

## INTRODUCTION

- A recent study has indicated that the position students occupy in class can be a good predictor of academic performance.
- On the other hand, studies have shown that more capable students tend to be more skilled self-evaluating (Student Self-Assessment, SSA) their achievements
- The **main goal** of this work was to evaluate this hypothesis. We will be approached from a double perspective, Frequentist and Bayesian

## METHODS

- Participants:** 134 university students
- Procedure:** After completing the exam, the students were asked to self-evaluate their performance in the exam and to indicate what confidence they had in that evaluation. Additionally, they were asked about the position they had held in class during the course.
- Analysis:** The means of the groups were compared (Class position: First rows, Intermediate rows and Final rows) with a t test, for the results in the examination, self-assessment and confidence judgment.

## RESULTS and DISCUSSION

- The position of students in class does not seem to influence academic performance.
- On the contrary, the position does interact with self-assessment ability and students' confidence judgments.
- It could be said that the students in the first rows tend to overestimate their achievements, and they also trust more in their own evaluation, compared with students in the other positions.
- Future investigations should deepen the influence of class position on other factors of teaching practice.

The position of students in class does not predict academic performance, but modulate SSA



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## Extra Table and Figures

Frequentist ANOVA							Bayesian ANOVA					
DV		SS	df	MS	F	p	η <sup>2</sup>	P(M)	P(M data)	BF <sub>10</sub>	BF <sub>10</sub>	error %
Exam	Class rows	3.13	2	1.56	0.70	.500	0.01	Null model	0.50	0.88	7.44	1.00
	Residuals	279.93	125	2.24				Class rows	0.50	0.12	0.13	0.13
SSA	Class rows	16.2	2	8.11	5.70	.004	0.09	Null model	0.50	0.11	0.12	1.00
	Residuals	166.5	117	1.42				Class rows	0.50	0.89	8.35	8.35
CJ	Class rows	5.68	2	2.84	6.62	.002	0.10	Null model	0.50	0.05	0.06	1.00
	Residuals	49.31	115	0.43				Class rows	0.50	0.94	173.03	17.30
SSA Skill	Class rows	24.2	2	12.08	6.68	0.02	0.10	Null model	0.50	0.05	0.05	1.00
	Residuals	532.8	125	4.26				Class rows	0.50	0.95	18.38	18.38

Note: DV: Dependent variables (Exam, SSA: Student Self-Assessment, CJ: Confidence judgments, and SSA Skill: Student Self-Assessment skill).

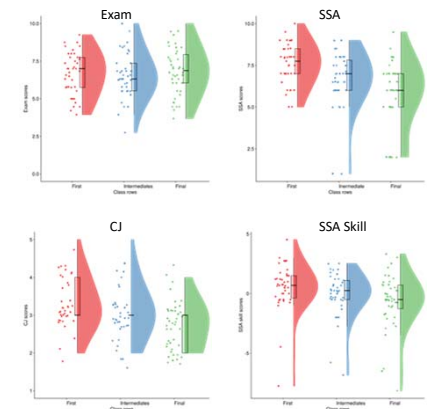


Figure 1. Average scores grouped by class position (First, Intermediate and Final) for the Exam (top left), SSA (top right), CJ (bottom left) and for SSA skill (bottom right).

***Class position as a modulating factor of academic performance and self-assessment:  
approach from a Frequentist and Bayesian perspective***

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Recently it has been indicated that the position students occupy in the classroom (the place where they regularly sit) is related to their academic performance (Smith, Hoare, & Lacey, 2018). On the other hand, numerous works have related the ability of students to self-evaluate their achievement (self-assessment) and the benefit that performance on this ability might have on academic performance and self-regulation (see for a review, Panadero, Brown, & Strijbos, 2016).

The main goal of this study was to test if the position students occupy in class is a good predictor of their academic performance. To analyze this main goal the results will be approached from a double perspective, Frequentist and Bayesian. This will allow us to have evidence on the probability in favor and against the null hypothesis.

**Method**

**Participants:** 134 university students of the Degree in Social Education of the University of Jaén. Participants range in age from 18 to 47 years (median 21). 103 participants (76.86%) were women and 31 (23.13%) were men.

**Procedure:** After completing the final exam, (Multiple Choice Exams), students were asked to indicate what score they thought they had achieved in the exam. In addition, they were asked to indicate the degree of confidence they had in their self-assessment. Finally, they were asked about the sit they had mostly occupied during the academic course. The score given by the teacher to the final exam served to check the level of self-assessment ability of students.

The dependent variables used in the study were, on the one hand, the final grade of the exam (teacher evaluation), the note students manifested in their self-assessment, and the confidence judgment on that self-assessment. The accuracy of the self-assessment ability was calculated by subtracting the value that each student gave on his or her self-assessment to the final exam score (Self - Exam in Table 1). The independent variable was the position that the students had occupied during classroom sessions (first, intermediate, and final rows).

**Result**

As can be seen in Table 1, the position students occupied during classroom sessions was not a good predictor of the final performance in the subject,  $f < 1$ . By contrast, the class position did show an effect on self-assessment, confidence judgment,  $f = 5.46$ ,  $p < 0.01$  and  $f = 6.89$ ,  $p < 0.01$ , and self-assessment ability,  $f = 3.58$ ,  $p = 0.03$

Frequentist ANOVA								Bayesian ANOVA					
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The analyzes of results can be seen in Figures 1, 2, and 3. As shown, the values of the three positions do not differ based on the exam variable. On the contrary, students seated in the first rows showed higher evaluations in their self-assessment and confidence judgments about self-assessment than students seated in the rest of the rows. Figure 4 shows the self-assessment ability by rows. Positive values would indicate an overestimation for the evaluation (higher scores in self-assessment with respect to the evaluation of the exam). Once again, students in the first rows showed higher scores with respect to the other positions.

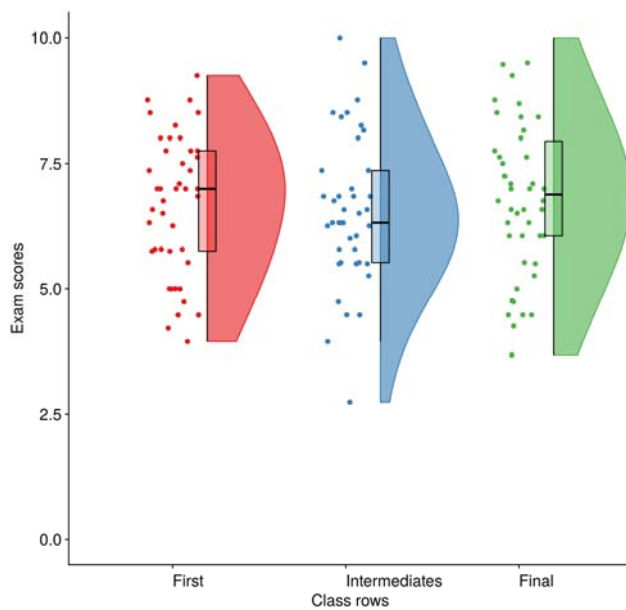


Figure 1. Boxplot for Exam by position in class

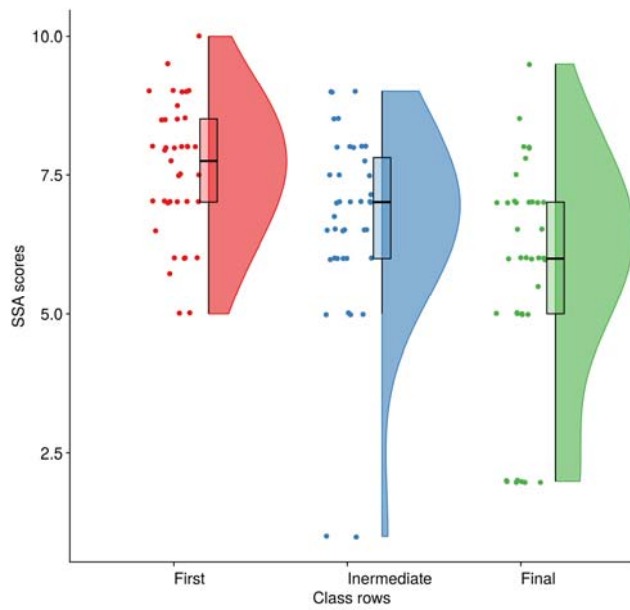


Figure 2. Boxplot for Self-Assessment by position in class

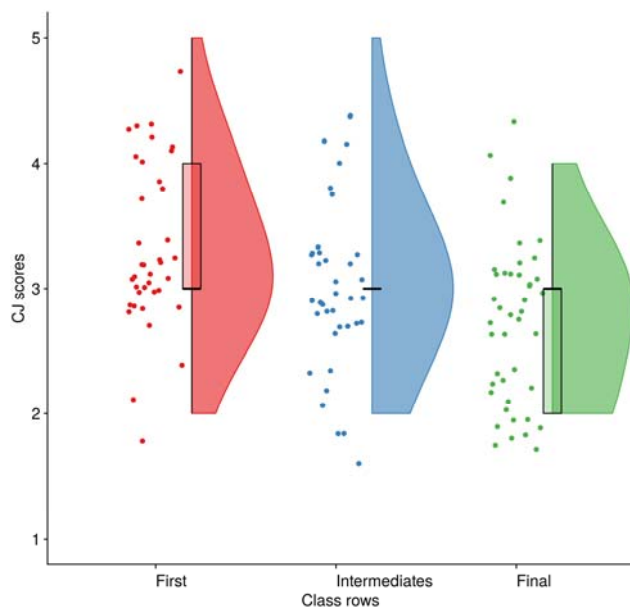


Figure 3. Boxplot for Confidence judgments by position in class

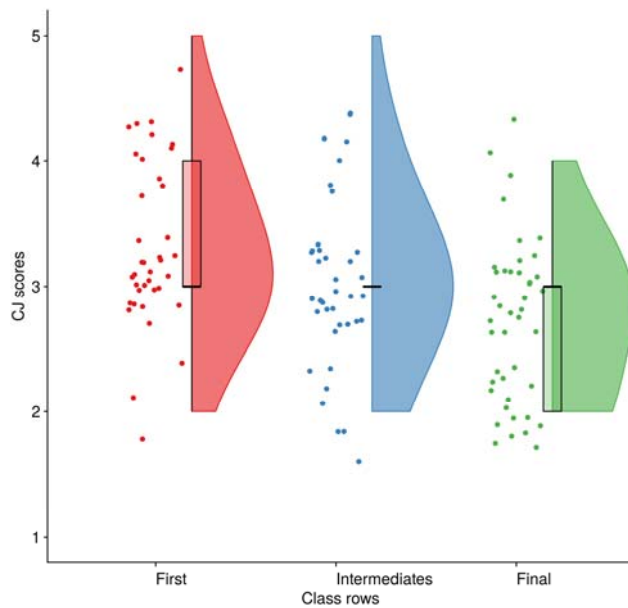


Figure 4. Boxplot for Differences between Self-evaluation and Examination (Self-Exam) by position in class.

## Discussion

The main goal of this study was to evaluate the impact that the position students occupy in the classroom has on some variables related to the teaching practice and its results, such as the academic performance in the subject and the ability of self-assessment of the students. Our results indicated that the position of the students has no influence on the academic performance of students. No differences were found in the ratings depending on the rows occupied during the sessions. On the contrary, our results suggested that the position did influence the self-assessment of the students and the confidence judgments they gave about these self-assessments.

## Bibliography

- 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.
- Smith, D. P., Hoare, A., & Lacey, M. M. (2018). Who goes where? The importance of peer groups on attainment and the student use of the lecture theatre teaching space. *FEBS open bio*, 8(9), 1368-1378.