/7
It was a useful learning strategy for me	5.9	1.3	1/7
It stimulated motivation for learning	5.7	1.4	1/7

Table 1 shows, first of all, that the students' perceptions of the peer assessment experiences for the dimension of Learning process were, broadly speaking, at high levels—above 5 on the Likert scale (1 to 7)—for each of the items. The highest-rated indicators were "I learned more actively" (M = 5.8 SD = 1.3), followed by "I became more aware of the objectives of the course" (M = 5.7; SD = 1.3), "I became more responsible about my learning " (M = 5.7; SD = 1.2), "It enabled me to plan the learning process better and make decisions relevant to it" (M = 5.7; SD = 1.2).

Secondly, the students' perceptions of the peer assessment experience for the dimension Group cohesion were rated highly— above 5 on the Likert scale (1 to 7)—for each of the items. The highest-rated indicators were "It improved communication with groupmates" (M = 6.0; SD = 1.3), followed by "It improved my teamwork competence" (M = 5.9; SD = 1.2), and "It made me feel part of the group" (M = 5.9; SD = 1.3).

Thirdly, the students' perception of the peer assessment experience for the dimension Another look at assessment, were also scored highly—above 5 on the Likert scale (1 to 7)—for each of the items, with the exception of the item "It made me anxious" (M = 2.7; SD = 1.9). The highest-rated indicators were "It allowed me to compare my work with that of my classmates" (M = 6.1; SD = 1.3), followed by "I realized the importance of using different assessment strategies to evaluate different tasks " (M = 6.1; SD = 1.2), and "I became aware of the responsibility to evaluate others" (M = 6.1; SD = 1.2).

Fourthly, the students' perception of the peer assessment experience for the dimension Formative evaluation were rated above 5 on the Likert scale (1 to 7) for each of the items. The indicators with the highest scores were "I could evaluate my work better" (M = 6.0; SD = 1.2), followed by "It enabled me to see where my work could be improved" (M = 6.0; SD = 1.3), "It enabled me to improve the quality of my work" (M = 6.0; SD = 1.3), and "The feedback of my colleagues enabled me to verify the results of my work" (M = 6.0; SD = 1.2).

Finally, the students' perceptions of the peer assessment experience for the dimension "Motivation to learn" were rated above 5 on the Likert scale (1 to 7) for each of the items. The highest-rated indicators were "It has been useful to improve the tasks of my working group" (M = 6.0; SD = 1.3), followed by "It is a useful learning strategy for me" (M = 6.0; SD = 1.3).

Table 2 presents descriptive analyses for the perceptions of university students on the experience of intergroup peer assessment and their competence development. It is done by means of 10 items related to transversal competences that made up the ad hoc questionnaire (respect, ability to give opinions, active listening, critical judgment, tolerance, flexibility and openness toward others, learning to learn, responsibility, reflection and acceptance of constructive criticism). In Table 2, it is worth noting that students reported high levels—above 6 on the Likert scale (1 to 7) —for each of the 10 competences. Although similar means were obtained for all of them, and the highest-rated competences were: "Respect" (M= 6.0; SD= 1.1), followed by "Active listening" (M= 6.3; SD= 1.1), and "Accepting constructive criticism" (M= 6.4; SD= 1.1).

Table 2. University students' perceptions of the experience of intergroup peer assessment and their competency development N = 305

Perception regarding the development of competencies	M	DT	Min/Max
Respect	6.3	1.1	1/7
Ability to express an opinion	6.2	1.1	1/7
Active listening	6.3	1.1	1/7
Critical judgment	6.1	1.2	1/7
Tolerance	6.2	1.2	1/7
Flexibility and openness toward others	6.2	1.1	1/7
Learning to learn	6.2	1.1	1/7
Responsibility	6.2	1.1	1/7

Reflection	6.1	1.2	1/7
Acceptance of constructive criticism	6.4	1.1	1/7

Continuing with the results derived from the qualitative analyses, Table 3 shows the total count of codings for the different categories that were analyzed. This method guided the thematic presentation of the research results. Regardless of the initial variables of the study, these pre-analyses provided a guide to the most relevant aspects as identified by the student participants. This type of analysis helped to ensure the validity of the results.

Table 3. Descriptive analysis of open-ended questions

Category tree	N Cod.	Cod.%
Learning and competence development	246	40.33
Motivation	27	4.43
Group cohesion and teamwork	30	4.92
Formative evaluation	138	22.62
Other understandings of evaluation	123	20.16
Miscellaneous	46	7.54

Note. N Cod. = number of times the variable was coded. % Cod. = percentage of the total number of coded references

The first dimension was learning and competence development, and was the category most frequently mentioned by students. The responses that were given show that students had a very positive view on the matter. Students perceived peer assessment to be an effective tool and valued the experience as an opportunity for improvement. In general, participants emphasized the involvement of their peers in the assessment process and reported how enriching and useful it was for their learning:

> Student 53: *It has provided me with many lessons: learning from the mistakes we have made in order to correct them and thus improve our work, learning from each other, identifying failures or aspects to improve.*
>
> Student 69: *It is a very useful and instructive experience, as constructive criticism and peer feedback is taken from a closer and less intimidating position.*
>
> Student 207: *I think it is a good way to improve the work by doing it in an active way among peers. In addition, it fosters many qualities both in terms of accepting criticism and formulating criticism toward our peers.*
>
> Student 289: *It has helped me to understand different parts of the syllabus that I didn't understand before and it has improved the way I organize myself when working.*

More specifically, some participants highlighted some of the competences that they believed they were able to work on more deeply because of this method of evaluation. The most frequently mentioned competences are creativity, teamwork, listening and respect for others, and communication skills:

Student 148: *It has improved our creativity, teamwork and improved assertiveness and communication skills, above all.*

> Student 290: *Thanks to this peer evaluation we have been able to improve our work, listen to others, know how to receive constructive criticism and respect each other's opinions.*
>
> Student 292: *It has provided me with the development of transversal competences such as cooperation, listening and respect, among others.*

Regarding the second dimension, students gave fewer responses related to motivation, indicating that, although some participants were motivated by this experience, it was not a dominant factor. In general, involvement with their peers was the category that motivated the students who referred to this dimension:

> Student 196: *I think the fact that our peers were going to evaluate us made us more involved. We had an extra motivation to try to get everything right to get good feedback from our peers.*
>
> Student 251: *We are used to being evaluated by teachers, but now that we had to be evaluated by other classmates, we felt the need to do our best. This motivation has helped us in both directions, both to do well and to evaluate others well.*

The next dimension is group cohesion and teamwork. Student responses in this dimension suggest that peer assessment can strengthen collaboration within teams. It was reported that students indicated that that peer assessment contributed to improving their ability to work cooperatively. Some responses concerning this experience are the following:

> Student 92: *Learning from others, both from their mistakes and from what they have done right. It has also taught me to work in larger working groups and to make more serious reflections as it is about the work of others.*
>
> Student 123: *It has taught me not to focus only on my own opinion, as well as to open up to the rest of the group in order to reach a group decision when evaluating the other groups.*

In turn, many students valued formative evaluation, as indicated by a significant number of references to it. Students indicated that they realized that feedback helped them to improve, and they recognized its importance in improving their projects.

> Student 7: *It has brought me many improvements to my work that perhaps I had not considered before. As well as seeing how other groups were doing it and being enriched by their ideas. It has helped me a lot.*
>
> Student 179: *I thought it was an innovative experience as I had never done it before. I think it is very useful to improve the work, and knowing the opinion of others before submitting it gives more security.*
>
> Student 200: *I find it very beneficial and positive, not only to correct the work of other groups and receive feedback, but also to see how other groups organize their work, and how we can use this as an inspiration and a tool for improvement.*

As for the last dimension, other ways of understanding evaluation, this category elicited responses that show a broader understanding of the evaluation process, and highlighting the importance of constructive criticism and self-criticism.

Students also mentioned the usefulness of this form of evaluation for their future as teachers, because it has enabled them to acquire skills and develop essential competences for their work.

> Student 75: *This experience of peer assessment has allowed me to learn about different assessment methods and the guidelines to follow. I also see it as very useful for my future as a teacher.*
>
> Student 119: *It has given me an insight into how I will influence the children in the future when I have to evaluate their efforts and work.*
>
> Student 208: *It is a way of being critical of the work of peers which will serve in the near future for our learning, so the criticism is constructive so that everyone can benefit from these "notes" and can be enjoyable for us.*

5. Discussion

In light of the results obtained, we can state that the use of intergroup peer assessment in the university classroom contributed to the improvement of the academic, social and personal development of the higher education students in this study. In general terms, students viewed this assessment approach positively and acknowledged its capacity and usefulness for heightening cohesion in the peer group, promoting active and meaningful learning, increasing the capacity for critical reflection and encouraging the continuous improvement of learning.

As far as the learning process is concerned, the assessments made by university students showed a positive perception of intergroup peer assessment. Specifically, students highlighted their ability to learn in a more active way with this type of assessment and to become more aware of the objectives of the subject. This finding is consistent with the results of other studies (Ibarra-Sáiz et al., 2020; Wu, 2024), which report that peer assessment promotes students' self-regulated learning and active engagement. Similarly, research by Chorrojprasert (2021) also emphasizes that this type of assessment facilitates the development of students' deeper understanding of content and makes them aware of their responsibility for their own learning process.

The positive evaluations of these university students regarding the improvement of communication with peers in the group and their competence related to teamwork are confirm findings reported in the literature. It is argued that peer assessment contributes to the strength of interpersonal skills and group cohesion (Aminu et al., 2021). Peer assessment promtes a more collaborative context of help and support. Similarly, Thornton et al. (2019) highlight that team learning dynamics can increase the effectiveness of the performance of a group as a whole.

Higher education students who participated in this research also appreciated the ability to compare their work and performance with that of their peers, and realized the importance of using different assessment strategies. These results are in line with other findings (Dykhne et al., 2021; Nicol et al., 2019) which indicate that peer assessment offers a critical and broad perspective on the assessment process. Likewise, the low average score given to the indicator related to whether assessment processes cause anxiety can be interpreted as students perceiving the

opportunity for learning and improvement and preventing significant levels of emotional discomfort from appearing at times of assessment (Palomera et al., 2022). These data contrast with that of other studies that suggest that assessment dynamics can give rise to anxiety in students (Fawzy & Hamed, 2017). In this context, peer assessment seems to attenuate these more negative reactions, thus achieving safer and less stressful learning environments (Topping, 2017).

The indicators of the dimension linked to formative assessment also received high scores. These results confirm other research (Moussaoui, 2012; Yuan & Kim, 2018), which reports that using peer assessment in formative assessment processes improves students' autonomy skills and ensures more meaningful feedback. In this regard, some authors (Lichtenberger-Majzikné & Fischer, 2017) emphasize that continuous feedback is an essential factor for competence development and the achievement of education goals.

Además, la evaluación entre pares contribuye significativamente a la mejora del aprendizaje de los estudiantes y a un aumento en sus niveles de motivación, ya que este sistema es percibido por los estudiantes como una estrategia más efectiva para su desarrollo académico (González-Yubero et al., 2023; Mauri-Medrano et al., 2024). En este sentido, los investigadores sugieren que la evaluación entre pares puede potenciar la motivación intrínseca hacia el proceso de aprendizaje, al fomentar un sentido de responsabilidad y reconocimiento entre los estudiantes (Panadero, 2016).

The analysis of competence development through peer assessment processes yielded outstanding scores in the set of transversal competences. The university students' positive assessment of respect and active listening stands out, which confirms other previous research that highlights the effectiveness of peer assessment for fostering contexts of collaboration and mutual respect (Shulha et al., 2016). In this regard, Topping (2017) argues that peer assessment promotes a climate of respect between group members, because students develop the ability to take others' perspectives into consideration. Moreover, students' acceptance of constructive criticism confirms the effectiveness of peer assessment for developing the ability to receive feedback in a constructive way (Woodman & Parappilly, 2015). According to several studies (Hill & West, 2020; Irons & Elkington, 2021), the practice of evaluating others and receiving feedback contributes to a culture of continuous improvement. From this perspective, students learn to appreciate constructive criticism as opportunities for personal and academic growth. Similarly, the development of communication skills is also reflected in the results of this research. Adachi et al. (2018) found that peer evaluation increases people's confidence in their ability to communicate and collaborate with others, which is essential for success in academic and professional contexts.

The qualitative analysis of the information collected by means of this survey reinforced this set of findings. After being involved in the peer assessment experience in a formative assessment process, these university students reinforced a positive perception of their own learning and competence

development. Like studies that highlighted the value of self-reflection skills in higher education (Abildinova et al., 2024; Falcón-Linares et al., 2023; Travers et al., 2015), the usefulness of peer assessment for learning from mistakes was confirmed by the testimonies. Furthermore, students who were more motivated referred to the involvement of their peers as a key aspect. This relationship is supported by the literature (Masika & Jones, 2016), which highlights that collaboration and a sense of community are important elements of intrinsic motivation. In short, university students perceived formative assessment as an effective tool for improving their learning. In this sense, they appreciated the constructive feedback and the opportunity to improve their learning tasks that these evaluative processes offered them. As proposed by Dunn and Mulvenon (2019), these results support the contribution of formative assessment to the development of critical skills and the achievement of more meaningful learning.

In summary, and considering the set of results obtained, we highlight the relevance of implementing active methodologies and formative assessment processes in higher education contexts (Boud & Molloy, 2013). These strategies not only make learning more meaningful and relevant for students, but also have the effect of improving the quality of learning and increasing intrinsic motivation (Deci & Ryan, 2000). By actively involving students in their learning processes, greater engagement and deeper understanding of content is promoted (Panadero et al., 2023). Thus, it is clear that intergroup peer assessment is a powerful tool for promoting students' academic and professional development (Topping, 2017). With this approach, students acquire essential skills, such as teamwork, critical judgment, and co-responsibility (Panadero, 2026). The practice of assessing and being assessed fosters an environment of collaboration and respect and, as a result, students learn from each other. This interaction not only improves their academic skills, but also their interpersonal skills (Nicol & Macfarlane-Dick, 2006).

Reflection processes in the university classroom are a fundamental aspect of continuous learning improvement. Peer learning offers opportunities for reciprocal teaching and learning, which stimulates self-regulation. Students can verify their learning and the results of their productions through the feedback they receive from their peers. This feedback is crucial for supporting learning and enables students to plan their learning process better and make relevant decisions at both group and individual levels. Interaction with others also facilitates the development of internal standards to assess the quality of their own and their peers' learning. Similarly, by promoting the active involvement of the learner, interaction increases students' commitment to both the team and the learning process itself. Furthermore, peer assessment contributes significantly to the development of learning and the acquisition of competence, fosters lifelong learning, and develops autonomous individuals.

To effectively implement intragroup peer assessment with university students, it is crucial to, first, train students on the importance of constructive feedback and how to provide feedback in an objective and respectful manner (Boud & Molloy, 2013). Additionally, it is recommended to establish a clear and detailed rubric

system that guides both the assessment and feedback processes, and that ensures that all students understand the evaluation criteria (Andrade, 2019). Assigning specific roles in the assessment process, such as evaluators and those being evaluated, can facilitate groupwork and increase commitment to the task (Topping, 2017). It is also essential to create a reflection space after the assessment, in which students can analyze the feedback they received and make improvements based on it (Hattie & Timperley, 2007). Finally, it is recommended that an environment of trust and collaboration is fostering, in which students feel comfortable giving and receiving feedback (Concina, 2022).

6. Conclusion

In conclusion, and considering the results of this study, we propose that peer assessment is a useful tool for fostering learning and developing key competences in university students. This strategy not only increases students' engagement with assignments, but also boosts their motivation, critical reflection and other skills, such as active listening and constructive criticism, and basic skills, such as defending work orally. As a collaborative practice, this type of assessment reinforces cohesion in work teams and promotes taking greater responsibility for one's own learning. It also encourages students to assess both their own results and those of their peers, thereby transforming assessment into a formative rather than a merely summative process. This approach fosters autonomy and critical thinking, which are key skills in both academic and professional environments. By actively involving students in the evaluation of their own work and that of others contributes to the development of transversal skills that are likely to enrich their overall education. In short, peer assessment is a valuable strategy for transforming assessment processes into a more participatory, reflective and collaborative experience.

It should be noted that this research has certain limitations that should be considered. Firstly, the sample of participants was limited to a specific group of university students in a specific geographical context. In addition, the research design is based on self-report methods that may be subject to social desirability bias and limitations in participants' ability to objectively self-assess their experiences. For future research, it could be of interest to expand the sample to include a wider diversity of students and education contexts. Direct observations and analyses of students' academic performance could also be included. It would also be beneficial to explore the effects of peer assessment on competence development over time in a longitudinal fashion, or to analyze how these practices can be effectively incorporated across disciplines and education levels.
Finally, according to the results obtained by this study, it can be said that that learning-centered assessment promotes a more active and participatory approach to learning, in which students take a more autonomous role in their educational process. This approach enhances motivation, as it focuses on continuous progress and self-reflection, rather than only final outcomes. It also helps students develop key skills, such as critical thinking and self-assessment, which deepen their learning (Falchikov & Goldfinch, 2000). Constant feedback and collaboration are essential with this type of assessment, to improve the quality of learning and to promote cooperation (Boud & Soler, 2023). The implication of this approach is

that it facilitates the design of more inclusive, student-centered pedagogical strategies.

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