
Feedback and evaluative experience as decisive factors in student self-regulation

El feedback y la experiencia evaluando como factores determinantes en la autorregulación de los estudiantes

反馈和评估的经验作为学生自我调节的决定因素

Обратная связь и опыт оценивания как факторы, определяющие саморегуляцию студентов

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Abstract

Assessment plays a key role in learning processes in educational environments. Thus, active evaluations, such as self-evaluation, are being used increasingly frequently as a supplement to traditional evaluations due to their proven formative value. The present study analyzes the impact of the evaluations made by the students on the experience acquired by these students when they are subjected to evaluation situations and when they receive feedback from the teacher on these evaluations. To this end, two natural class groups carried out evaluations of the work done by other groups and of their own work. The difference between the groups was that one group received feedback from the teacher after the assessment and the other group did not. The results were analyzed to determine the groups' accuracy in evaluating their peers and themselves with respect to the teacher's evaluation. The data showed that both groups improved the accuracy of the evaluations throughout the sessions, with a significantly greater improvement for the group that received feedback. These results highlight the importance of evaluation in the learning process and the need to provide students with feedback on their evaluation.

Keywords: Self-assessment, Feedback, self-regulation, university students.

Resumen

La evaluación tiene un papel muy importante en los procesos de aprendizaje en contextos educativos. Así, las evaluaciones activas, donde el alumno tiene un papel protagonista, cada vez están tomando mayor presencia como complemento a las evaluaciones tradicionales debido a su probado valor formativo. El presente estudio trata de analizar el impacto que tiene sobre las evaluaciones hechas por los alumnos, la experiencia adquirida por dichos alumnos al someterlos a situaciones de evaluación y al recibir feedback por parte del profesor sobre dichas evaluaciones. Para ello, dos grupos naturales de clase realizaron evaluaciones del trabajo realizados por otros grupos y de su propio trabajo. La diferencia entre los grupos radicó en que uno de ellos recibió feedback del profesor tras la evaluación y el otro grupo no. Los resultados analizaron la precisión de los grupos evaluando a otros grupos de compañeros y evaluándose a sí mismo, con respecto a la evaluación del profesor. Los datos mostraron que ambos grupos mejoraron la precisión de las evaluaciones a lo largo de las sesiones, pero la mejora fue significativamente mayor en el caso del grupo que recibió feedback. Estos resultados nos permiten apuntar sobre la importancia de la evaluación dentro del proceso de aprendizaje y de la necesidad de proveer a los alumnos de feedback sobre la evaluación realizada.

Palabras clave: Autoevaluación, Feedback, autorregulación, universitarios.

概要

评估在教育里的学习过程中起着非常重要的作用。学生起主导作用的主动评估因其已证明的教育价值而越来越多地被作为传统评估的补充。本研究的目的是分析学生所作的评估,其置身于评价情境中获得的经验和从老师那边获得反馈的影响。为此,由两个自然班级小组对其他小组开展的工作和自己的工作进行了评估。两组之间的区别在于,其中一组在评估后收到了老师的反馈,而另一组则没有。结果分析了相对于教师的评价,各组评价其他同龄人组和评价自己的精度。数据显示,两组在整个过程中都提高了评估的准确性,但在收到反馈的情况下,改进幅度更大。这些结果使我们能够指出评估在学习过程中的重要性,以及向学生提供评估反馈的必要性。

关键词: 自我评价, 反馈, 自我调节, 大学生.

Аннотация

Оценивание играет очень важную роль в процессе обучения в образовательных контекстах. Таким образом, активное оценивание, в котором учащийся играет ведущую роль, все чаще используется в качестве дополнения к традиционному оцениванию благодаря своей доказанной формирующей ценности. Целью данного исследования является анализ влияния опыта, приобретенного учащимися, когда они подвергаются ситуациям оценивания и когда они получают обратную связь от учителя по этим оценкам, на оценки, сделанные учащимися. Для этого две естественные классные группы провели оценку работы, выполненной другими группами, и своей собственной работы. Разница между группами заключалась в том, что одна группа получила обратную связь от учителя после оценки, а другая - нет. В результатах анализировалась точность оценки группами других групп сверстников и оценки самих себя по отношению к оценке учителя. Данные показали, что обе группы улучшили точность оценок в ходе сеансов, но улучшение было значительно больше в группе, которая получила обратную связь. Эти результаты указывают на важность оценки в процессе обучения и необходимость предоставления студентам обратной связи по их оценке.

Ключевые слова: Самооценка, обратная связь, саморегуляция, студенты университета.

Introduction

University education has changed significantly since the introduction and implementation of the new undergraduate curricula. These changes have not only affected the design of the teaching and learning processes and their instruction, but also the role of the student and the desire for greater autonomy (Vicario-Molina et al., 2020). Traditional assessment is gradually replaced by alternative forms of assessment, where students become actively involved in the teaching and learning process (Sáiz & Gómez, 2020).

In this context, active assessments, where the student plays a leading role in the evaluation, are gaining increasing importance. Among this kind of active assessment, student self-assessment (SSA) is positioning itself as a form of assessment that supplements teacher assessment, as it contributes to the improvement of student learning (Panadero et al., 2016). However, the reticence of many teachers to implement this type of assessment in their classes, together with a lack of knowledge about the most suitable conditions for its development, explains the lack of consolidation of this educational proposal (Kambourova, 2020).

Student self-assessment (SSA) may be defined as the process in which students assess the quality of their achievements and gains obtained throughout the construction of their learning progress (Brown & Harris, 2014). Self-assessment has been identified as a way to quantitatively and qualitatively improve student learning by providing opportunities for students to reflect on what they are learning, especially when there is feedback (Andrade, 2019). Although there are different typologies within student self-assessment (Panadero et al., 2016), depending on their purpose, the role of the teacher and the instruments used, it is advisable to implement more formative modalities rather than summative ones, due, in part, to the didactic possibilities they offer for learning (Siegesmund, 2017). The difference between formative and summative self-assessment is based on the purpose of this type of assessment. The purpose of summative self-assessment is to find out whether the student is able to evaluate his

or her achievements in a task similarly to how a teacher would do it, whereas formative self-assessment has learning-oriented purposes; thus, the strategies used in this process are related to the self-regulation of the students' learning process, the internalisation of learning, the recognition of learning failures and emerging procedures of cognitive reconstruction (Wanner & Palmer, 2018).

In this vein, providing students with an instrument that reflects the assessment criteria or standards according to which they will be assessed helps them in their reflective exercise when it comes to assigning worth to their actions and performance (Abella-García et al., 2020). Similarly, the script or instrument used to contrast their productions with "ideal models" implies providing opportunities for them to make the appropriate adjustments and implement whatever strategies are necessary to improve their learning experience (Andrade, 2019). Other forms of active assessment strongly related to self-assessment are peer-assessment and co-assessment.

The positive effect on learning of placing learners in an assessment or testing situation has been thoroughly studied in the literature on cognitive psychology of learning. Recently, Yang et al. (2021) conducted a meta-analysis where they evaluated the effect on academic performance when students were exposed to a test versus other conditions in academic environments. This study concluded that exposing students to an assessment situation significantly increased their academic performance ($g = .449$).

In addition to the benefits of the abovementioned assessment, different authors point out that both peer assessment and cooperative assessment, conducted during the learning process, help to develop students' self-assessment skills. Specifically, Somervell (1993), Topping (1998) and Vickerman (2009) state that the results of assessing other students may be considered a part of self-assessment and may contribute to the development of self-assessment skills.

In the search for greater self-directed learning in the university context, student self-assessment and self-regulated learning (SRL) are unified within the teaching-learning process, highlighting a clear interdependent relationship between them (Panadero et al., 2017). In this approach, self-regulated learning is defined as a process in which students, as a result of the feedback received, are aware of their learning progress and they reflect on their learning in order to improve their learning. Three cyclical phases can be identified in this process. The first corresponds to the initial forecast, where the objectives to be achieved in the development of the tasks to be performed in the successive phases are established. This is followed by the execution phase, where students have to carry out the proposed tasks through the application of learning strategies and, finally, self-reflection, where they compare their productions with the established standards and measure the learning achieved. Thus, there is a strong relationship between self-regulation and self-assessment (Panadero & Alonso-Tapia, 2013). Then, self-assessment is presented as a key process associated with self-regulation (Panadero et al., 2017; Paris & Paris, 2001). In this process, students implement a range of strategies and resources, where they direct their efforts to optimize what they learn, while they consider their possibilities and areas for improvement (Larruzea-Urkixo & Ramírez, 2020). Thus, the transition from traditional learning to self-regulated learning involves metacognitive skills, such as self-awareness and reflection on the use of strategies within personalized learning contexts, in which motivation and socialization are key aspects in the analysis of students' performance

(Daura, 2017). The progressive awareness required to successfully perform self-assessment becomes a decisive component in the achievement of self-regulated learning by students (Panadero et al., 2016).

Additionally, feedback is positioned as a critical factor in the analysis of the effectiveness of SSA and SRL (Hawe & Dixon, 2017). Empowering students and providing them with feedback on their real learning status promotes the development of regulatory strategies to consolidate previous learning and scaffold the acquisition of new knowledge (Panadero & Alonso-Tapia, 2013). It is not enough for students to be able to mark their work without logical questioning. On the contrary, guidance is required from an expert or an instrument that guides them and adds soundness to the judgements they have to make about their own performance. From this point of view, feedback is understood as an essential element in the instructional process, beyond being a way of checking whether the knowledge taught has been learnt (Ibarra-Sáiz et al., 2020). Only under this consideration it is possible to conceive self-regulated learning as an aspiration to be achieved by maturing, active and autonomous students, where their approach to knowledge is directly supported by the strategies they put into practice to approach and acquire knowledge (Panadero et al., 2017).

However, recent studies point out that feedback does not always lead to improvements in student learning (van der Kleij, 2017). For example, the approach taken by teachers when providing such feedback is decisive. More constructive and strategic suggestions and comments tend to be more effective than those that take a more remedial perspective (van der Kleij et al., 2017). Similarly, the role that students assume within their learning process determines the effectiveness of this feedback. Thus, for passive learners who do not focus their efforts on redirecting their learning strategies based on the feedback provided by the teacher, the effect of the feedback is null or scarce, unlike for those who adopt a more active role. Moreover, their perception toward the usefulness of the feedback received from the teacher determines whether or not they incorporate it into their learning strategies (Jonsson et al., 2018). Students' familiarity with the criteria with which they are assessed from the beginning of the instruction helps to reduce the negative impact of these factors (Panadero & Alonso-Tapia, 2013).

Finally, the type of instrument selected to provide feedback to students and guide them in the self-assessment process plays an important role (Panadero et al., 2017). In relation to the latter, the rubric emerges as a plausible instrument to guarantee the feedback that students demand in order to advance in their learning progress, according to the findings reported in the literature (Pui et al., 2020; Yan, 2020).

Taking into account the above, the aim of the present study was to analyze how students' group evaluations on classroom assignments and their own performance are improved by their previous experience of self-assessment and the feedback received after the assessment. To this end, two groups were subjected to situations that provided them with evaluative experience. However, only one of the groups received feedback from the expert teacher after the evaluations. In order to foster the conditions for the assessment, the students were provided with the same rubric used by the teacher for the assessments, thus making both the students and the teacher aware of the assessment criteria beforehand.

Method

Participants

A natural class group of 71 students of the 2nd year of the Degree of Social Education participated in this study. The age of the students ranged from 20 to 39 years ($M = 22.48$). From the total number of students, 88.73% were females and 11.26% were males. These percentages are proportional to the distribution of males and females in the total student population in Spain (Spanish Institute of Statistics, 2020). The class group was divided into two sub-groups for each of the practical turns in the course: the group that received feedback (FB group), with 35 students, and the group that did not receive feedback (N-FB group), with 36 students.

Instruments

The teacher designed and provided students with a rubric in order to unify criteria for the assessment of the assignments submitted. This rubric established different levels of achievement for each of the sections included in the assessment report, as well as the maximum percentage of the final mark that could be obtained in each section of the report. The parts of the assessment report together with the percentages of the final mark were: 1) Personal, school and family data, 2) Background (points 1 and 2, 10% of the total), 3) Reasons/justification for the assessment (20%), 4) Techniques and instruments applied (20%), 5) Results obtained (10%), 6) Analysis and evaluation of the results (20%), and 7) Conclusions, guidelines and recommendations (20%). The rubric was evaluated and used by 5 independent teachers and showed an intraclass correlation coefficient of $r = .962$.

Procedure

This study was carried out over a four-month period during the practical sessions of a subject in the Degree of Social Education (Diagnosis and Evaluation in Social Education). This study followed the ethical standards that guide research with people, according to the Declaration of Helsinki (WMA, 2009). At the beginning of the subject, the teacher of the subject offered the students free registration for each of the practical sessions, with the only restriction that the groups could not differ by more than 4 students. This registration was done through the university's official platform and the students had to register in one of the two subgroups within the subject domain. This division of the class into two subgroups enabled the creation of our two study groups. In the first session of the practical seminars, the subject teacher (the first author) explained the procedure to be followed throughout the practical sessions. The students were instructed to form groups of no more than 4 students, and they would work together throughout the whole course. Both Group FB and Group N-FB had 9 subgroups of students. Throughout the practical sessions, these groups had to develop a diagnostic report based on different proposed cases that they would have to present to the whole class at the end of the subject. Throughout the different sessions, the teacher offered content to allow the students to apply and develop the chosen cases. In the final weeks of the subject, the different groups had to present the developed diagnostic report to the class. Prior to the presentation phase, the students received

a session in which the teacher indicated the evaluation criteria that would be used to evaluate the different sections of the diagnostic report, and the points that could be earned for each of the parts of the report. These criteria and the weightings of the marks for each section of the report were set out in a rubric that the teacher provided to the students through the virtual teaching platform. In this way, everyone knew the criteria and weights of the evaluation in advance. In order to motivate the students to be as accurate as possible in their evaluations, it was indicated that the 2 most accurate groups would receive .5 points in the final mark of the practical part of the subject.

During the presentation weeks, each group had to perform an evaluation of the diagnostic reports submitted by the different groups, as well as an evaluation of their own report. For these assessments, they were asked to use the rubric that had been provided in previous sessions. Each group had one session for the presentation, making three presentation sessions per week. The order of the groups' presentations was randomly established. Each group of students had 35 minutes to present the chosen case and the diagnostic report. After the presentation, the listening groups, who were evaluating, had 15 minutes to ask questions to the group that had made the presentation. Afterwards, all the groups handed the rubric to the teacher. At the end of each session, the teacher evaluated the group that had given the presentation. This evaluation was not made public until the end of the course.

The only difference between Group FB and Group N-FB was the role of the teacher at the end of each group's presentation. In Group FB, once the teacher had collected the evaluations of the groups, he gave feedback to the groups on the strengths and weaknesses in each of the sections of the diagnostic report. Through this feedback, the teacher specifically indicated to the students not only the weaknesses found in the work, but also what information they should have included in each of the sections of the work in order to reach the highest level of achievement in the rubric, based on the contents seen in the different practice sessions. The choice of the group that received the teacher's feedback was random.

Data analysis

The α for all analyses performed was set at .05. All analyses were performed with the jamovi software (The jamovi Project). All the assessments made by the groups on the report presentations (GA, Group Assessment) and on their own assessment (GSA, Group Self-Assessment) were collected. In addition, the teacher's evaluation of each group (Exp, Expert) was collected. The accuracy of both the group assessments and the SSA was calculated by subtracting these assessments (GA and GSA) from the teacher's assessment (Exp). The ability of the groups to assess the diagnostic report of other groups was called group assessment skill (GA-skill), and the ability of the groups to self-assess their own report was called group self-assessment skill (GSA-skill). Positive scores on these variables indicate overestimation, and negative scores indicate underestimation, while scores close to 0 are the most accurate. To analyze the development of the different assessments throughout the practical sessions, a repeated measures ANOVA was performed with the assessments of all groups for the group who presented the diagnostic report (GA-Skill) throughout the 9 days of presentations. Additionally, the groups' assessment of their own report (GSA-Skill) over the 9 sessions was also analyzed. Generalized eta squared (η^2_G) is presented to measure effect sizes.

Results

Table 1 shows the descriptive results for the average assessments of all groups in each class over the 9 presentation sessions.

Table 1

Descriptive data for the variable group assessment skill (GA-skill) per session

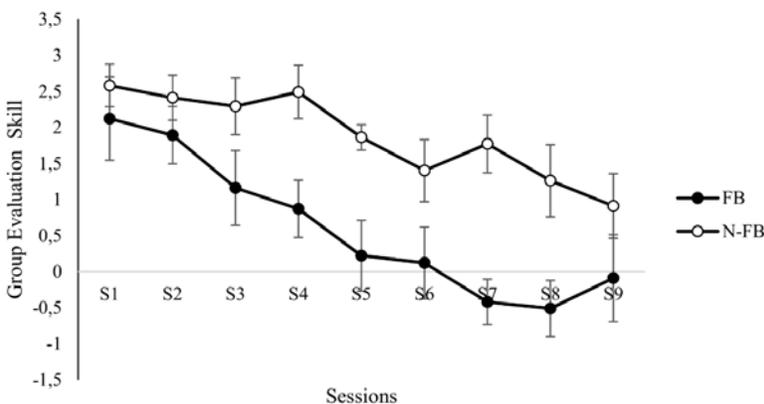
		S1	S2	S3	S4	S5	S6	S7	S8	S9
FB	<i>Mean</i>	2.12	1.89	1.16	.87	.22	.12	-.42	-.51	-.09
	<i>SD</i>	.64	.67	.85	.80	.38	.93	.87	1.08	.97
	<i>Median</i>	2.50	1.90	1.00	1.30	.15	.20	-.30	-.30	-.30
N-FB	<i>Mean</i>	2.58	2.41	2.29	2.49	1.86	1.40	1.77	1.26	.91
	<i>SD</i>	1.25	.86	1.12	.86	1.06	1.08	.68	.84	1.30
	<i>Median</i>	2.65	2.60	2.30	2.60	1.90	1.15	1.60	1.05	1.10

Note. FB=FeedBack group, N-FB non-FeedBack group. S1 to S9 indicate the session number.

These data are shown in Figure 1. As can be observed, the average self-evaluations of the groups in both classes showed overestimation at the beginning of the sessions (GA-skill is higher than teacher evaluation), and these evaluations decreased, approaching 0 (i.e., becoming more accurate) over the sessions. However, the FB group seemed to show a faster adjustment with respect to the N-FB group.

Figure 1

Average of group assessments (GA-Skill) of each group (FB vs N-FB) across sessions (S1 to S9). The bars represent the 95% Confidence Interval



In order to analyze how this adjustment process took place in the self-assessment of the groups across sessions, a 2 (Group) x 9 (Sessions) ANOVA was conducted with the variable GA-skill. This analysis showed a main effect of Group, $F(1, 17) = 17.04, p < .001, \eta^2_G = .39$, a main effect of Session, $F(8, 136) = 23.15, p < .001, \eta^2_G = .39$, and a double interaction of Class x Session, $F(8, 136) = 3.41, p < .001, \eta^2_G = .09$. These results confirmed that both groups improved in their assessment accuracy over the sessions, and it noted that the pattern of assessment improvement differed between groups. Specifically, the FB group showed greater accuracy in their assessments in the later sessions compared to those made by the N-FB group.

Figure 2

GSA-skill of the sub-groups for each class group throughout the sessions

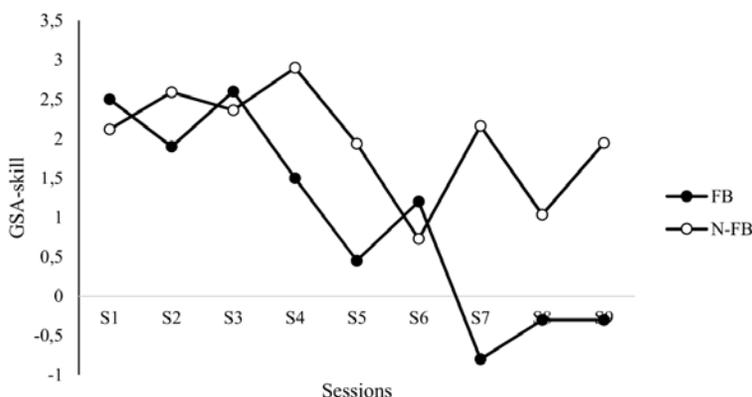


Figure 2 shows the GSA-skill variable of the working subgroups for each group-class throughout the presentation sessions. Similar to the above, the groups at the beginning of the sessions self-assessed themselves higher than the teacher's assessment (over-assessment), although, over the sessions, these self-assessments became more accurate (closer to the teacher's assessment). However, again, the subgroups in Group 1 showed a faster adjustment of the assessment than the students in the subgroups of Group 2. Figure 2 compares the GSA-skill of 1 subgroup per session for each group, which means that the data can only be interpreted descriptively and cannot be analyzed by hypothesis testing.

Discussion and conclusions

The aim of this study was to analyze how the experience of assessment and the feedback received on assessments influenced students' improvement in assessing the achievements of others and their own achievements. The study followed the recommendations of research in the field of self-assessment to provide students with criteria and instruments to implement more formative self-assessment (Abella García et al., 2020; Andrade, 2019; Siegesmund, 2017).

Based on the obtained results, the students' tendency to overestimate their ability compared to the teacher's assessment was confirmed (Thawabie, 2017). This finding is more common when students are not experts in the subject or if they are unfamiliar with the use of self-assessment strategies (Carroll, 2020). Thus, to some extent, this tendency is corroborated in our study, as it was observed that, over the sessions, the students tended to be more accurate in comparison to the teacher's scores (Yan et al., 2020). Thus, as students improve their metacognitive skills, they focus their interest on reflecting on their productions, they can compare their work with the proposed criteria, self-regulate, orient themselves towards defined goals and become more accurate in their self-assessment (Xiao & Yang, 2019). Similar studies have shown that the implementation of formative assessments is strongly linked to student self-regulation (Xiao & Yang, 2019).

Our study has also shown that students' experience of assessment and self-assessment enhances these assessment-related skills, especially self-regulation and accuracy. In this regard, studies such as the one conducted by Carroll (2020) with Australian and international populations found that the implementation of self-assessment strategies and feedback enhanced learning, especially for low achievers.

In this regard, a recent systematic review by Lerchenfeldt et al. (2019) noted that, when students were clearly aware of the grading criteria beforehand, their ability to assess themselves and their peers improved and their subject learning and teamwork abilities were enhanced. This position supports the importance of embedding formative assessments within students' learning processes (Yan et al., 2021; Zainuddin et al., 2020), especially in higher education.

Similarly, it was possible to determine the important role played by feedback in improving students' accuracy when they evaluate their productions. In fact, several studies suggest the interaction between feedback and self-regulation (Clark, 2012). This effect in our study was represented by the significant improvements shown by the accuracy of their assessments in the FB group, who received feedback based on the assessment criteria, with respect to the N-FB group, who did not receive feedback. This result is in line with the findings of van der Kleij (2017), who advocates for strategic comments in teacher feedback aligned with the assessment criteria already known to the students. In contrast, the research by Panadero et al. (2020) found that the use of self-assessment strategies by students decreased when the teacher provided feedback to the students, although they were able to self-assess more effectively, thanks to the comments provided.

It is also consistent with a systematic review carried out by Yan et al. (2021), who analyzed the factors that affect the implementation of formative assessments from the teacher's point of view. This finding should be considered in the analysis of any study on self-assessment and improvement of students' learning, since the opportunities that students will have to improve their learning, self-regulate and orient themselves towards the achievement of the objectives proposed in their educational programme will depend on how the teaching processes are planned and developed, as well as on the teacher's approach regarding this construction (Xiao & Yang, 2019).

Another important feature in our study is the use of a rubric with criteria known by the students. Both the students and the teacher used the same rubric as assessment criteria, which resulted in improvements in the assessment of both groups. The use of the rubric has been found in the literature to be one of the factors that best contributes to improving not only the accuracy of students' self-assessment, but also their

learning. An example of this is the study developed by Su (2020), who analyzed the effect of the rubric on the learning of English-related comprehension and performance skills in a Chinese population. These findings determined how the rubric improved comprehension and learning of English interpretation and performance skills. Similar results can be found in the research conducted by Calle-Álvarez (2020) (who focused on improving writing), the investigation of Tur et al. (2019) (who aimed at improving the learning and reflective skills of trainee teachers), and the study of Zhang et al. (2019), in which, within a flipped classroom experience, the rubric led to improved student performance and metacognitive awareness. Moreover, other studies even point to the implementation of co-rubrics to improve think-aloud protocols in self-regulated learning (Fraile et al., 2017).

Limitations and prospective

One of the limitations of the study is the fact that it was carried out with a natural group, which means that, although it is a representative sample of the reality of university education, it has a small sample size. Furthermore, this results in the following limitation: given that the analysis groups are class subgroups, the GSA-skill analysis only compares a BF subgroup with respect to another N-FB subgroup, which only allows inferring the improvement effect of the descriptive data, i.e., it is not possible to perform a hypothesis test. Further research should be carried out extending the sample to several natural class groups.

On the other hand, the present study focuses on the impact of evaluation experience and feedback on evaluation ability, but it does not analyze how this improvement in evaluation ability could have an impact on the improvement of academic performance. In order to make this interpretation, it would be interesting to carry out a study in which the students would have to make two presentations, one prior to the whole evaluation and feedback experience and another presentation after these experiences, in order to compare the improvement of the subsequent measure with respect to the previous measure (pre-post design with control group). It would be very interesting for future research to analyze this possible direct relationship.

References

- Abella García, V. A., Ausín Villaverde, V., Delgado Benito, V., & Casado Muñoz, R. (2020). Aprendizaje basado en proyectos y estrategias de evaluación formativas: Percepción de los estudiantes universitarios. *Revista Iberoamericana de Evaluación Educativa*, 13(1), 93-110. <https://dialnet.unirioja.es/descarga/articulo/7408493.pdf>
- Andrade, H. L. (2019). A critical review of research on student self-assessment. *Frontiers in Education*, 27(4). <https://doi.org/10.3389/educ.2019.00087>
- Brown, G. T., & Harris, L. R. (2014). The Future of Self-Assessment in Classroom Practice: Reframing Self-Assessment as a Core Competency. *Frontline Learning Research*, 2(1), 22-30. <http://dx.doi.org/10.14786/flr.v2i1.24>
- Calle-Álvarez, G. Y. (2020). La rúbrica de autoevaluación como estrategia didáctica de revisión de la escritura. *Revista de Investigación, Desarrollo e Innovación*, 10(2), 323-335. <https://doi.org/10.19053/20278306.v10.n2.2020.10628>

- Carroll, D. (2020). Observations of student accuracy in criteria-based self-assessment. *Assessment & Evaluation in Higher Education*, 45(8), 1088-1105. <https://doi.org/10.1080/02602938.2020.1727411>
- Clark, I. (2012). Formative assessment: Assessment is for self-regulated learning. *Educational Psychology Review*, 24(2), 205-249. <https://doi.org/10.1007/s10648-011-9191-6>
- Daura, F. T. (2017). Aprendizaje autorregulado e intervenciones docentes en la universidad. *Revista Educación*, 41(2), 56-74. <http://dx.doi.org/10.15517/revedu.v41i2.21396>
- Fraile, J., Panadero, E., & Pardo, R. (2017). Co-creating rubrics: The effects on self-regulated learning, self-efficacy and performance of establishing assessment criteria with students. *Studies in Educational Evaluation*, 53, 69-76. <https://doi.org/10.1016/j.stueduc.2017.03.003>
- Hawe, E., & Dixon, H. (2017). Assessment for learning: a catalyst for student self-regulation. *Assessment & Evaluation in Higher Education*, 42(8), 1181-1192
- Ibarra-Sáiz, M. S., Rodríguez-Gómez, G., & Boud, D. (2020). Developing student competence through peer assessment: the role of feedback, self-regulation and evaluative judgement. *Higher Education*, 80(1), 137-156. <https://doi.org/10.1007/s10734-019-00469-2>
- Jónsson, Í. R., Smith, K., & Geirsdóttir, G. (2018). Shared language of feedback and assessment. Perception of teachers and students in three Icelandic secondary schools. *Studies In Educational Evaluation*, 56, 52-58. <http://dx.doi.org/10.1016/j.stueduc.2017.11.003>
- Kambourova, M. (2020). ¿Qué falta por comprender sobre el concepto autoevaluación (del aprendizaje) en educación superior? Una mirada diferente desde su historia. *Avaliação: Revista da Avaliação da Educação Superior (Campinas)*, 25(3), 640-658. <https://doi.org/10.1590/S1414-40772020000300007>
- Larruzea-Urkixo, N., & Ramírez, M. O. C. (2020). Diferencias individuales en aprendizaje autorregulado de estudiantes de los Grados de Educación: género, especialidad, notas y desempeño académico. *Revista de Investigación Educativa*, 38(2), 453-473. <https://doi.org/10.6018/rie.334301>
- Lerchenfeldt, S., Mi, M., & Eng, M. (2019). The utilization of peer feedback during collaborative learning in undergraduate medical education: a systematic review. *BMC medical education*, 19(1), 1-10. <https://doi.org/10.1186/s12909-019-1755-z>
- Panadero, E., & Alonso-Tapia, J. (2013). Self-assessment: Theoretical and practical connotations. When it happens, how is it acquired and what to do to develop it in our students. *Electronic Journal of Research in Educational Psychology*, 11(2), 551-576. <http://dx.doi.org/10.14204/ejrep.30.12200>
- Panadero, E., & Alqassab, M. (2019). An empirical review of anonymity effects in peer assessment, peer feedback, peer review, peer evaluation and peer grading. *Assessment & Evaluation in Higher Education*, 44(8), 1253-1278. <https://doi.org/10.1080/02602938.2019.1600186>
- Panadero, E., Brown, G. T., & Strijbos, J. W. (2016). The future of student self-assessment: A review of known unknowns and potential directions. *Educational Psychology Review*, 28(4), 803-830. <https://doi.org/10.1007/s10648-015-9350-2>
- Panadero, E., Fernández-Ruiz, J., & Sánchez-Iglesias, I. (2020). Secondary education students' self-assessment: the effects of feedback, subject matter, year level,

- and gender. *Assessment in Education: Principles, Policy & Practice*, 27(6), 607-634. <https://doi.org/10.1080/0969594X.2020.1835823>
- Panadero, E., Jonsson, A., & Botella, J. (2017). Effects of self-assessment on self-regulated learning and self-efficacy: Four meta-analyses. *Educational Research Review*, 22, 74-98. <https://doi.org/10.1016/j.edurev.2017.08.004>
- Panadero, E., Jonsson, A., & Strijbos, J. W. (2016). Scaffolding self-regulated learning through self-assessment and peer assessment: Guidelines for classroom implementation. In *Assessment for learning: Meeting the challenge of implementation* (pp. 311-326). Springer, Cham.
- Paris, S. G., & Paris, A. H. (2001). Classroom applications of research on self-regulated learning. *Educational Psychologist*, 36(2), 89-101. http://dx.doi.org/10.1207/S15326985EP3602_4.
- Pui, P., Yuen, B., & Goh, H. (2020). Using a criterion-referenced rubric to enhance student learning: a case study in a critical thinking and writing module. *Higher Education Research & Development*, 1-14. <https://doi.org/10.1080/07294360.2020.1795811>
- Saiz, M. S. I., & Gómez, G. R. (2020). Aprendiendo a evaluar para aprender en la Educación Superior. *Revista Iberoamericana de Evaluación Educativa*, 13(1), 5-8. <https://dialnet.unirioja.es/descarga/articulo/7408491.pdf>
- Siegesmund, A. (2017). Using self-assessment to develop metacognition and self-regulated learners. *FEMS microbiology letters*, 364(11). <https://doi.org/10.1093/femsle/fnx096>
- Somervell, H. (1993). Issues in assessment, enterprise and higher education: the case for self-, peer and collaborative assessment, *Assessment and Evaluation in Higher Education*, 18, 221-233. <https://doi.org/10.1080/0260293930180306>
- Spanish Institute of Statistics (2020). Official data regarding the Spanish population by sex. <https://www.ine.es/jaxiT3/Datos.htm?t=2852>
- Su, W. (2020). Exploring how rubric training influences students' assessment and awareness of interpreting. *Language awareness*, 29(2), 178-196. <https://doi.org/10.1080/09658416.2020.1743713>
- Thawabieh, A. M. (2017). A Comparison between Students' Self-Assessment and Teachers' Assessment. *Journal of curriculum and Teaching*, 6(1), 14-20. <http://dx.doi.org/10.5430/jct.v6n1p14>
- Topping, K.J. (1998). Peer assessment of students in colleges and universities. *Review of Educational Research*, 68(3), 249-276. <https://doi.org/10.3102%2F00346543068003249>
- Tur, G., Urbina, S., & Forteza, D. (2019). Rubric-Based Formative Assessment in Process Eportfolio: Towards Self-Regulated Learning. *Digital Education Review*, 35, 18-35. <https://www.raco.cat/index.php/DER/article/view/360465>
- Van der Kleij, F. M., Adie, L. E., & Cumming, J. J. (2017). Using video technology to enable student voice in assessment feedback. *British Journal of Educational Technology*, 48, 1092-1105. <https://doi.org/10.1111/bjet.12536>
- Vicario-Molina, I., Martín-Pastor, E., Gómez-Gonçalves, A., & González-Rodero, L. (2020). Nuevos desafíos en la Educación Superior: análisis de resultados obtenidos y dificultades experimentadas en la realización del Trabajo Fin de Grado de estudiantes de los Grados de Maestro de la Universidad de Salamanca. *Revista Complutense de Educación*, 31(2), 185-194. <https://dx.doi.org/10.5209/rced.62003>

- Vickerman, P. (2009). Student perspectives on formative peer assessment: an attempt to deepen learning? *Assessment & Evaluation in Higher Education*, 34(2), 221-230. <https://doi.org/10.1080/02602930801955986>
- Wanner, T., & Palmer, E. (2018). Formative self-and peer assessment for improved student learning: the crucial factors of design, teacher participation and feedback. *Assessment & Evaluation in Higher Education*, 43(7), 1032-1047. <https://doi.org/10.1080/02602938.2018.1427698>
- World Medical Association. (2009). Declaration of Helsinki. Ethical principles for medical research involving human subjects. *Journal of the indian medical association*, 107(6), 403-405.
- Xiao, Y., & Yang, M. (2019). Formative assessment and self-regulated learning: How formative assessment supports students' self-regulation in English language learning. *System*, 81, 39-49. <https://doi.org/10.1016/j.system.2019.01.004>
- Yan, Z. (2020). Self-assessment in the process of self-regulated learning and its relationship with academic achievement. *Assessment & Evaluation in Higher Education*, 45(2), 224-238. <https://doi.org/10.1080/02602938.2019.1629390>
- Yan, Z., Brown, G. T., Lee, J. C. K., & Qiu, X. L. (2020). Student self-assessment: Why do they do it? *Educational Psychology*, 40(4), 509-532. <https://doi.org/10.1080/01443410.2019.1672038>
- Yan, Z., Li, Z., Panadero, E., Yang, M., Yang, L., & Lao, H. (2021). A systematic review on factors influencing teachers' intentions and implementations regarding formative assessment. *Assessment in Education: Principles, Policy & Practice*, 1-33. <https://doi.org/10.1080/0969594X.2021.1884042>
- Yang, C., Luo, L., Vadillo, M. A., Yu, R., & Shanks, D. R. (2021). Testing (quizzing) boosts classroom learning: A systematic and meta-analytic review. *Psychological Bulletin. Advance online publication*. <https://doi.org/10.1037/bul0000309>
- Zainuddin, Z., Shujahat, M., Haruna, H., & Chu, S. K. W. (2020). The role of gamified e-quizzes on student learning and engagement: An interactive gamification solution for a formative assessment system. *Computers & Education*, 145, 103729. <https://doi.org/10.1016/j.compedu.2019.103729>
- Zhang, Y., Chen, B. L., Ge, J., Hung, C. Y., & Mei, L. (2019). When is the best time to use rubrics in flipped learning? A study on students' learning achievement, meta-cognitive awareness, and cognitive load. *Interactive Learning Environments*, 27(8), 1207-1221. <https://doi.org/10.1080/10494820.2018.1553187>