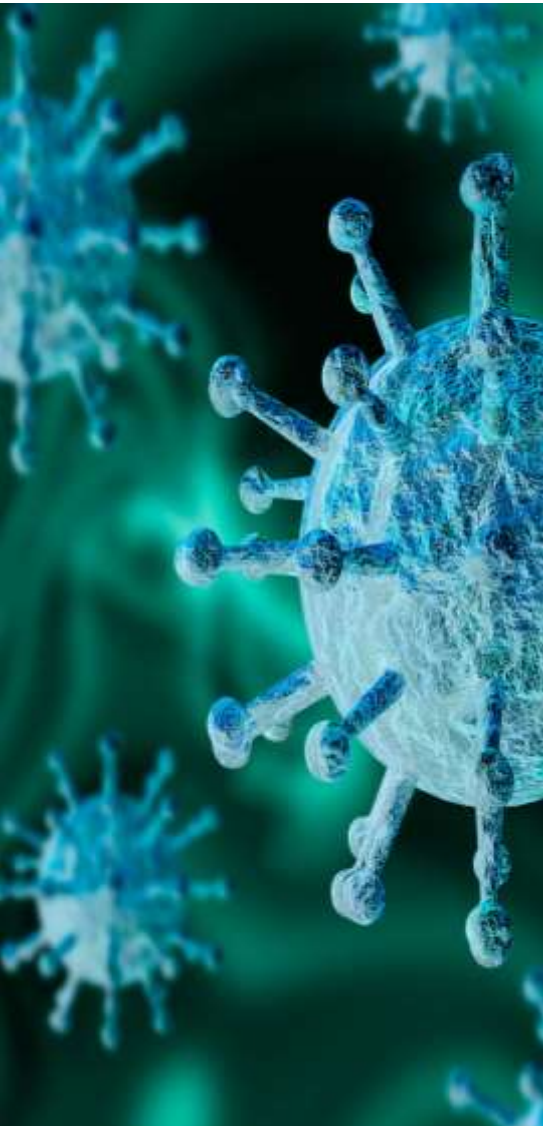


Remote education during COVID-19. An analysis from the perspective of students from Universities in Chile, Colombia, Ecuador and Mexico.

Experience 2020 and 2021 Preliminary results

Carlos Pérez, PhD., Universidad Estatal de O'Higgins
Verónica Villarroel, PhD., Directora CIME- Psicología UDD
23 de noviembre de 2021



- In Chile and most of Latin America, the culture of remote higher education was not common.
- Until the beginning of 2020, the most recognized Chilean universities offered almost exclusively face-to-face undergraduate degrees.
- The appearance of COVID-19, forced to move quickly to a remote education, forcing us to learn as we go.

General Objectives



- **Characterize the remote educational process, during the pandemic, from the experience of university students (technological resources and internet connection, educational modality, student participation, dialogic interaction, type of teaching and didactic strategies, types of evaluation, teacher-teacher relationship students, perception of learning)**

SAMPLE

Measurement 1- 2020 Chile.

- 1740 Chilean students (33.1% men and 66.9% women).
- Belonging to 30 universities in the country

Measurement 1- 2020 Latinoamerica.

Total = 1112 Latin American students

- Ecuador = 614 (22% men and 78% women)
- Mexico = 294 (24% men and 76% women)
- Argentina = 97 (36% men and 64% women)
- Colombia = 82 (24% men and 76% women)

Measurement 2- 2020 Chile.

- 3,622 Chilean students (24.6% men and 75.4% women).
- Belonging to 17 universities in the country.

DIMENSIONS OF ANALYSIS OF REMOTE EDUCATION IN PANDEMIC

Dimensions	<i>Alfa</i>	<i>M</i>	<i>SD</i>	<i>%</i>
Teacher empathy in pandemic	0.82	3.28	0.89	65.6
Physical and technological resources	0.82	4.05	0.91	81
Didactic organization	0.79	3.40	0.69	68
Dialogical interaction and participation in	0.71	3.59	0.78	71.8
Learning Perception	0.78	3.02	0.81	60,4
Perception of academic demand	0.75	3.93	0.86	78.6
Assessment Quality	0.76	2.12	0.97	42.4

PHYSICAL AND TECHNOLOGICAL RESOURCES

Dimension: Physical and Technological Resources

	Chile	Ecuador	Argentina	Colombia	Mexico
M	3.92	4.11	4.50	4.16	4.10
SD	0.55	0.67	0.64	0.53	0.59

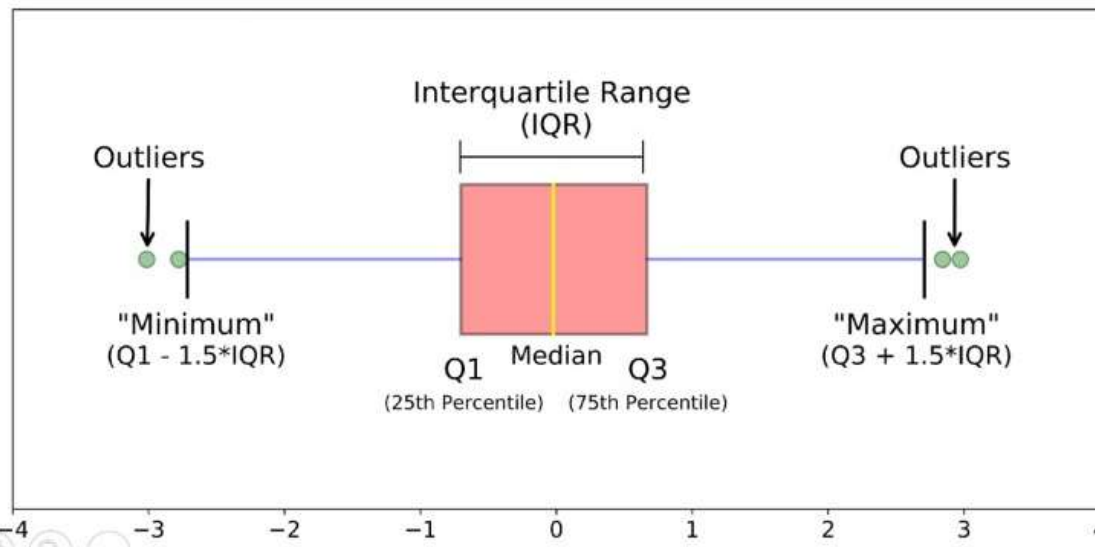
- There are significant differences between the sample from Chile and the rest of the countries. Lower average Chile.
- Significant differences between the sample of Argentina and the rest of the countries. Highest average Argentina.
- There are no significant differences between Colombia, Ecuador and Mexico.

Explanation of the Graphics:

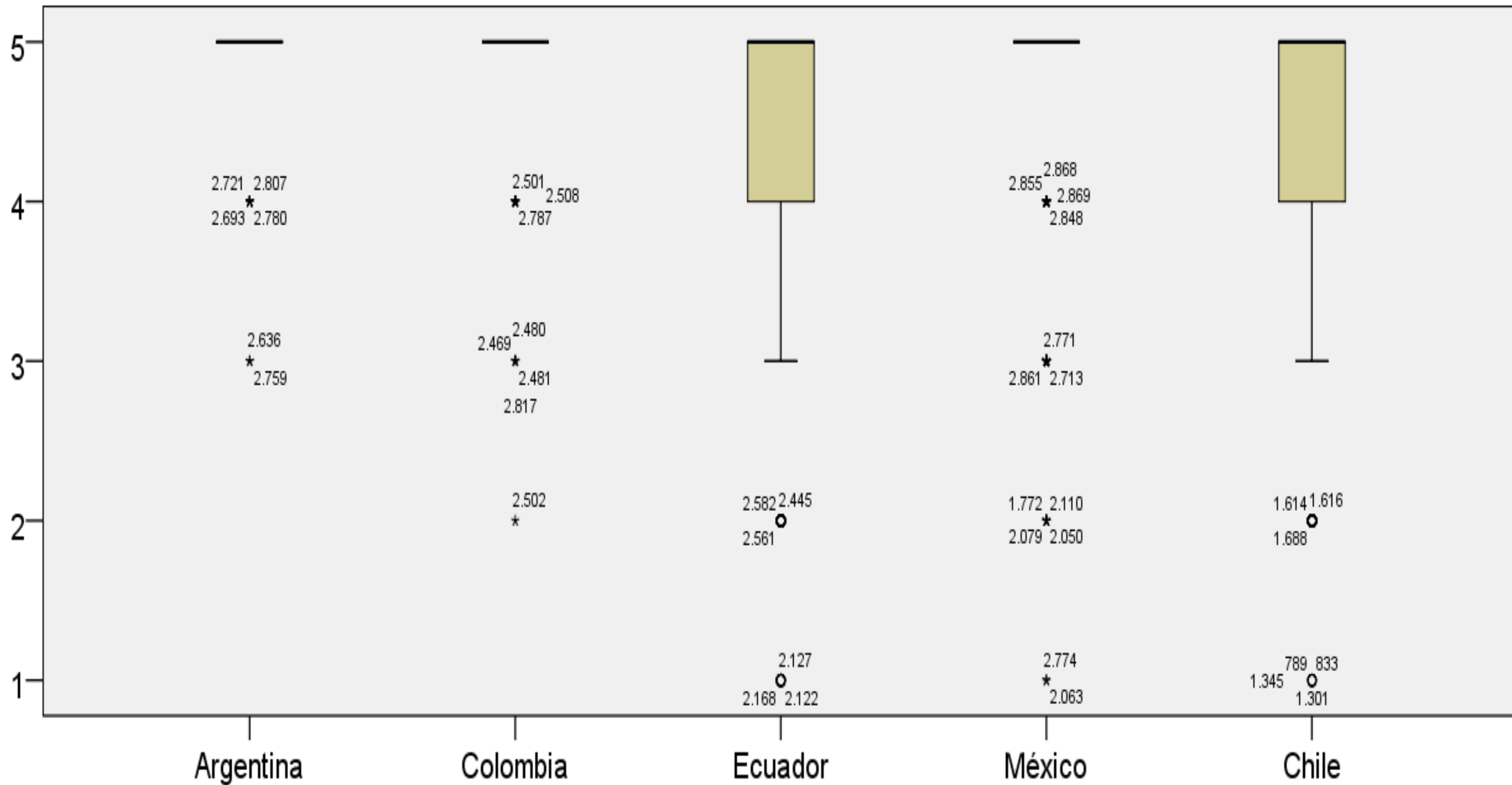
Un boxplot es una forma estandarizada de presentar una distribución de los datos.

Su descripción se basa en un resumen de cinco números: el "mínimo", primer cuartil (Q1), mediana (Q2), tercer cuartil (Q3) y "máximo".

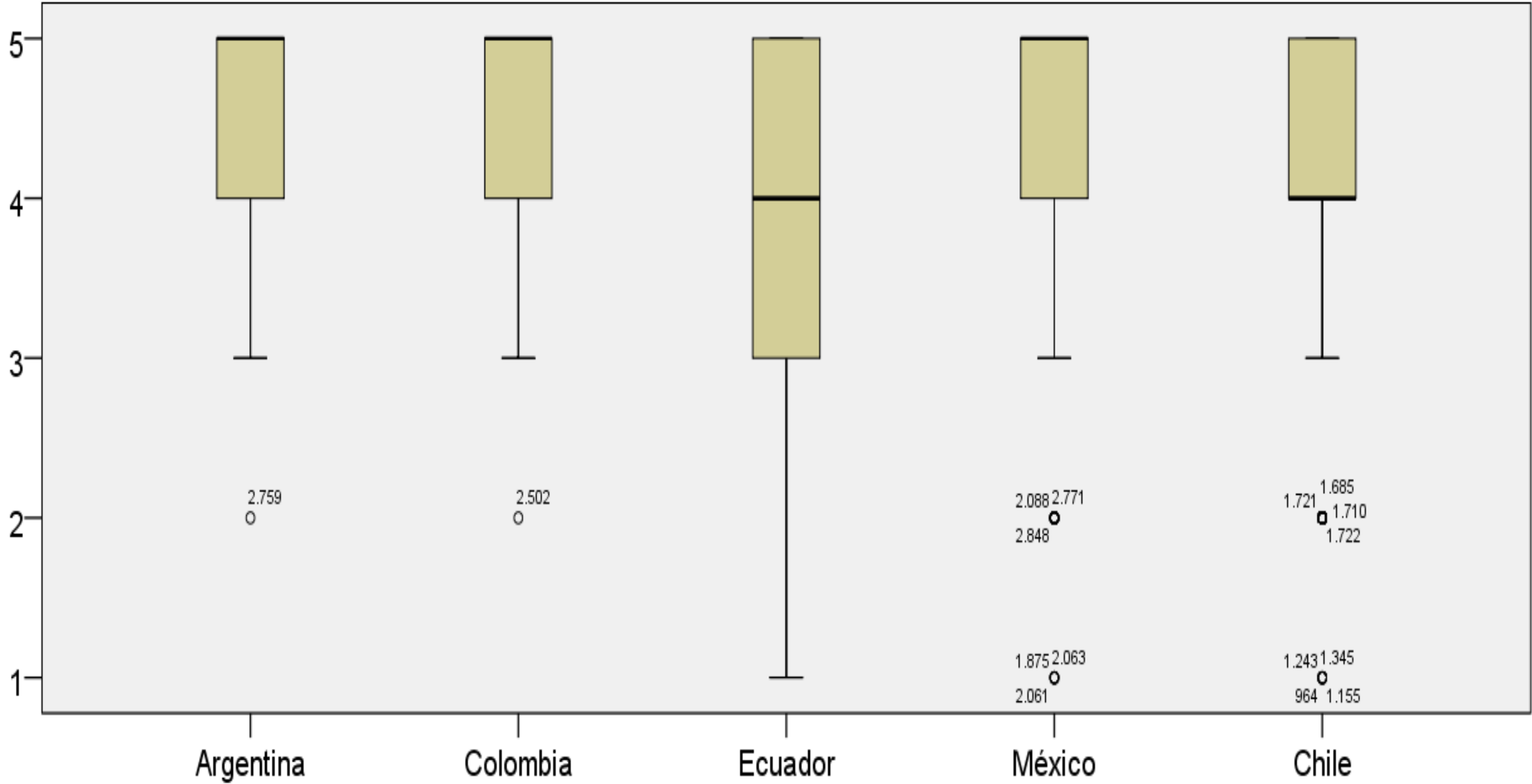
El Boxplot permite explorar visualmente sus valores atípicos y cuáles son sus valores, y dar un primer vistazo a la simetría o grado de agrupamiento de los datos.



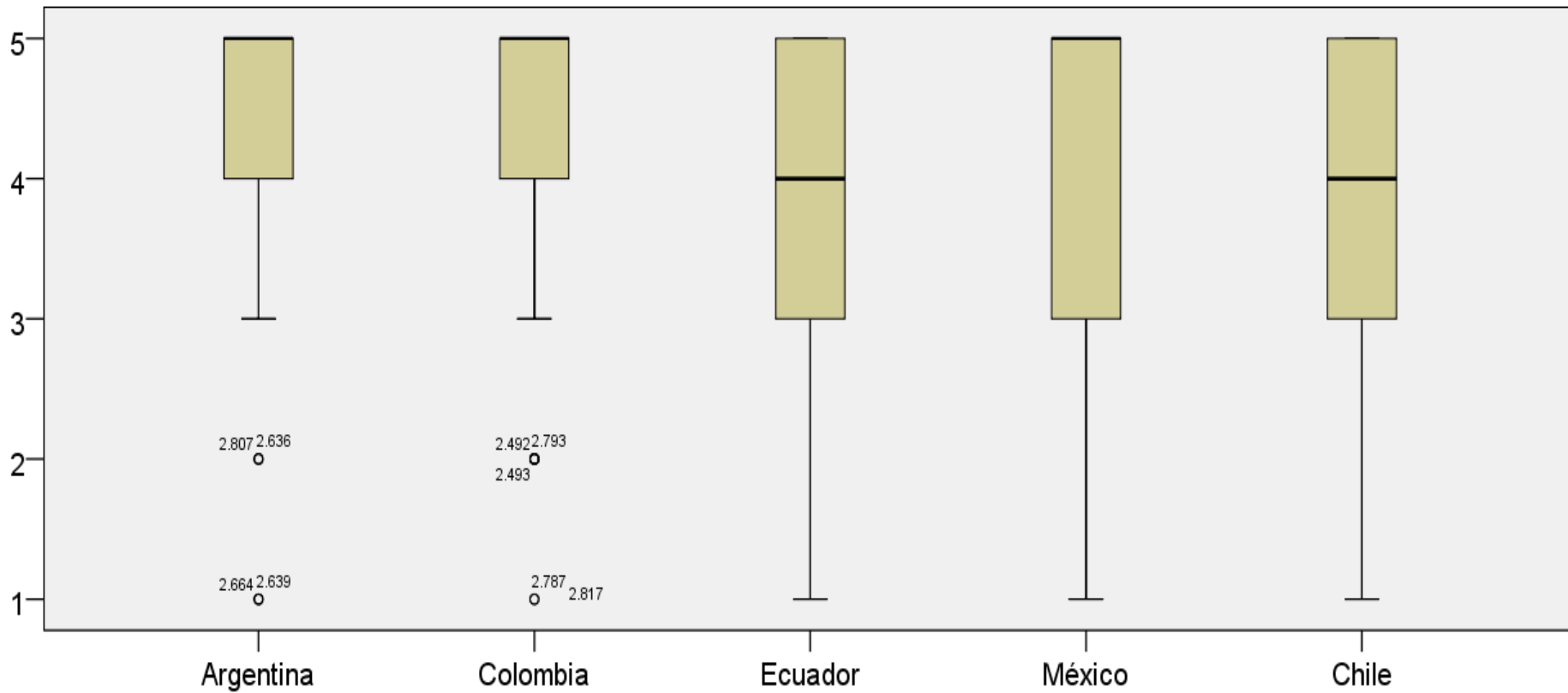
Q4 - Cuento con un dispositivo electrónico para conectarme a las clases online.



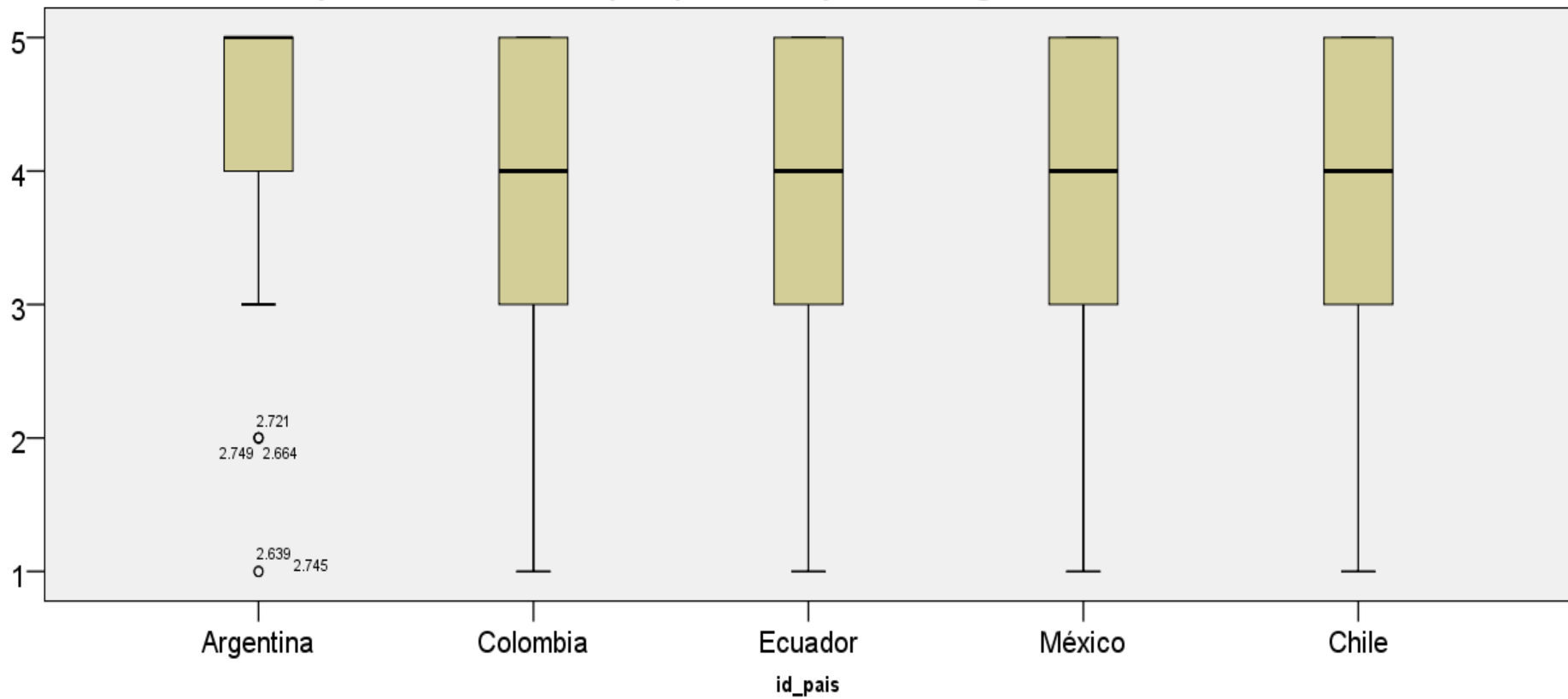
Q5 - Cuento con conexión a internet para mis cursos online.



Q6 - Cuento con un espacio físico adecuado para conectarme a las clases online



Q7- Cuento con un espacio físico adecuado para poder trabajar en mi hogar en este formato de educación online.



Chilean student comments

- "Mainly the connection, since I did not have internet and my computer sometimes does not load.
- "It is much more stressful since for me there are minutes where the classes are stuck or it is heard badly on the Internet and it was not lost and I could not understand."
- I do not have adequate space, I do everything from my bed, from connecting to classes to doing homework, and they interrupt me a lot at home, so I prefer to watch recorded video rather than be able to pause it."

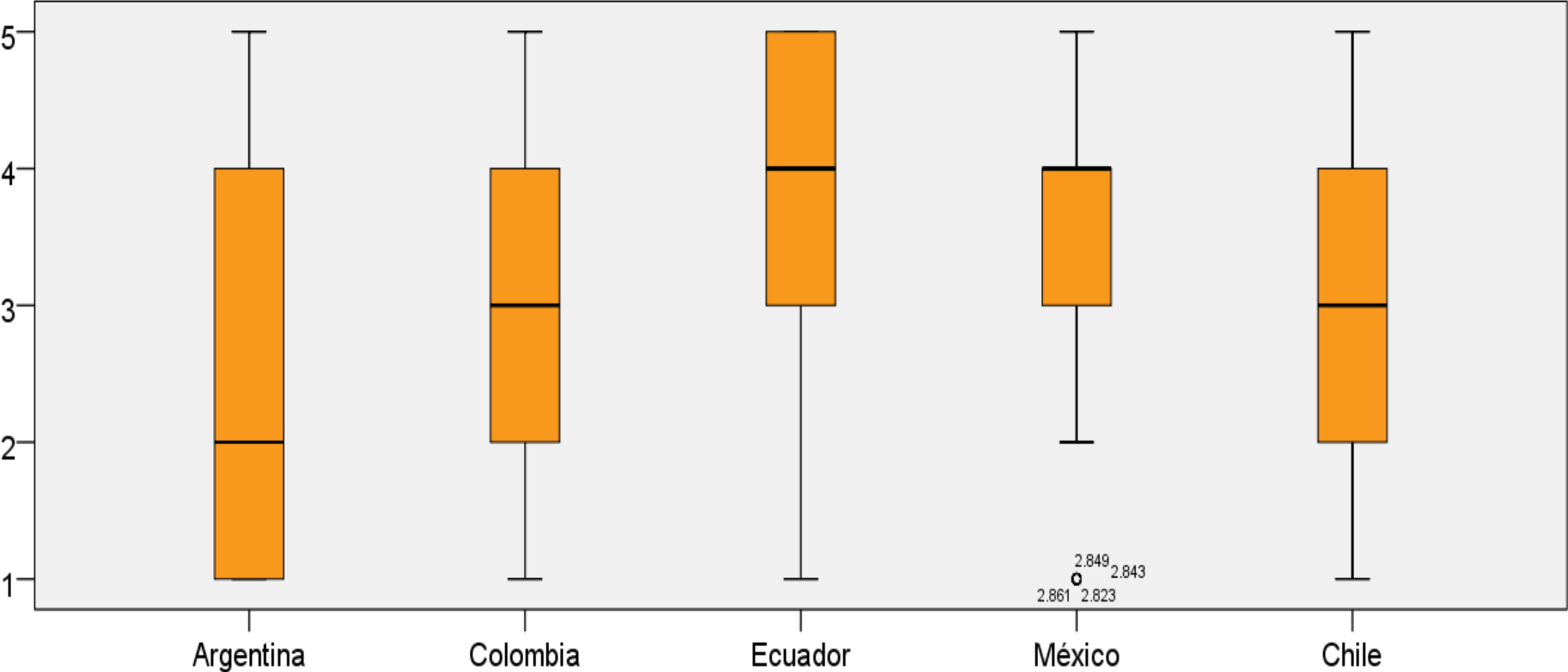
EMPATHY IN PANDEMIC

Dimension: Empathy in Pandemic

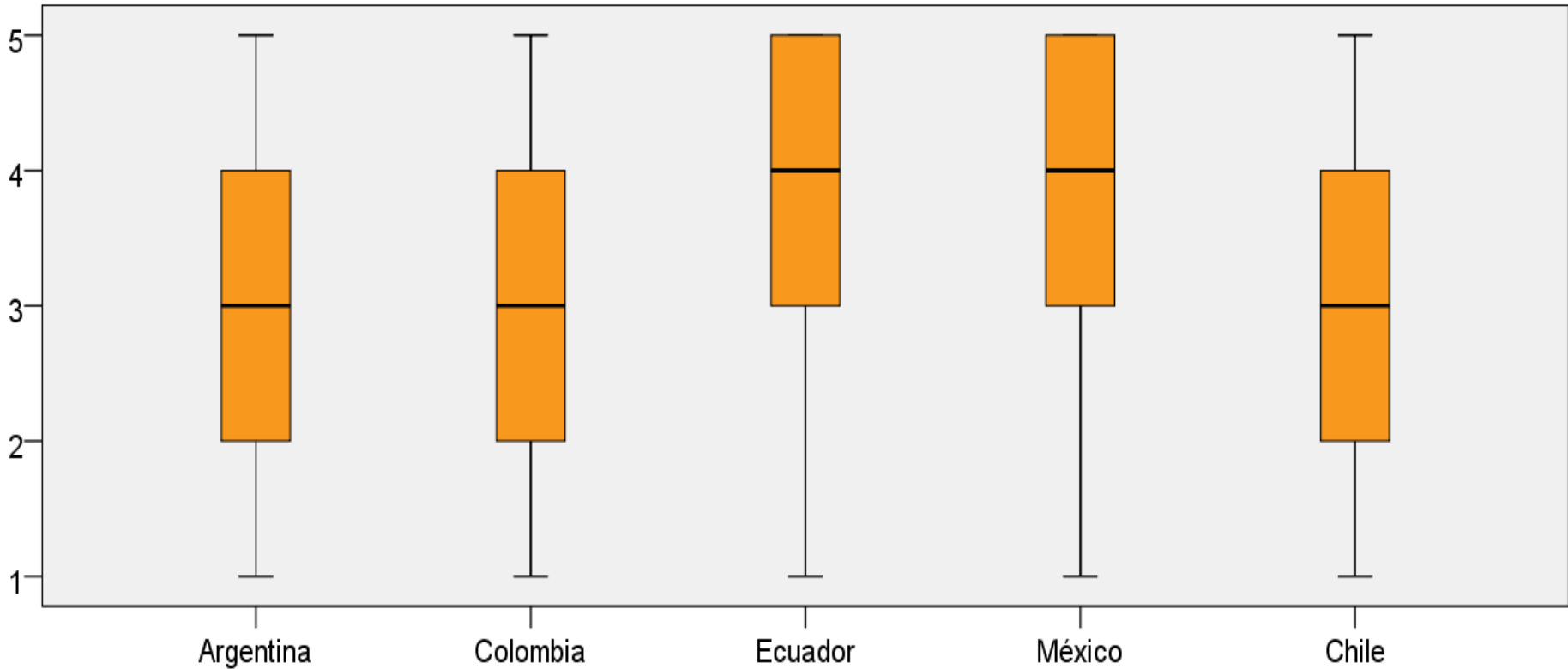
	Chile	Ecuador	Argentina	Colombia	México
M	4.38	4.39	3.12	4.32	4.32
SD	0.53	0.55	1.03	0.59	0.59

- There are significant differences between Argentina and the rest of the countries. Lower average Argentina.
- There are no significant differences according to the training cycle (initial, intermediate, final).
- There are significant differences in the perception of men and women, with that of women being better.

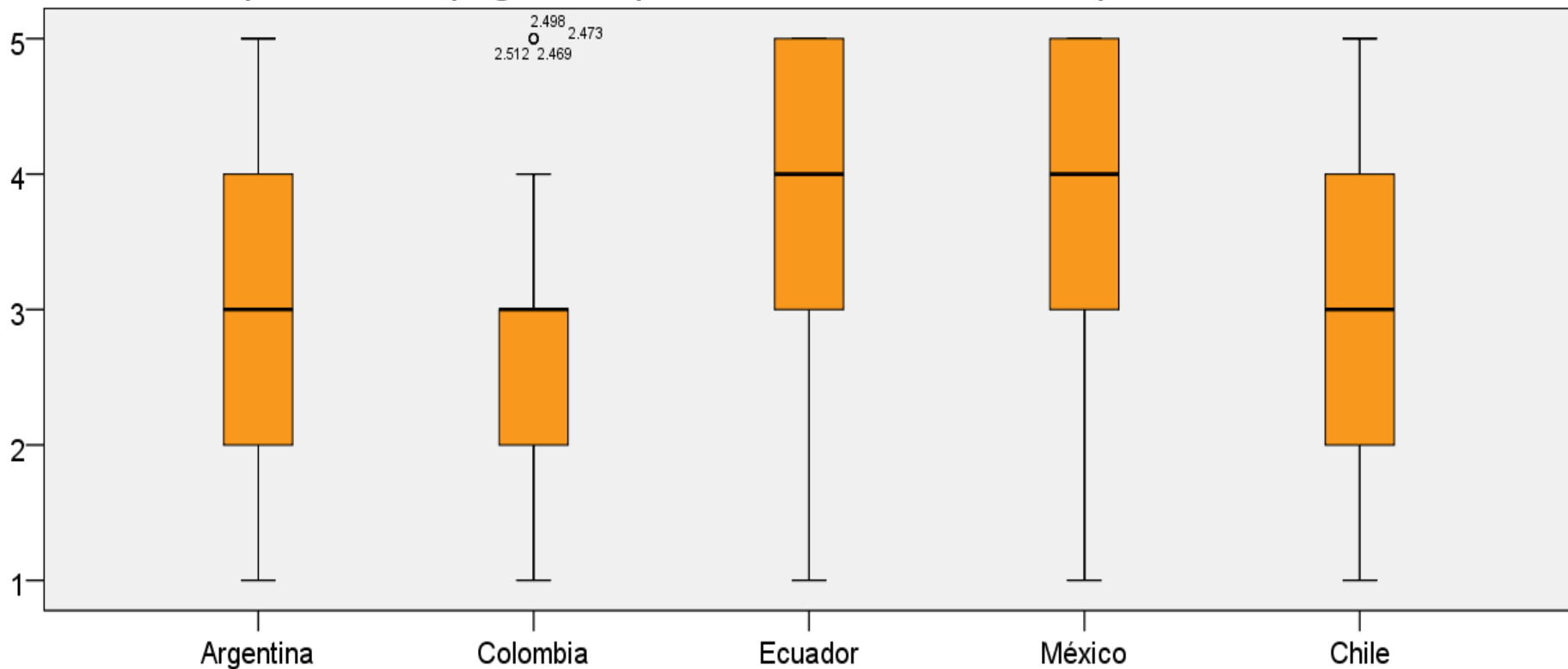
Q1- En las clases online, los/as profesores/as han mostrado interés respecto a cómo estoy yo y mi familia en el contexto de la pandemia actual.



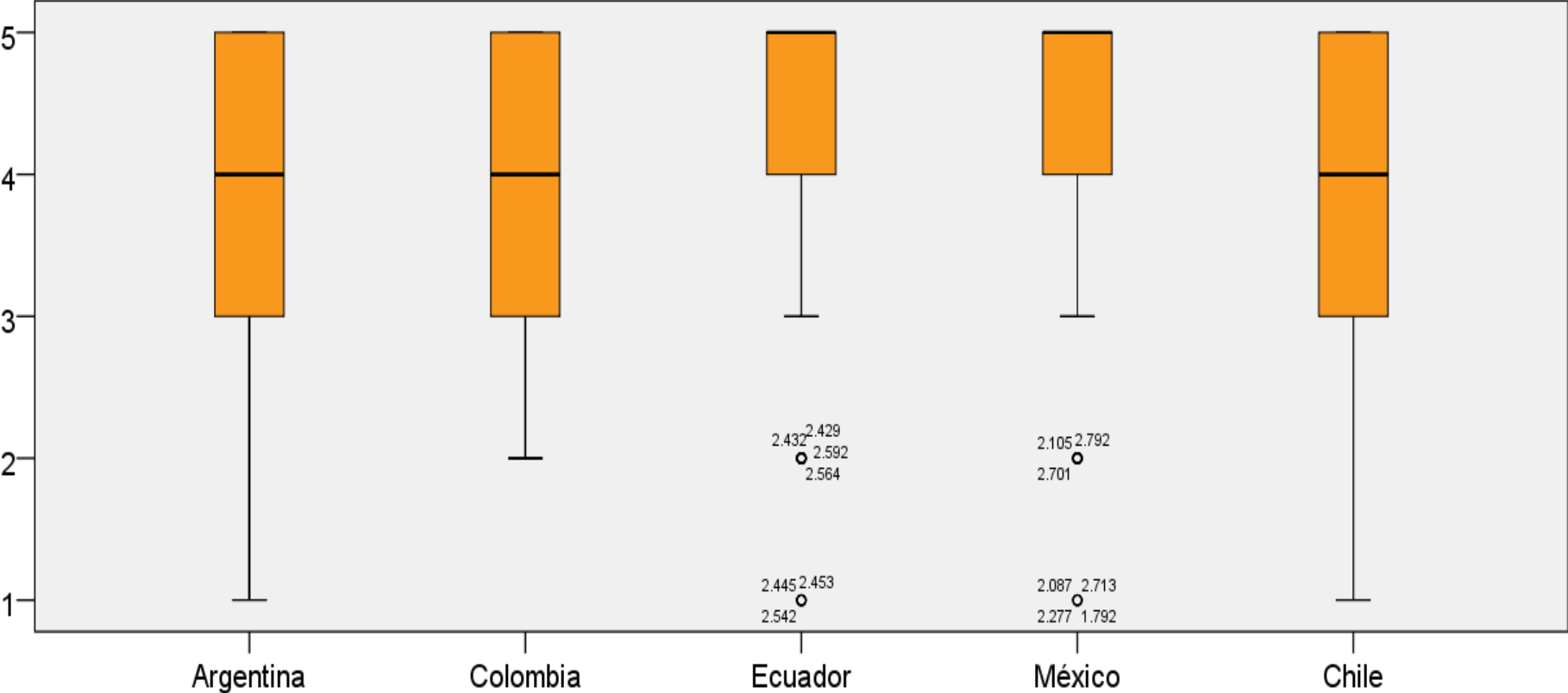
Q2- Los profesores destinan minutos al inicio de las clases para preguntarnos cómo hemos estado en esta etapa de confinamiento.



Q3- Los profesores nos preguntan respecto a cómo enfrentamos esta etapa de educación online.



Q18- Los/las docentes muestran interés por que sus estudiantes aprendan en la modalidad online.



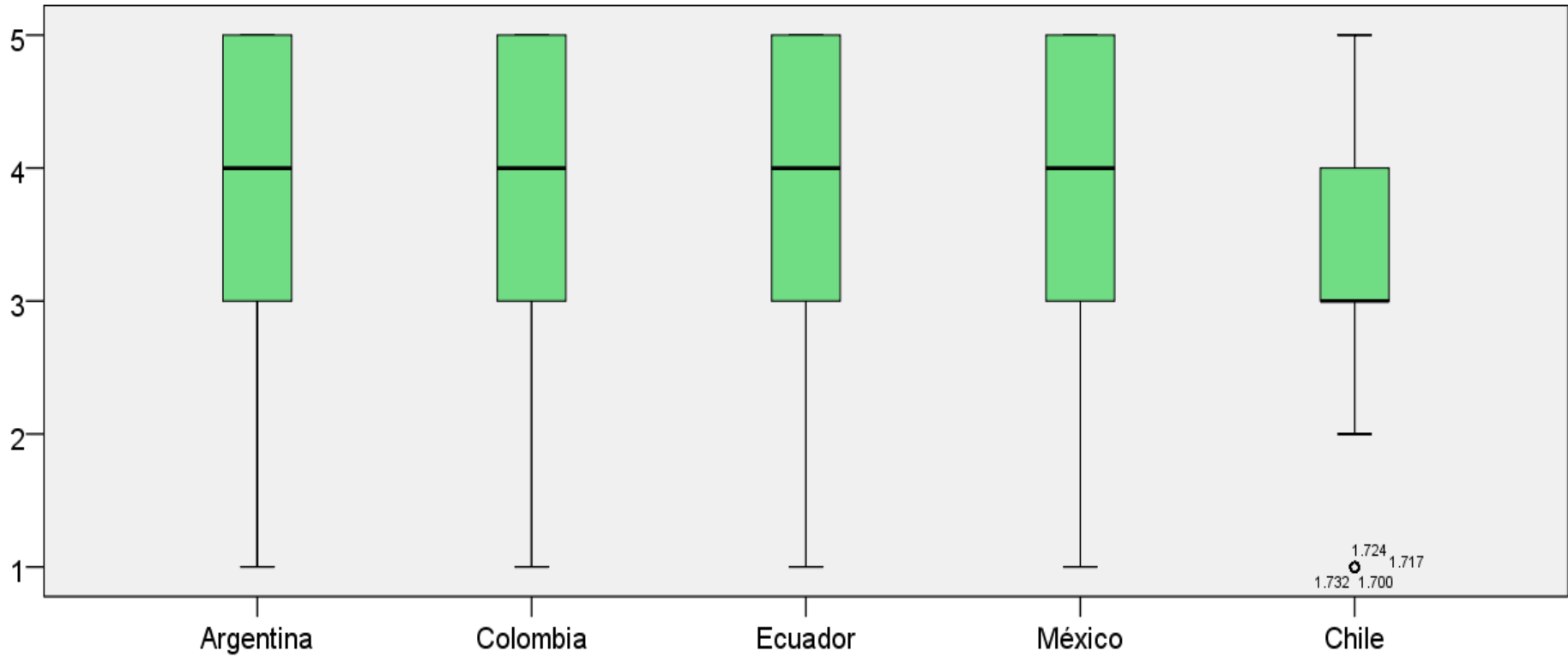
DIDACTIC ORGANIZATION

Dimension: Didactic Organization

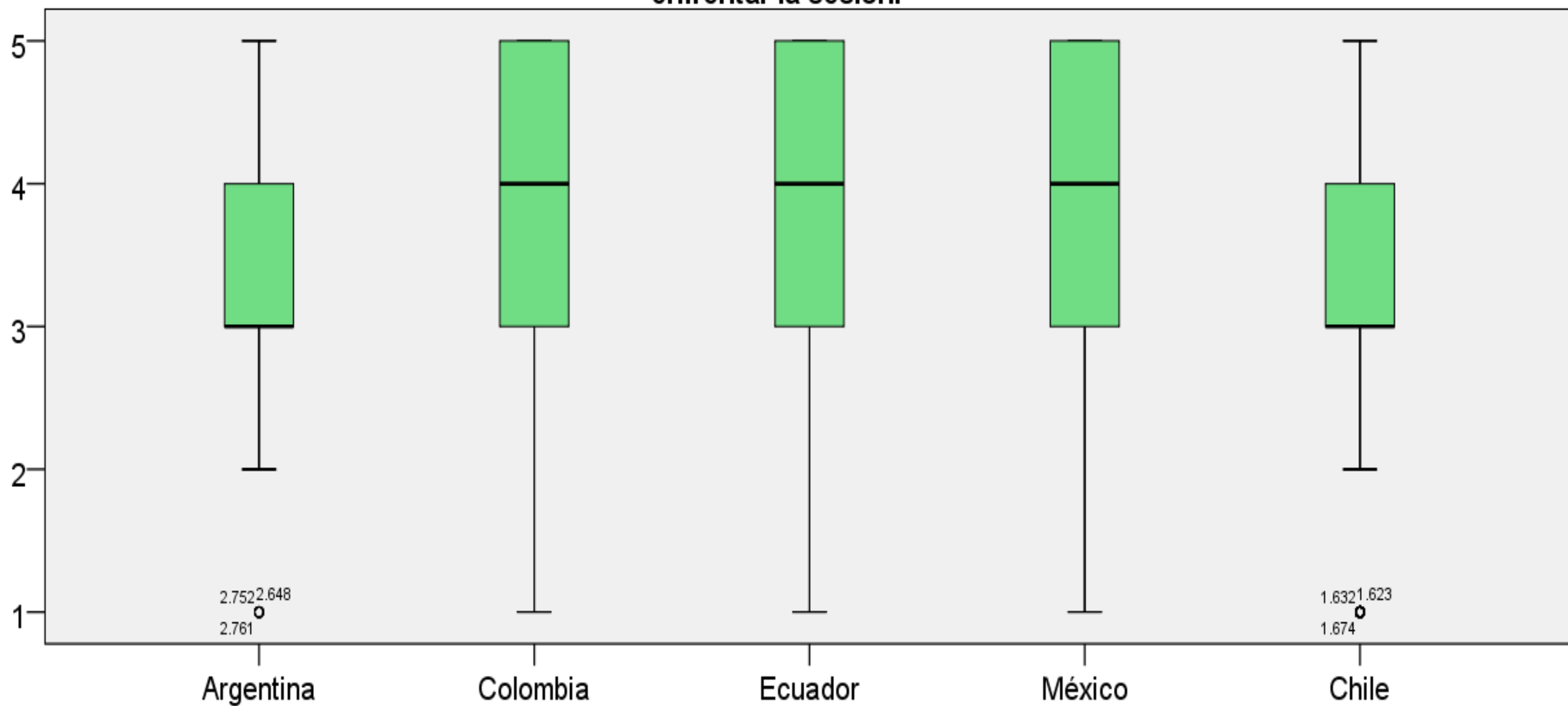
	Chile	Ecuador	Argentina	Colombia	México
M	3.12	3.53	3.89	3.43	3.38
SD	0.66	0.69	0.77	0.71	0.64

- There are significant differences between Chile and the rest of the countries. Chile has a lower average.
- There are significant differences between Argentina and the rest of the countries. Argentina has a higher average.
- There are no differences between Ecuador, Colombia and Mexico.
- There are no significant differences according to the training cycle (initial, intermediate, final).

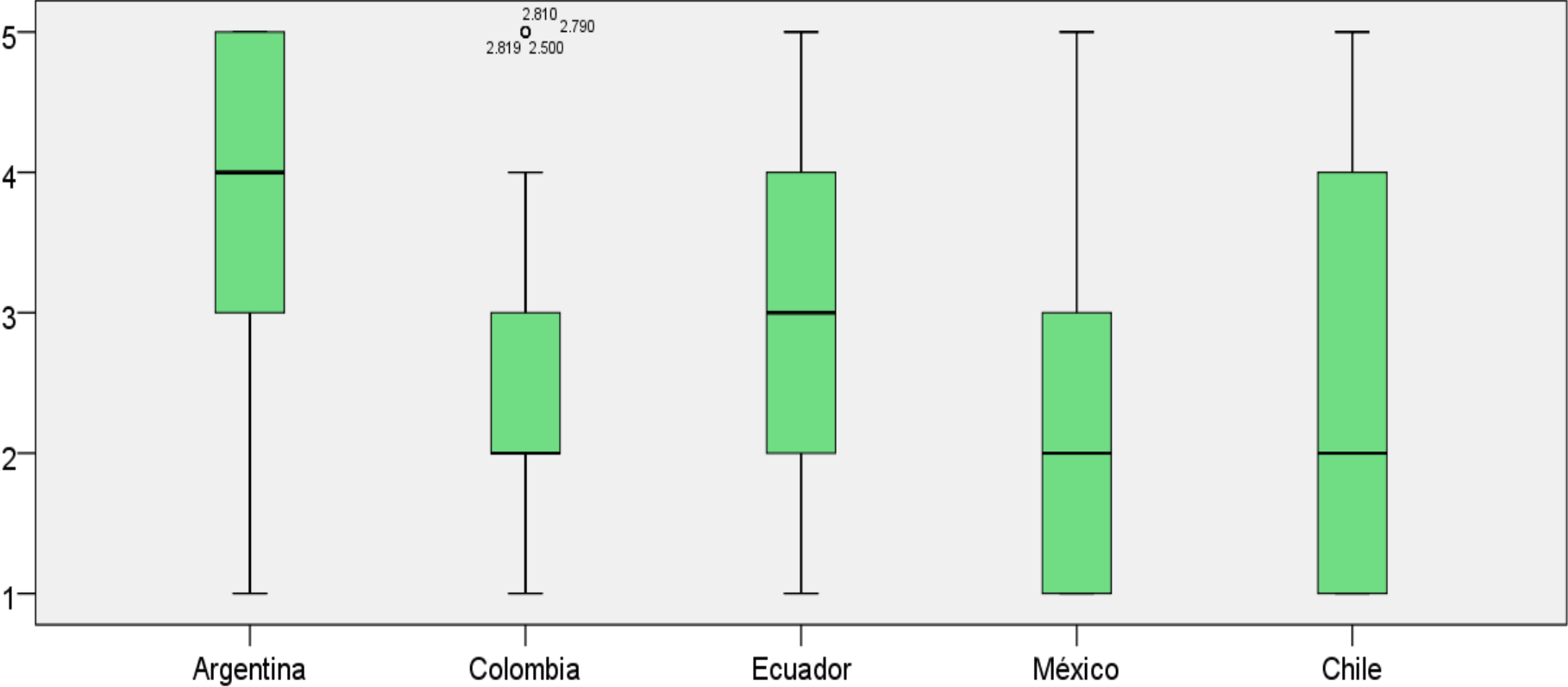
Q19- En las clases online, me queda claro qué es lo más importante que debo aprender en cada sesión de clases.



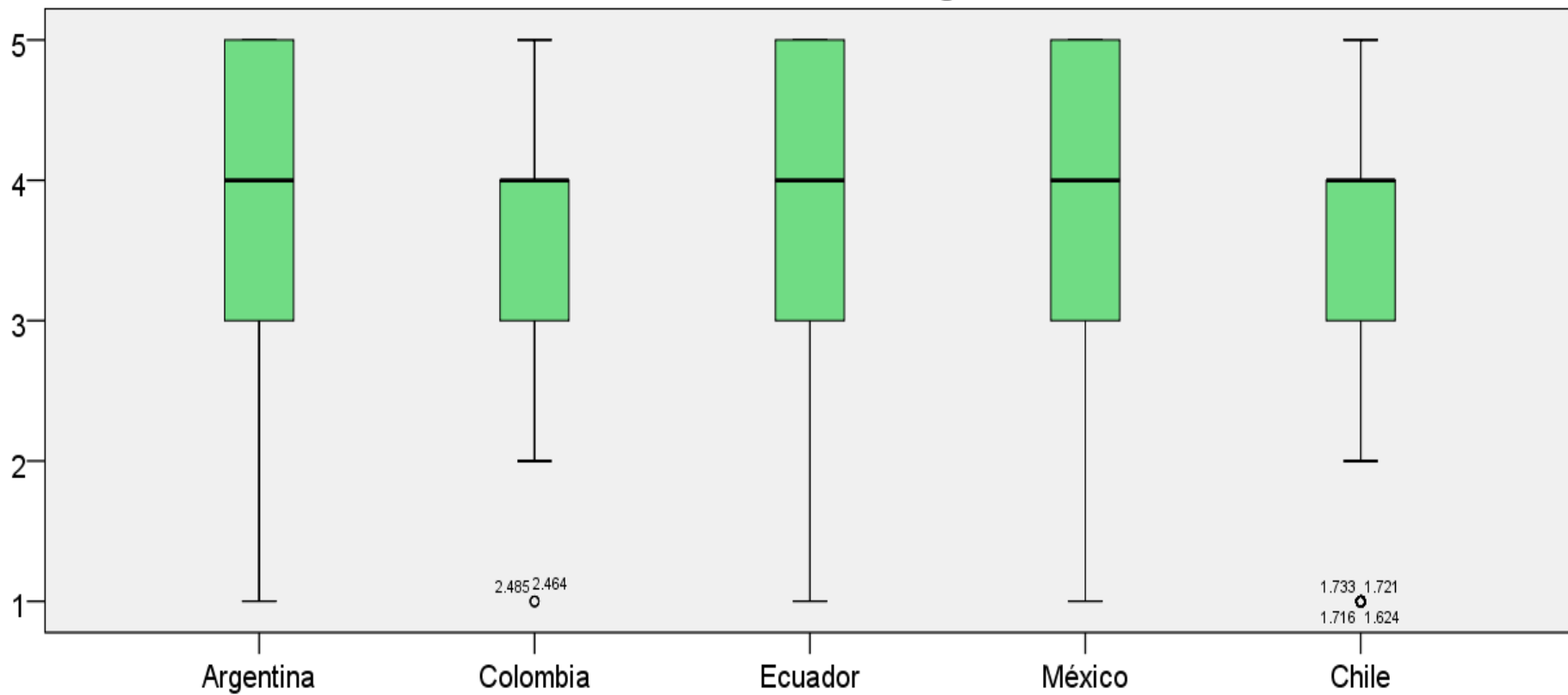
Q28- Los/las docentes nos envían materiales para revisar antes de la clase online, para estar más preparado/a para enfrentar la sesión.



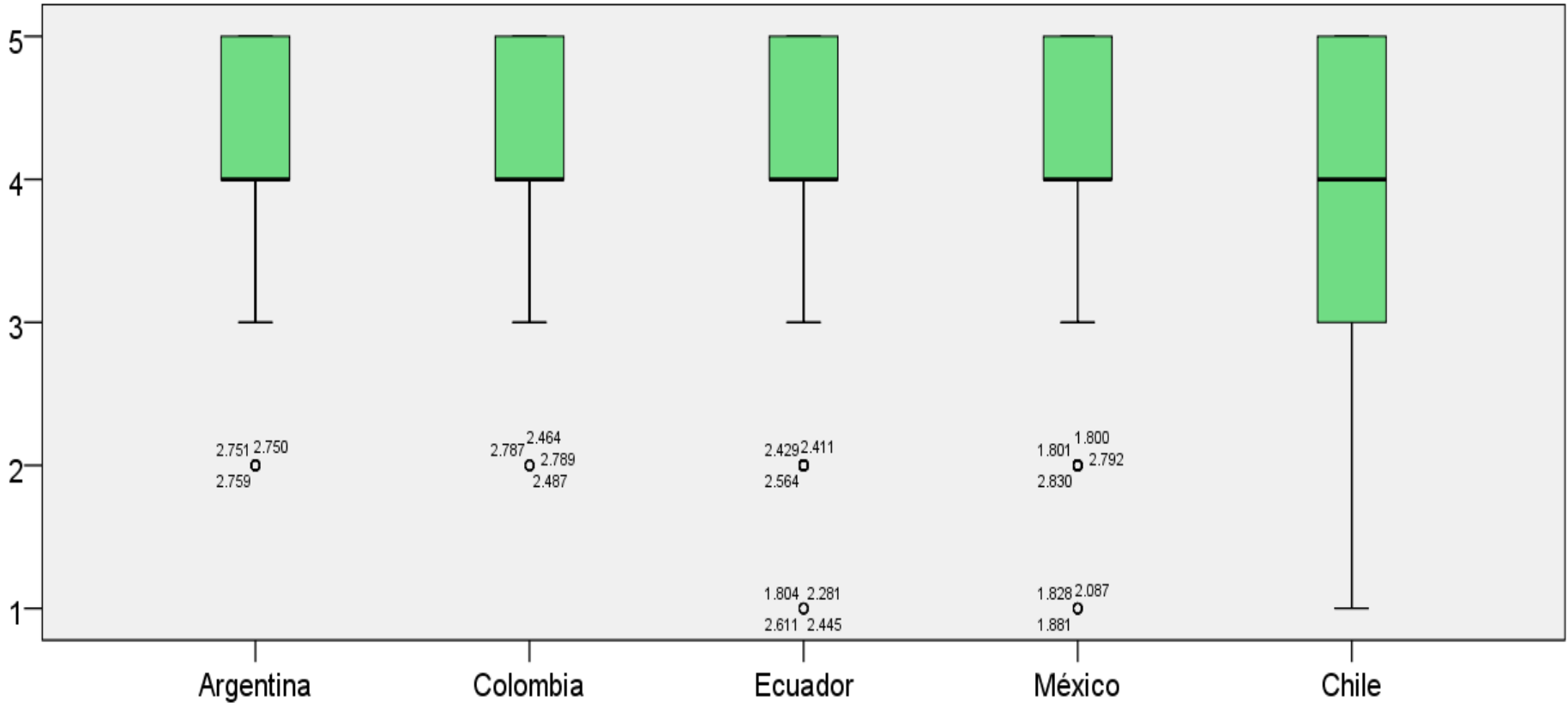
Q29- Los/las docentes hacen recreos durante la sesión de clase online para facilitar nuestra concentración y aprendizaje



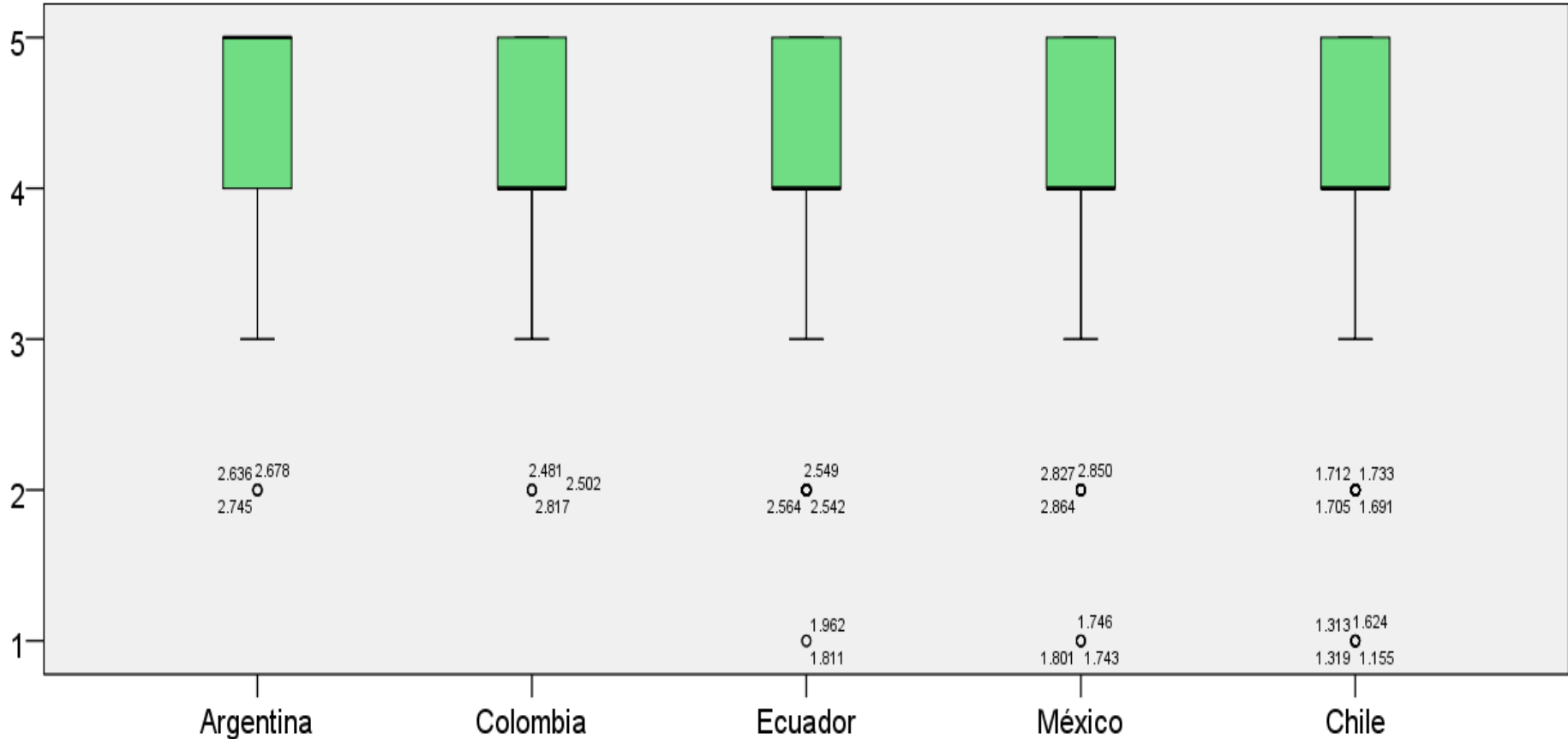
Q30- Las clases online están bien organizadas.



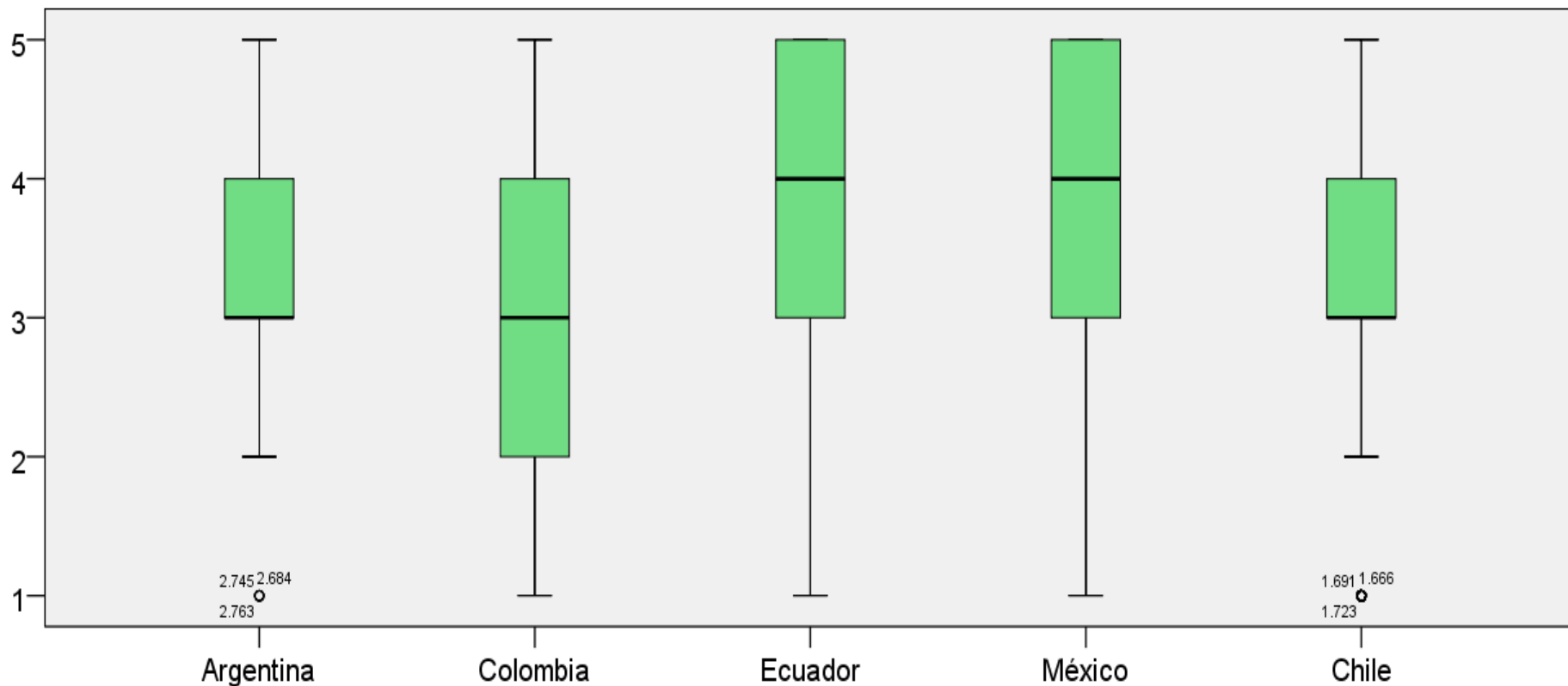
Q31- Las clases online se focalizan en los aspectos centrales de la asignatura.



Q32- Escucho bien al profesor, ya que su forma de modular y el volumen de la voz es adecuado en el formato online.



Q33- Cuando termina la clase, los/las docentes hacen un cierre y enfatizan los aspectos más importantes de la clase online.



Chilean student comments

The academic load and the blocks are too extensive, an amount of work outside of class that keeps us connected all day and does not allow recreation time, basically twice the time is used than in person.

"... my physical health is very deteriorated and the academic load continues being the same being that we are not in the same conditions in the context ..."

"... there are times when online classes take up most of this, it tends to be a bit tiring to be constantly in front of the computer ..."

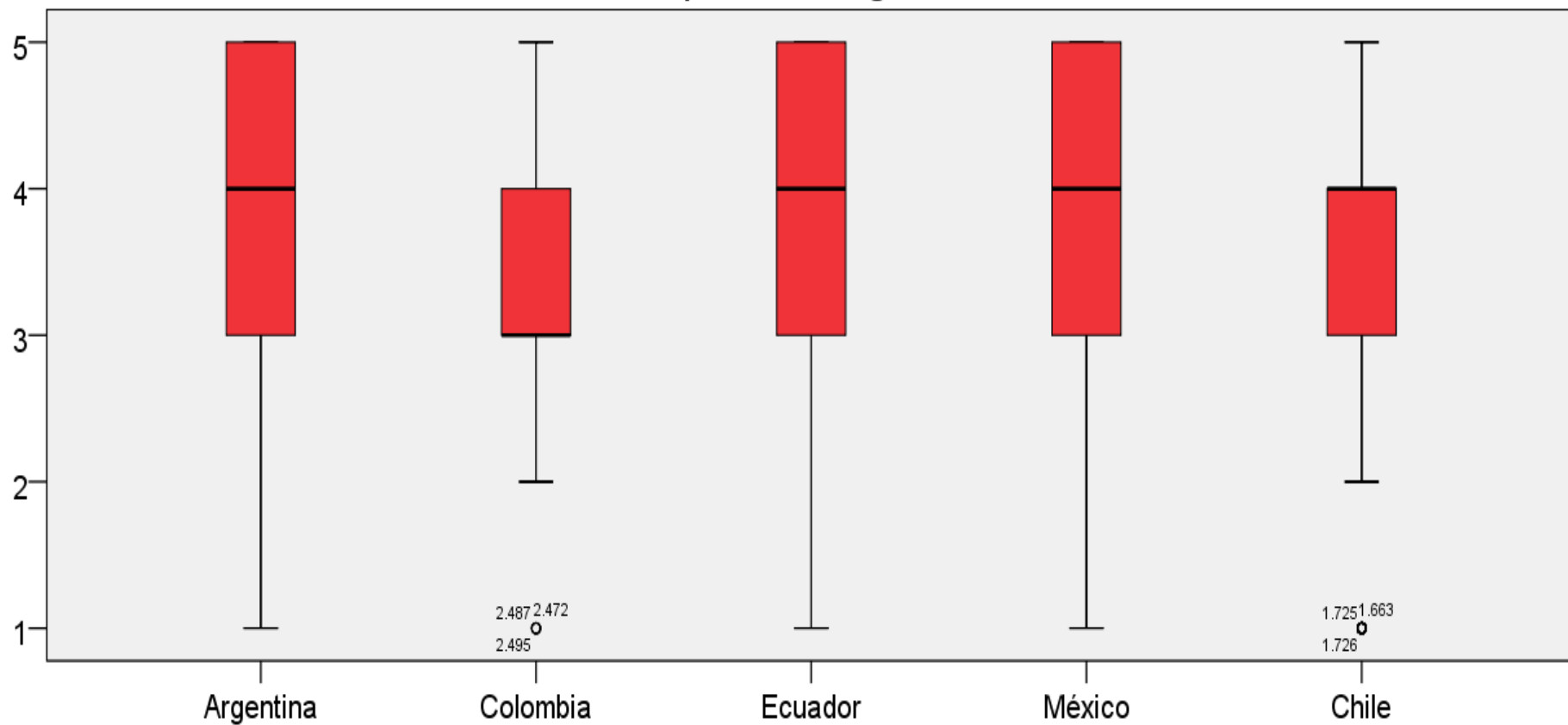
DIALOGICAL INTERACTION

Dimension: Dialogical Interaction

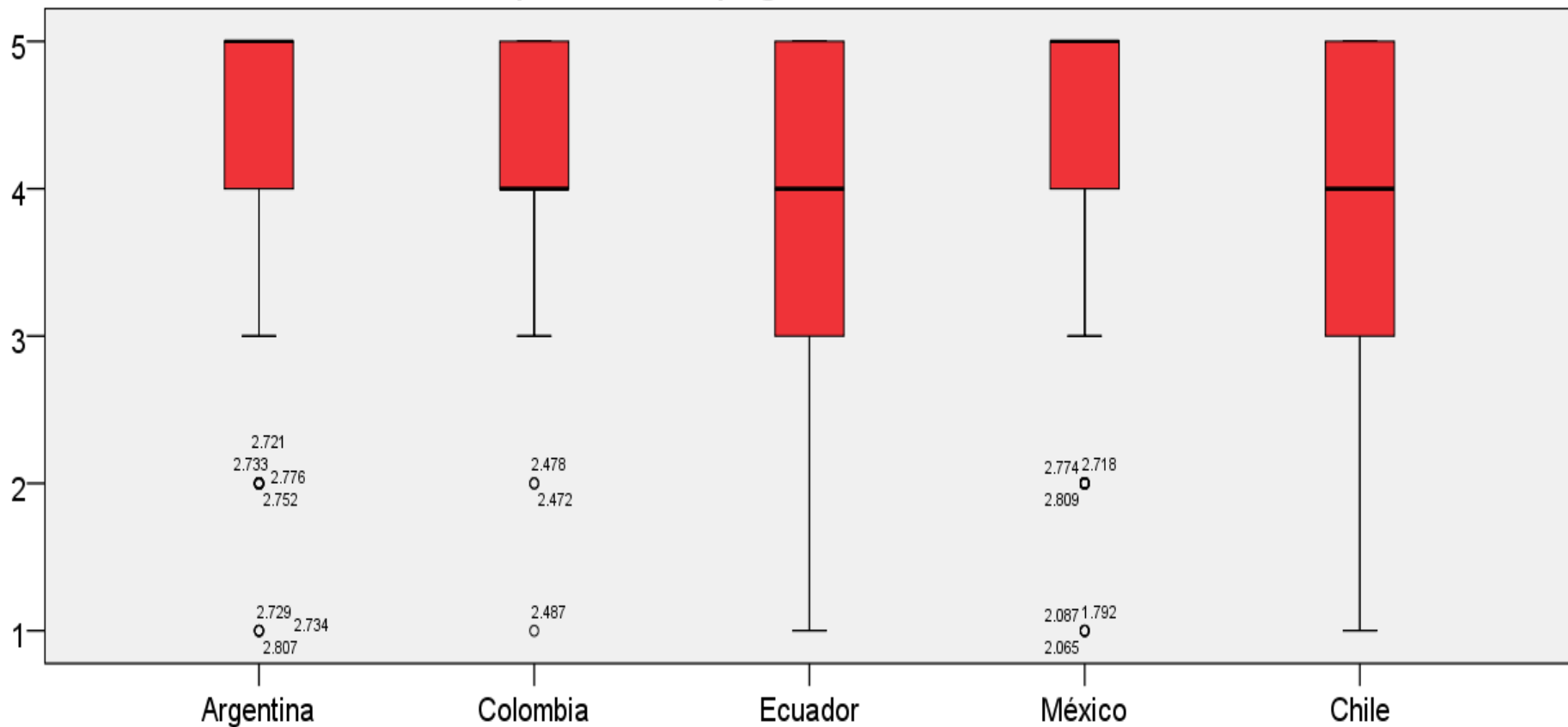
	Chile	Ecuador	Argentina	Colombia	México
M	3.96	4.28	3.74	4.20	4.22
SD	0.62	0.56	0.95	0.54	0.55

- There are significant differences between Chile and Ecuador Colombia and Mexico. Chilean sample with the lowest score.
- There are significant differences between Argentina and the rest of the countries. Lower average Argentina.
- There are no differences between Ecuador, Colombia and Mexico.
- There are no significant differences according to the training cycle (initial, intermediate, final).

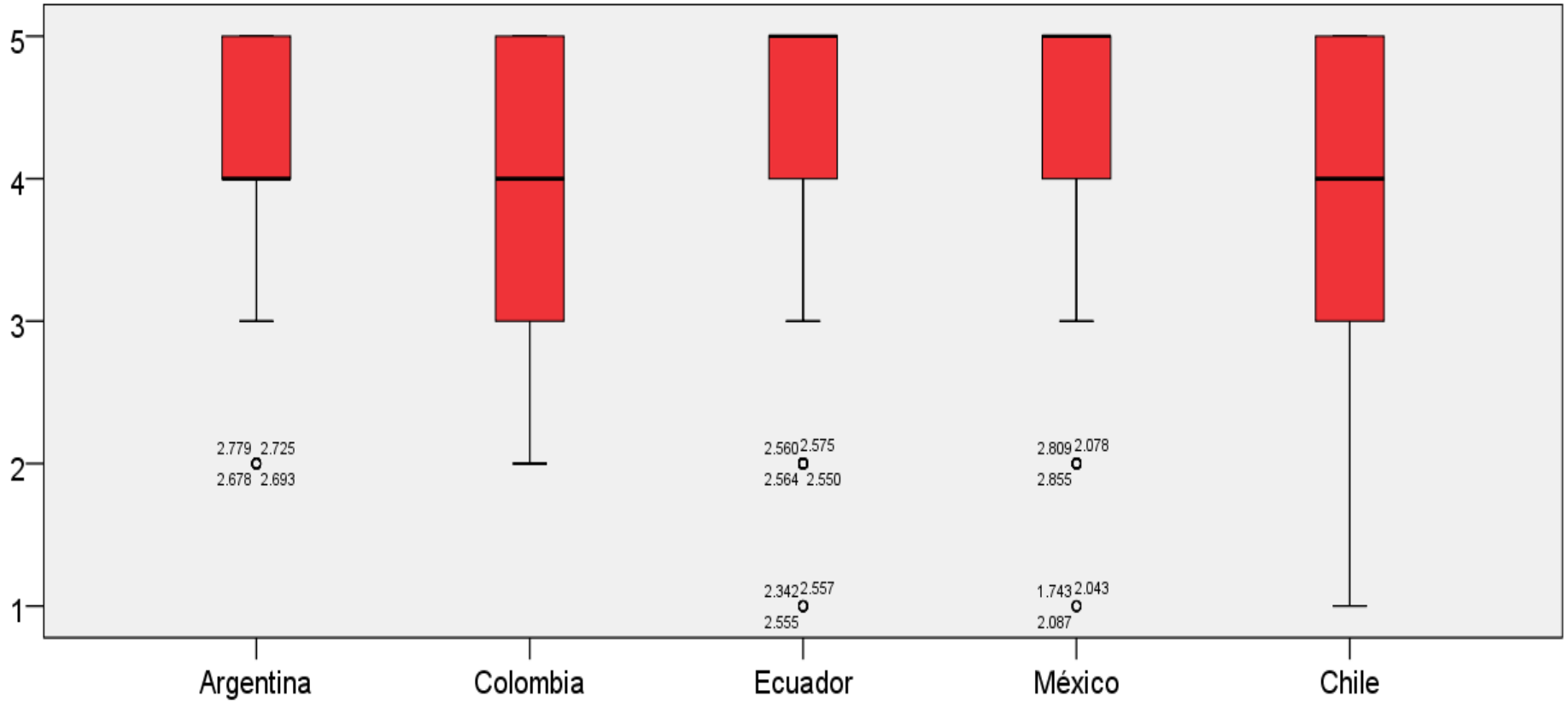
Q8- Las clases online me permiten dialogar con los/las docentes.



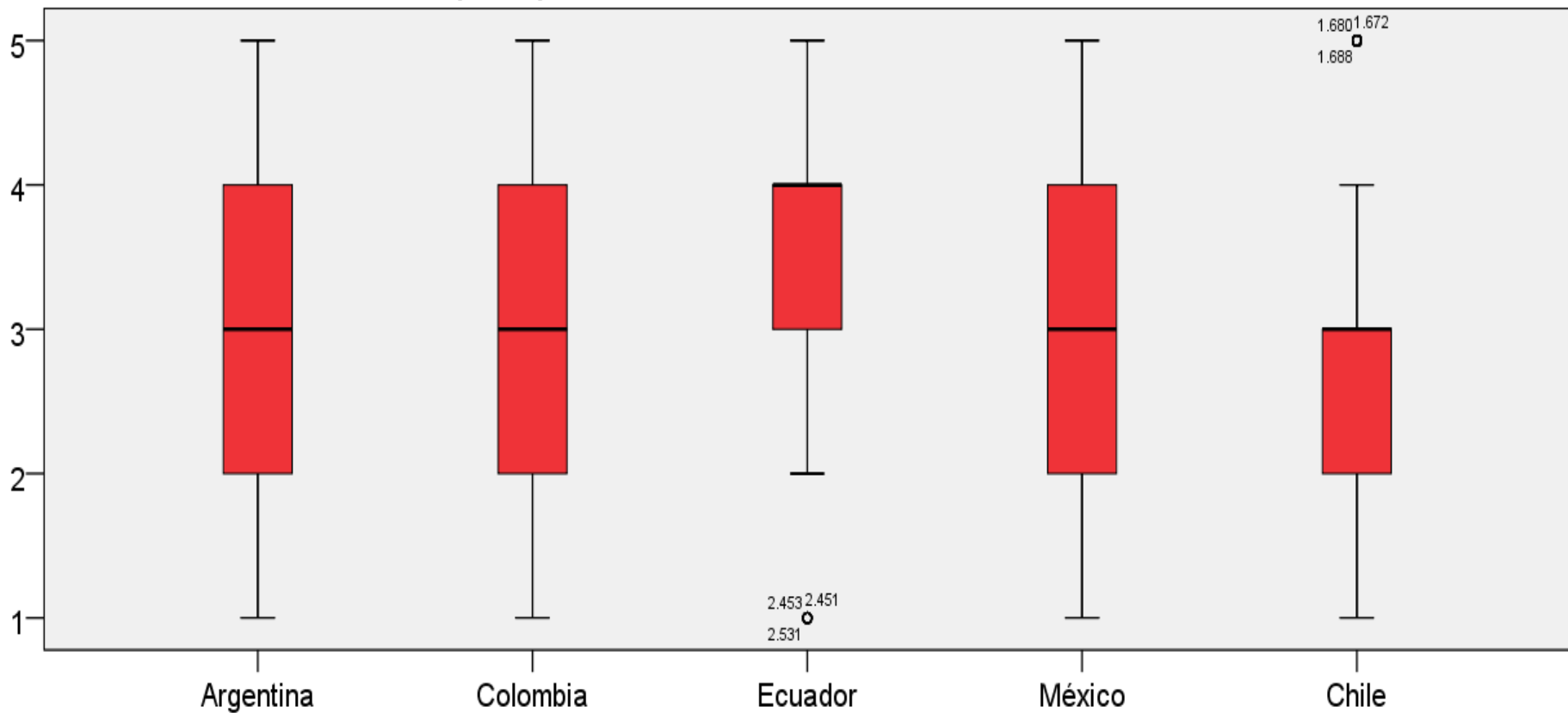
Q9- He podido realizar preguntas en las clases online.



Q10- En las clases online, el profesor da un espacio para escuchar opiniones de los/las compañeros/as.



Q21- La participación de los estudiantes en clases online es alta.



Chilean student comments

- "Among the negative, I find that there is a kind of distrust on the part of the students with respect to this modality, which leads to classes without much participation where the teacher finds himself in a situation of only passing the subject ..."
- "... there is no student participation, so progress is made very fast in the matter ..."
- "The negative is that the interaction with the teacher and my classmates is limited, making it impossible to share, chat directly about the past subject ... and the habit of turning off the cameras also prevents visually interacting ...".

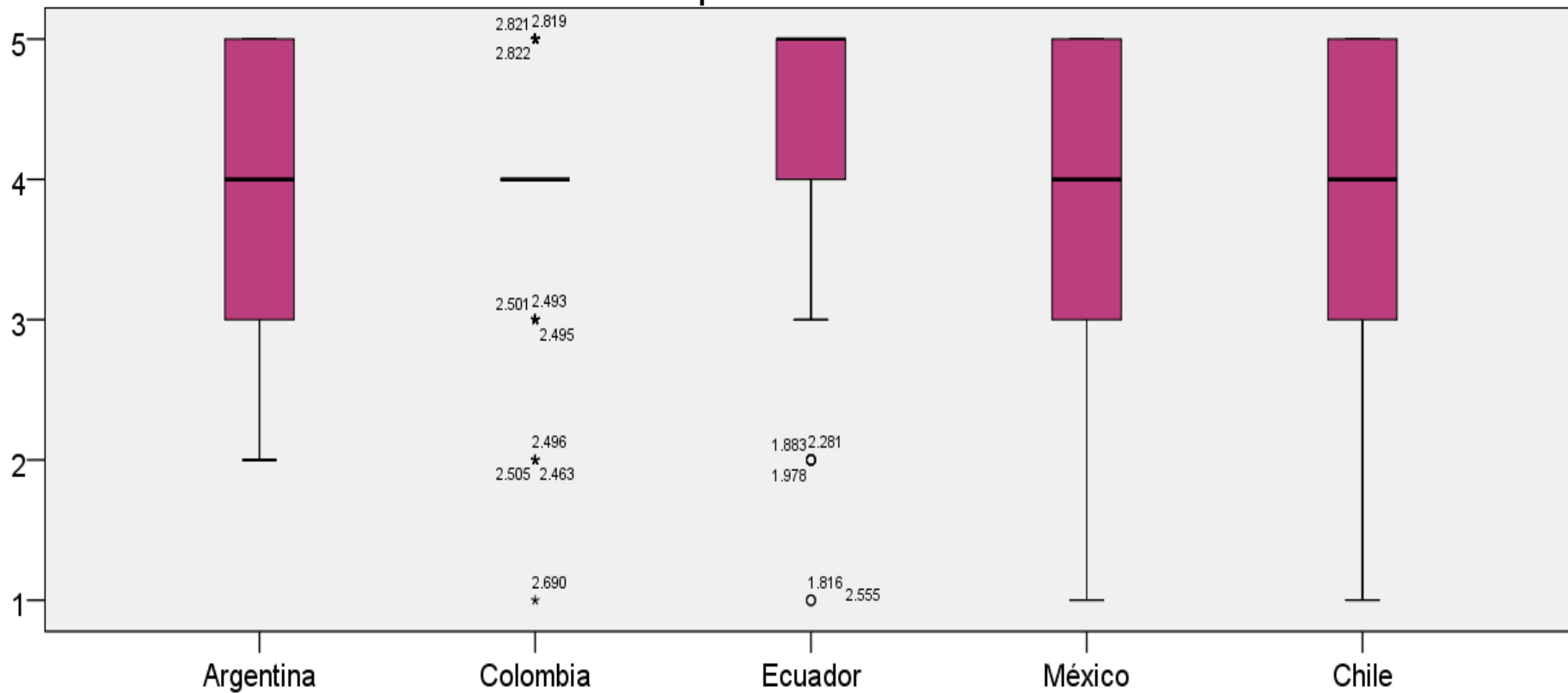
GROUP WORK

Dimension: Group Work

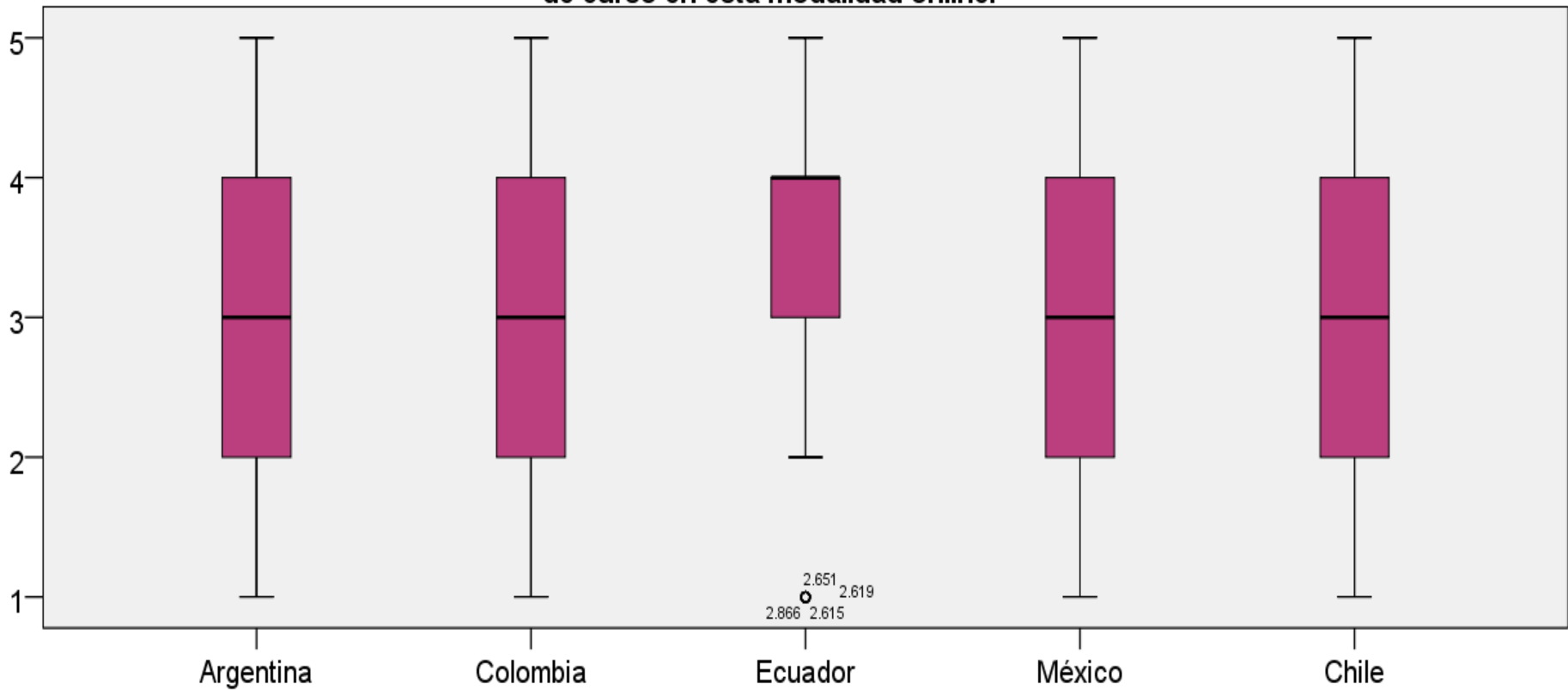
	Chile	Ecuador	Argentina	Colombia	México
M	4.06	4.43	3.42	4.48	4.39
SD	0.62	0.56	0.98	0.42	0.55

- There are significant differences between Chile and Ecuador Colombia and Mexico.
- There are differences between Argentina and the rest of the countries. Argentina has a lower average.
- There are no differences between Ecuador, Colombia and Mexico.
- There are no significant differences according to the training cycle (initial, intermediate, final)

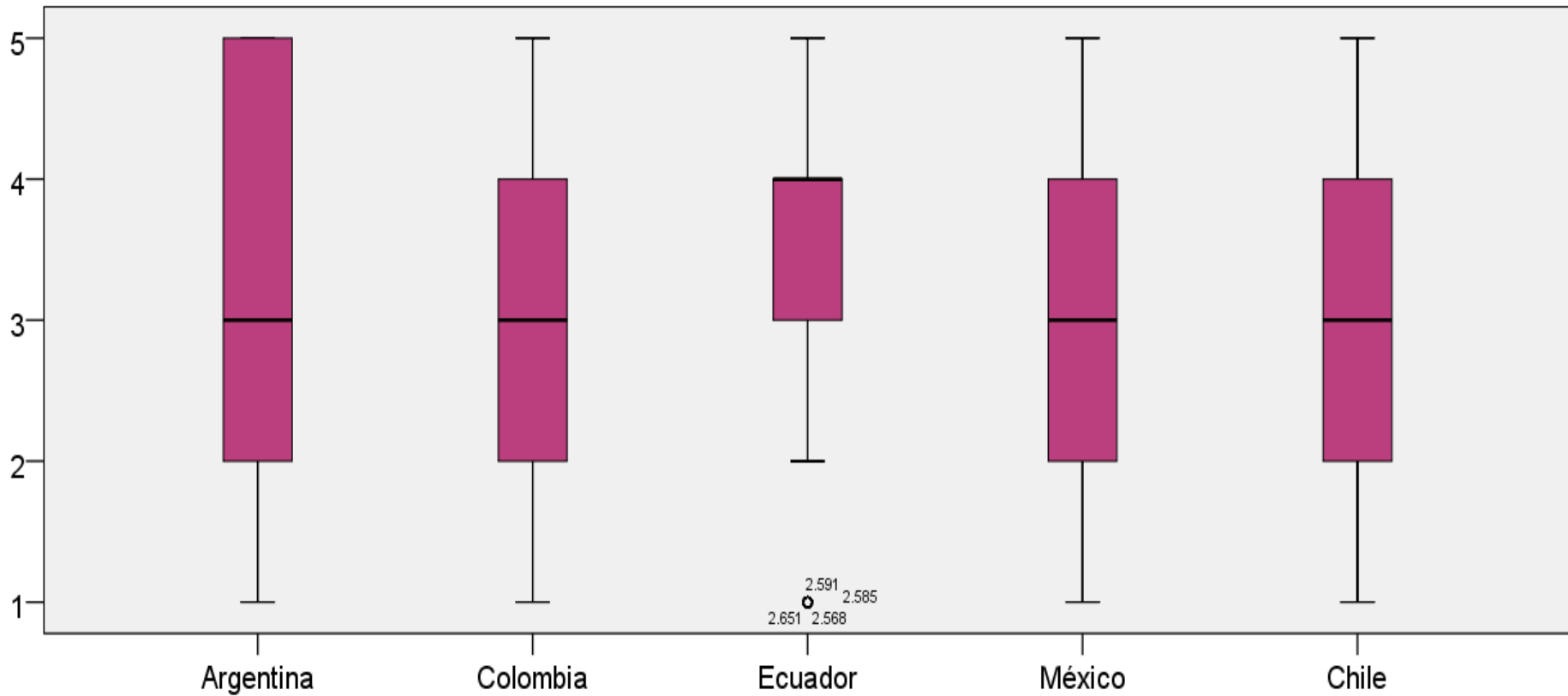
Q11- En las clases online, existen momentos en que los/las docentes organizan trabajos grupales a través de la plataforma.



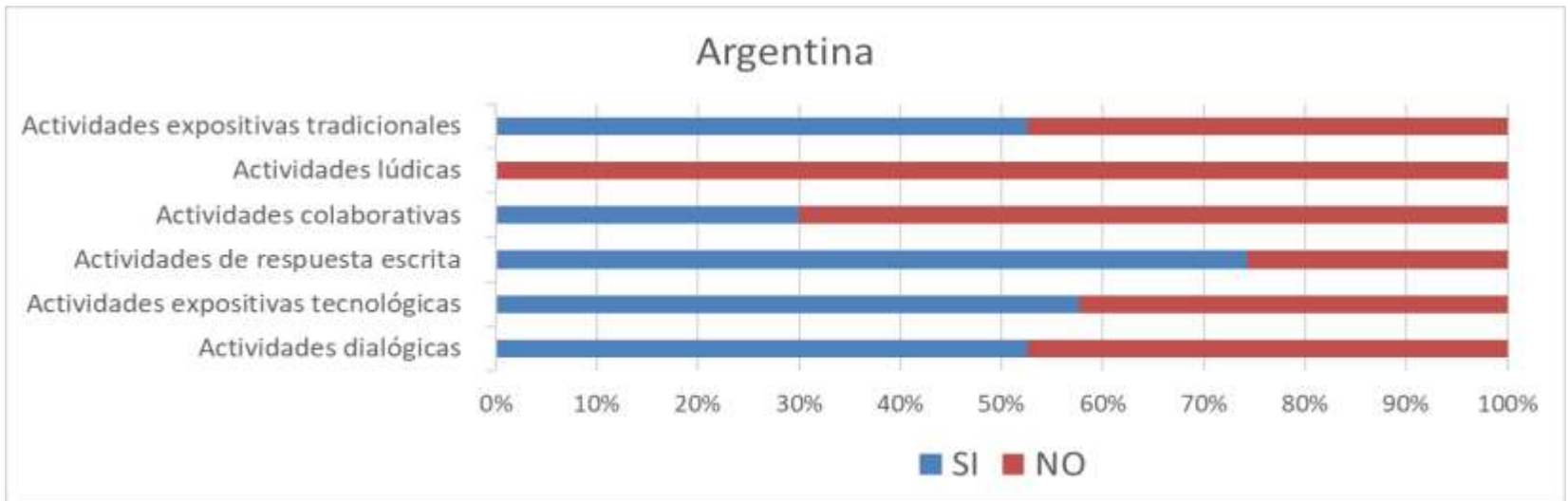
Q25- He aprendido más, sobre los contenidos, cuando me ha correspondido trabajar en grupo con mis compañeros/as de curso en esta modalidad online.



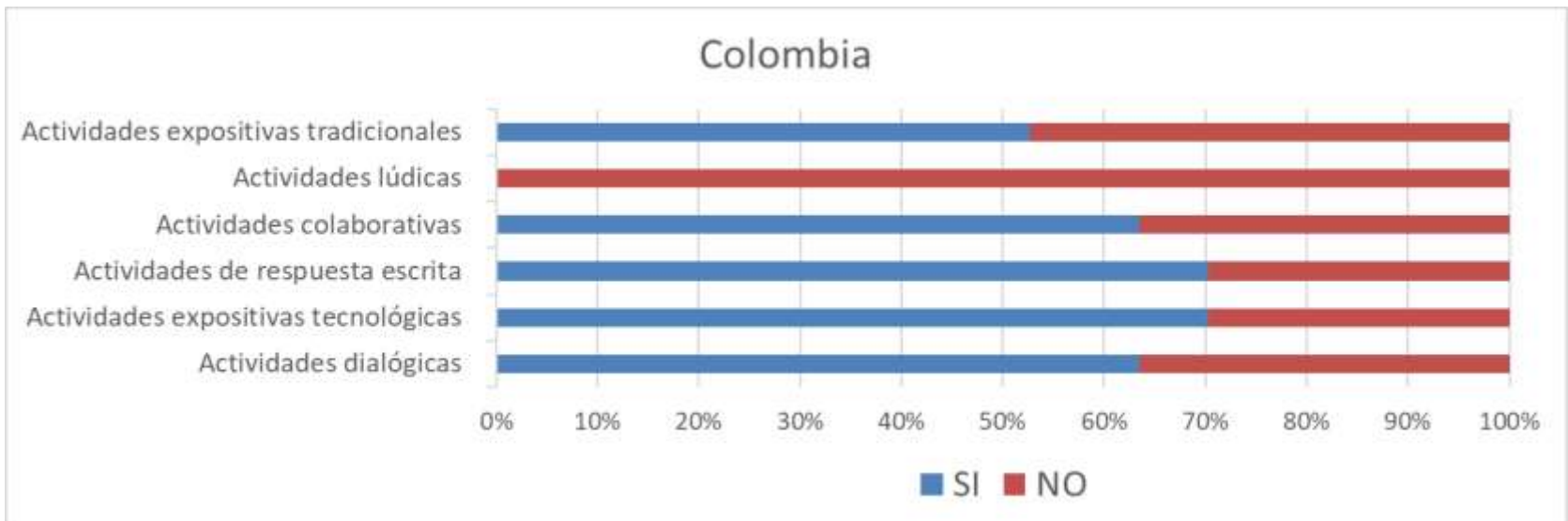
Q47- Me ha gustado trabajar con mis compañeros/as de curso en la modalidad online.



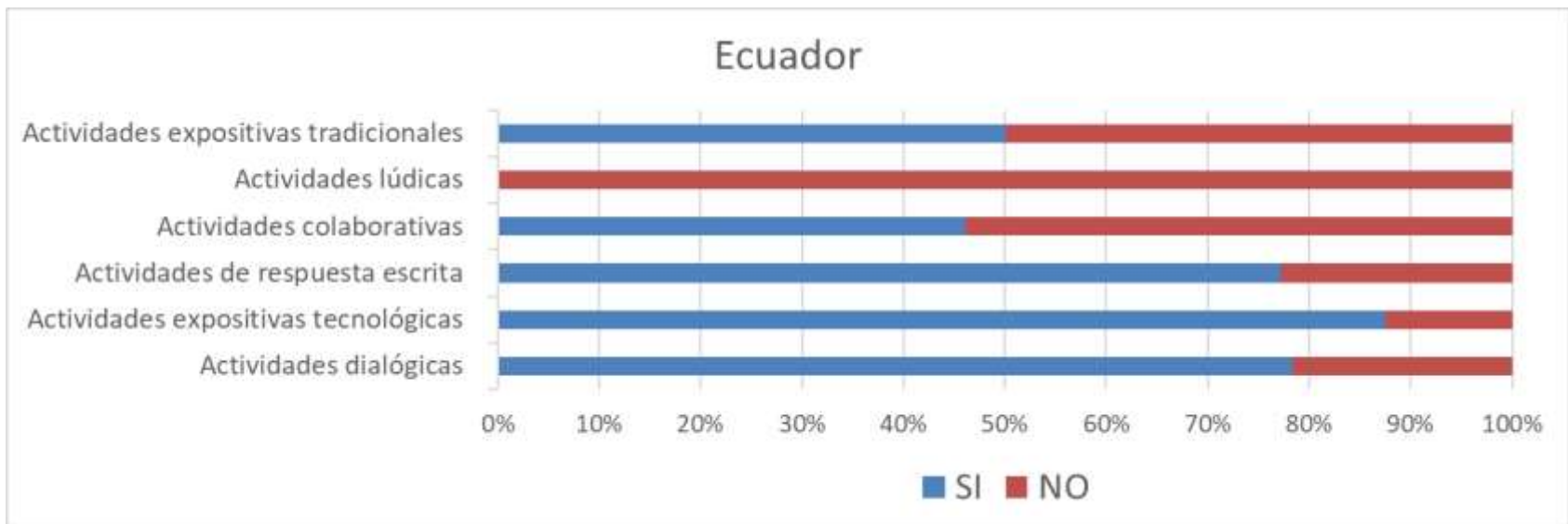
LEARNING STRATEGIES



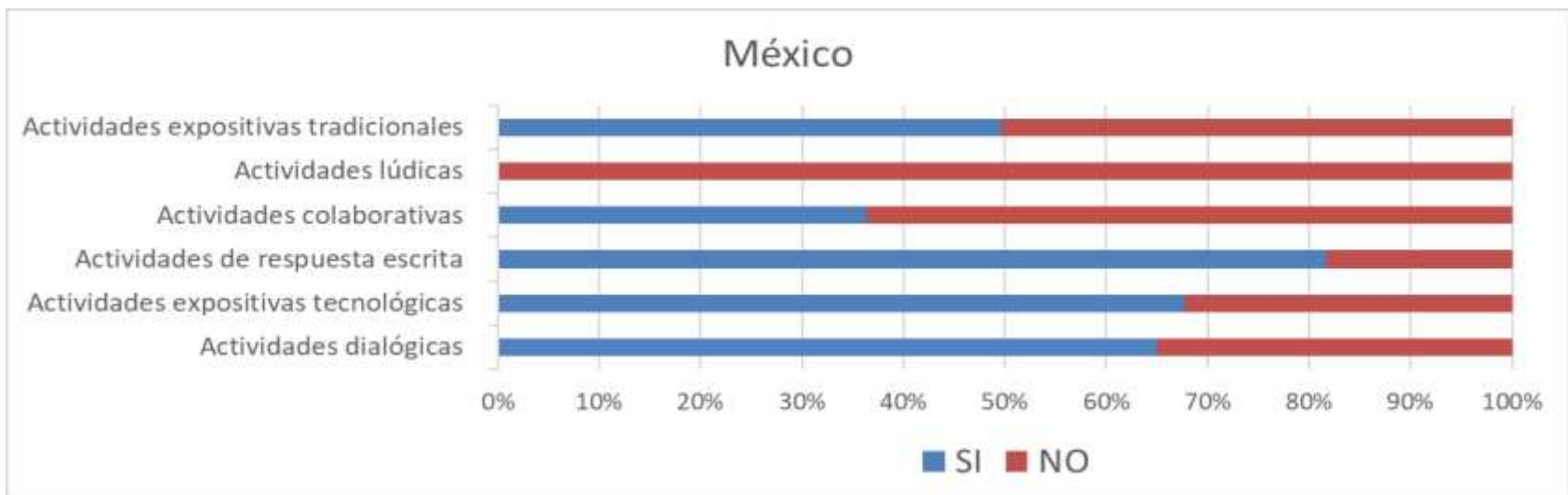
Along with Chile, Argentine students are the ones who perceive the least dialogic activities in online classes.



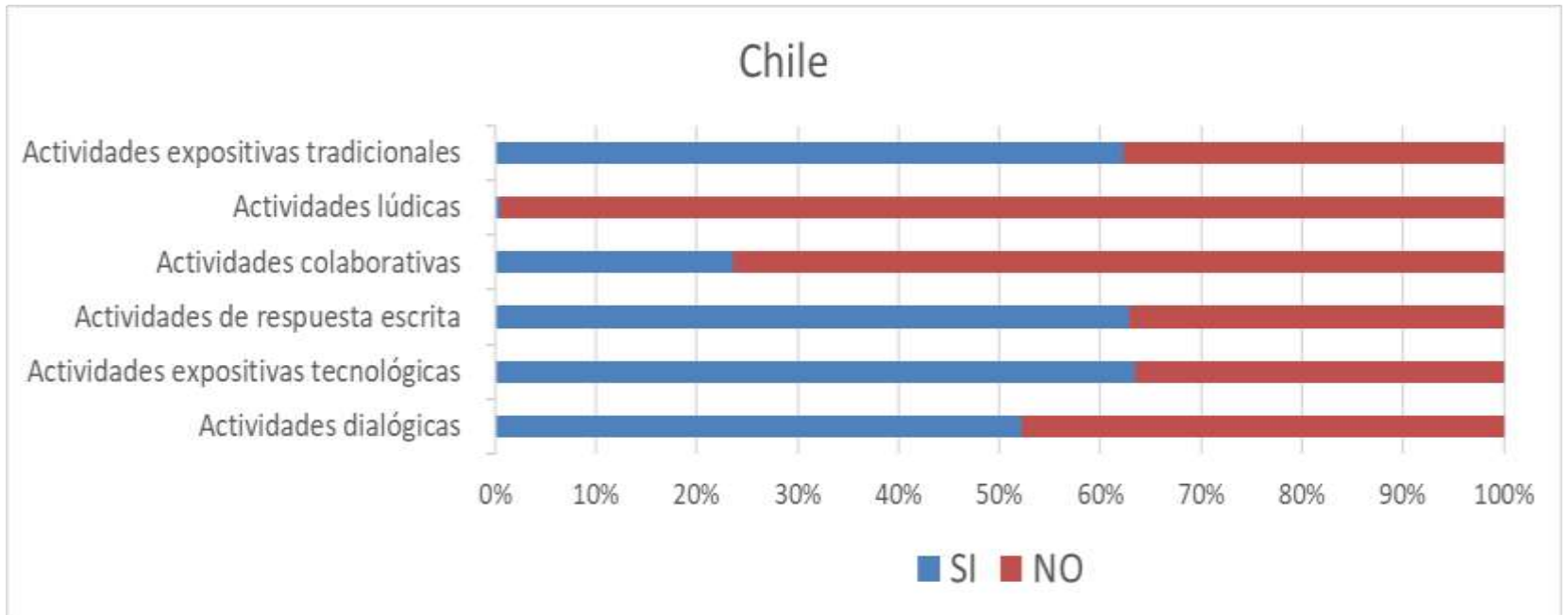
Colombian students are the ones who report the most collaborative activities online.



Ecuadorian students are the ones who report the greatest amount of technological and dialogic activities in online education.

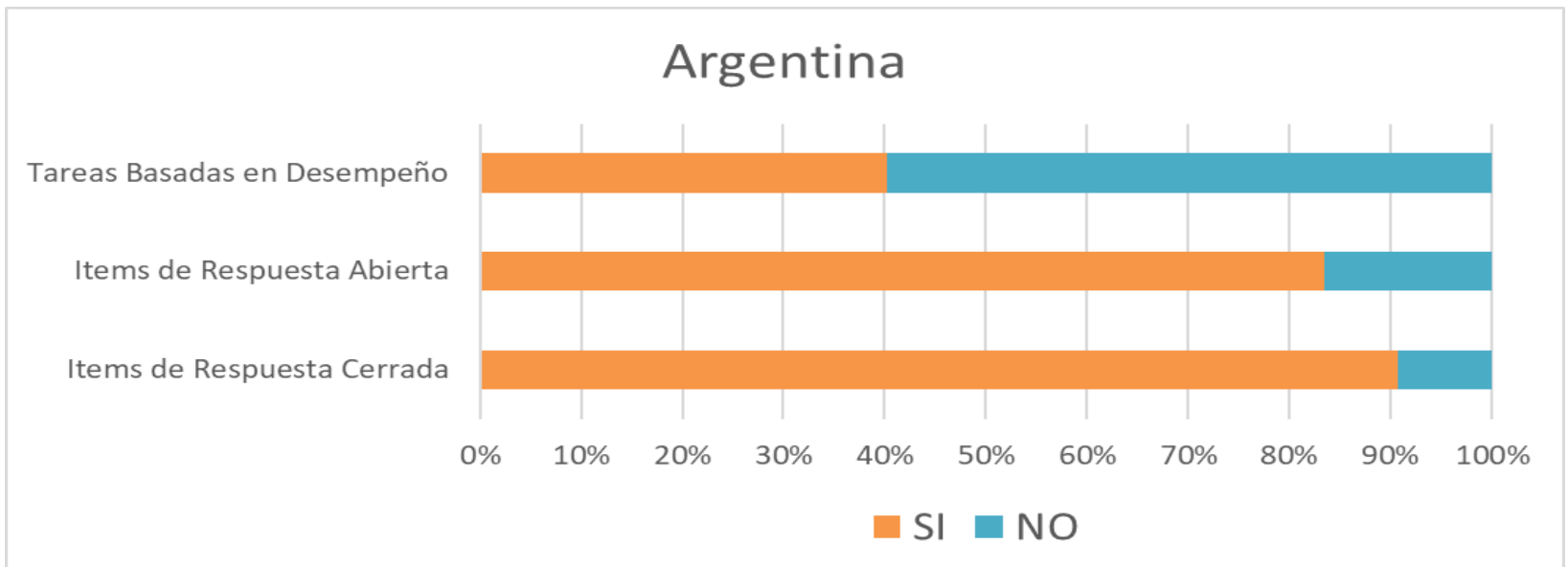


Mexican students report the greatest amount of written activities in online education.

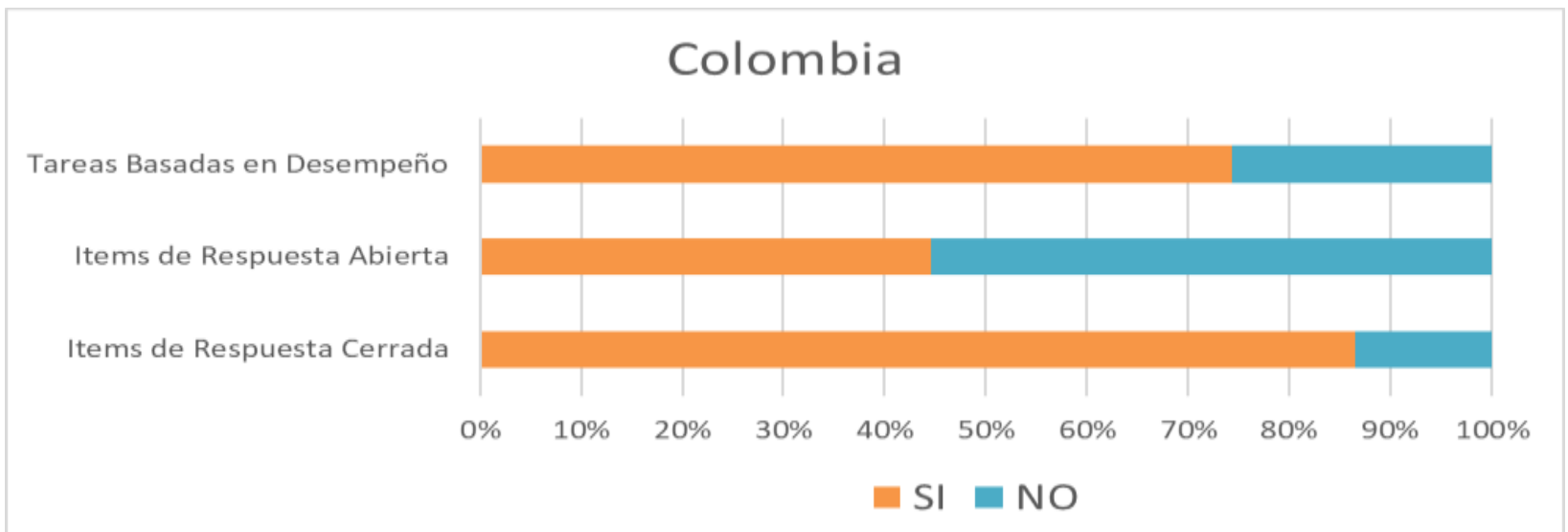


Chilean students are the ones who report the greatest amount of traditional and recreational activities online.

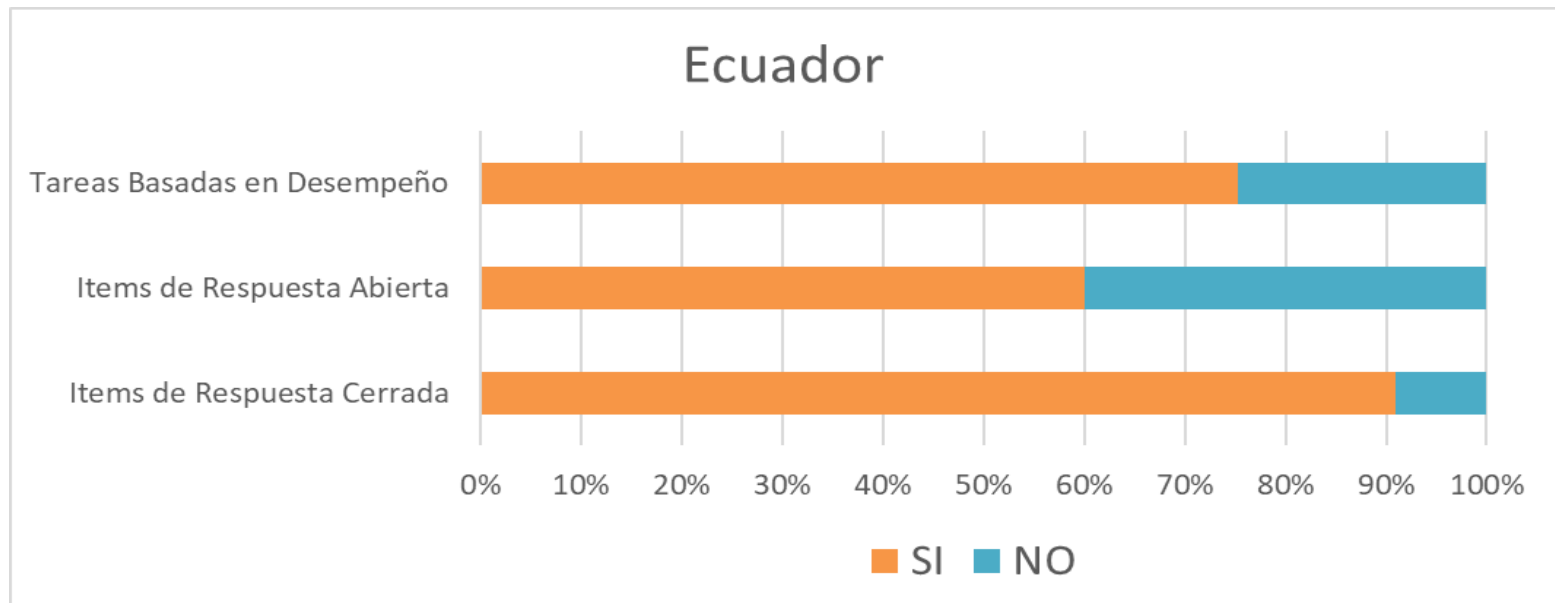
ASSESSMENT STRATEGIES



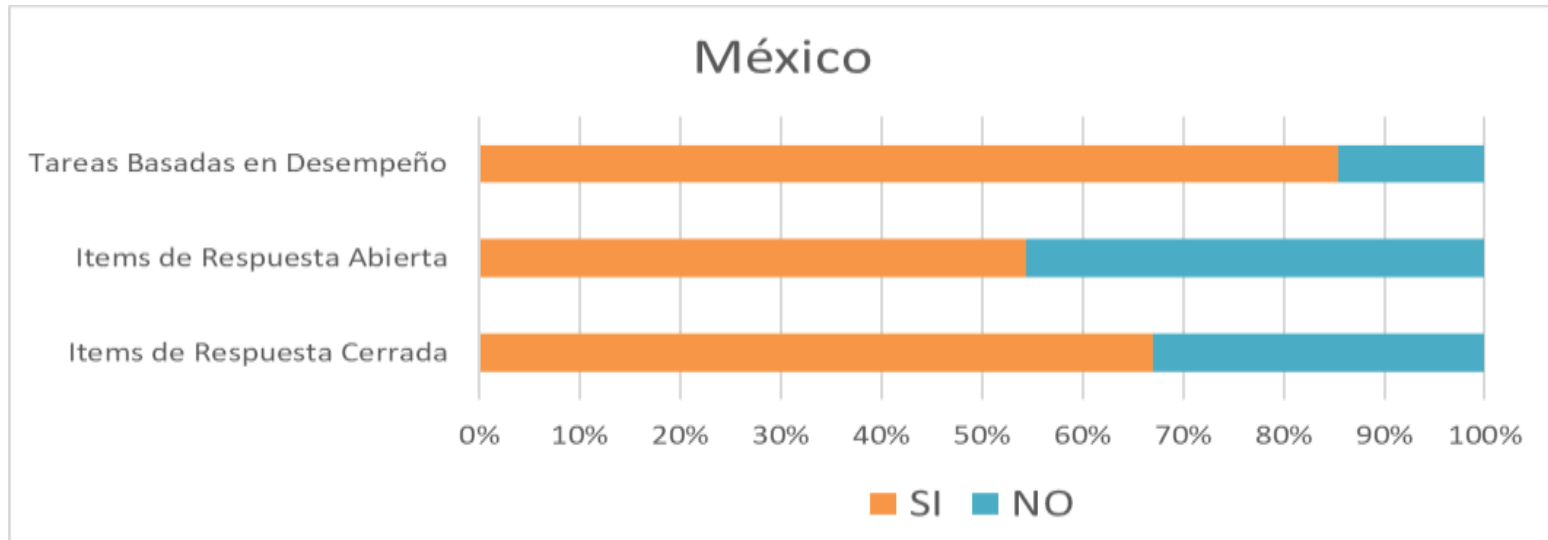
Argentinian students report a higher presence of closed-response items and a lower presence of performance-based tasks in their online assessments.



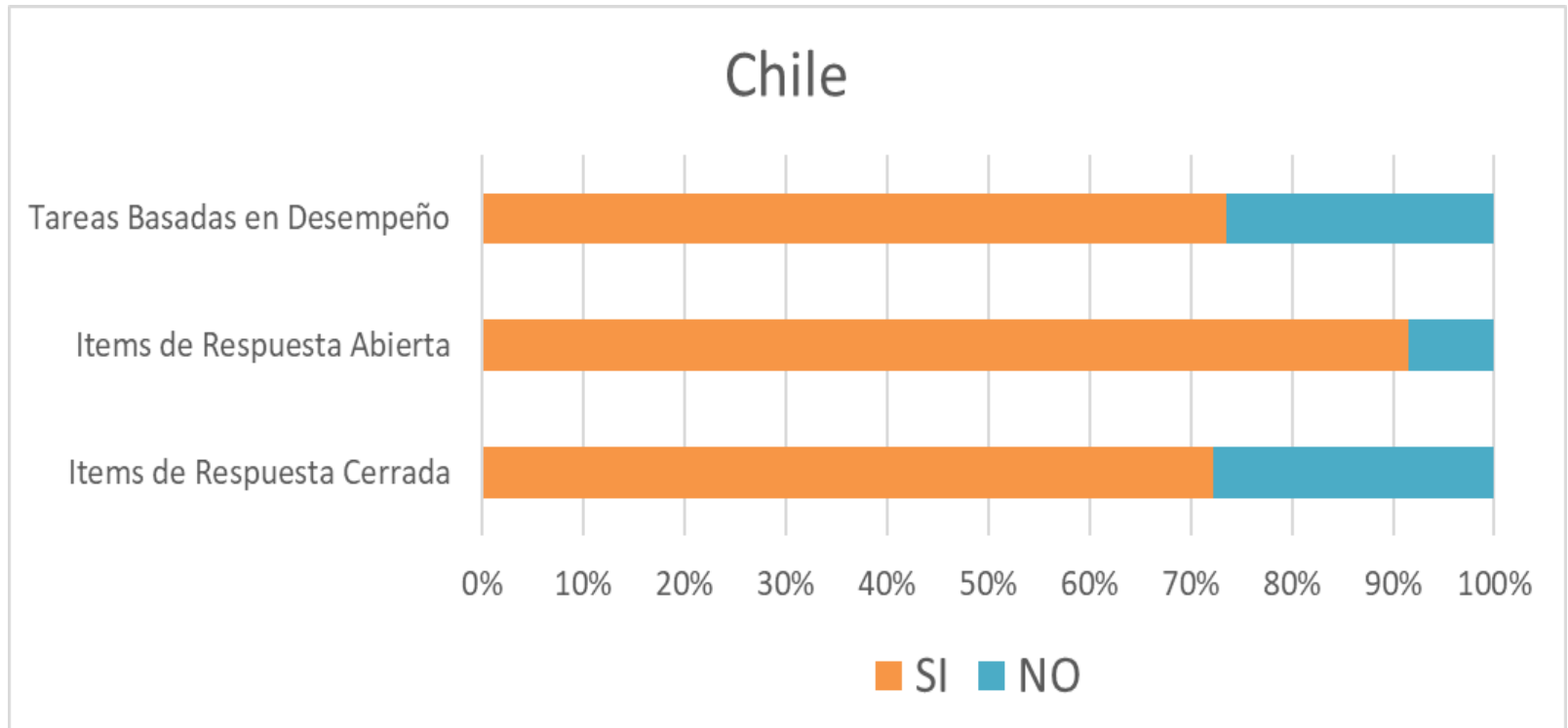
Colombian students report the least presence of open-response performance items in their online assessments.



Ecuadorian students report the highest presence of closed-response items in performance in their online assessments.



Mexican students report the highest presence of performance-based tasks and the least presence of closed-response items in their online assessments.



Chilean students report the greatest presence of open response items in their online assessments.

The positives of remote education

"Have all the material available: such as ppts (which are not given in person), texts, classes recorded as many times as you want (in person I write down what they achieved), and so on. Being able to go at your own pace: fixing your schedule by watching the classes already recorded ... "

"We have had to accommodate ourselves to learn in a new way, in addition the teachers must restructure all the contents and the way to deliver them, I believe that this prepares us to face a similar context in the future."

"The flexibility with the delivery of works and tests ..."

"Have more time to carry out the evaluations"

~~"That I have been able to access the information not only in the synchronous class, but also at~~
other times, since the classes are recorded and they serve me to study and retake the contents seen."

The negative of remote education

"Synchronous classes should be short videos"

"Classes where they are so extensive and flat in their development that the thread gets lost"

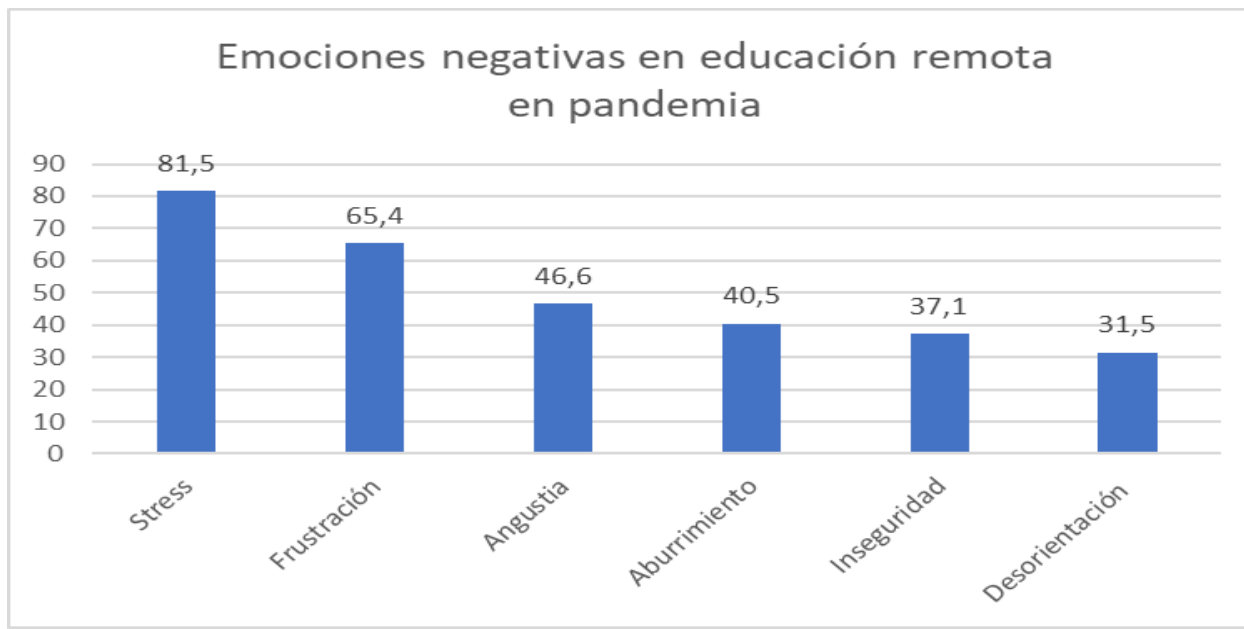
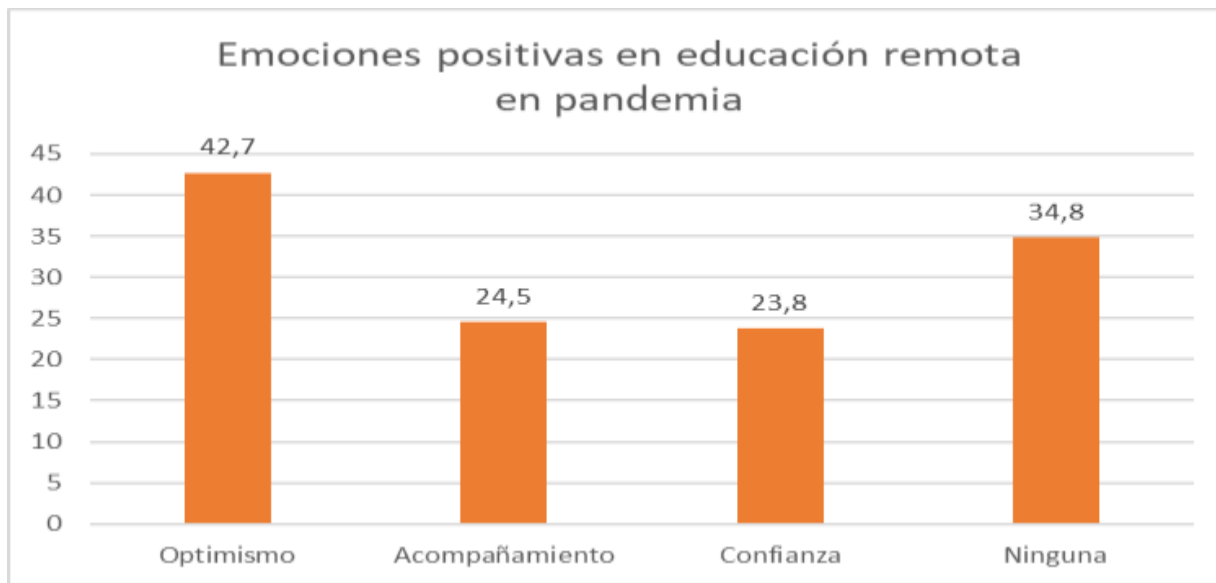
"They are too linear which makes me distract, I lose interest in the class which adds to my surroundings that does not help much"

"Teachers who have low pedagogy, forced to go online, highlight their lack of pedagogical tools when teaching. This is seen in teachers who show their images taken from a very theoretical book by videoconference ... "

"That they have generally been treated as if they were in a face-to-face way making it a mere exhibition and that also the duration is quite a lot, which ends up greatly damaging mental and physical health (sight)"

CHILEAN STUDENTS' EMOTIONS 2020

*Gender Differences



Comments of Chilean Students

- With regard to the pandemic, we have experienced different situations within our home that influence our learning, hinder the way in which we face a branch and our own understanding of the matter “
- "Personally I have felt more stressed conducting online classes than face-to-face"

Only Chilean Data
Measurement 1-
2020

Some Data

- 84.3% of the students indicate that their classes were in the synchronous mode.
- 61.4% of the students consider that the number of synchronous classes per week was adequate.
- 37.2% of the students reported that the teachers raised realistic problems or situations where they applied the content they discussed in the online class.



Some Data

- 59.7% of students indicate that there are times when teachers organize group work through the platform. But, only 45% declare that the teachers monitor the group work carried out.
- 15.2% state that they have had an online meeting with teachers, individually, to resolve doubts or to delve into some content.



Some Data

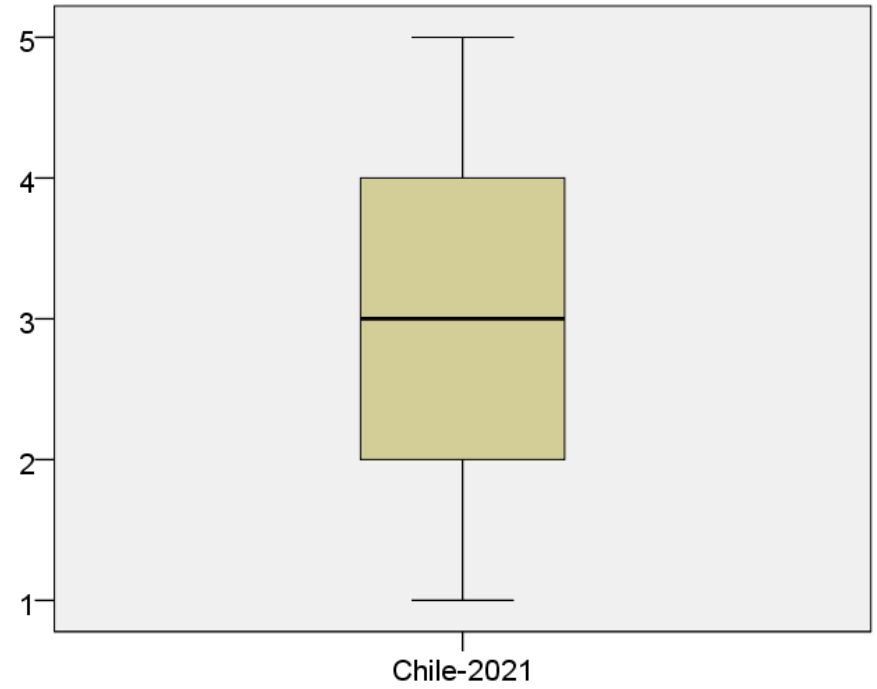
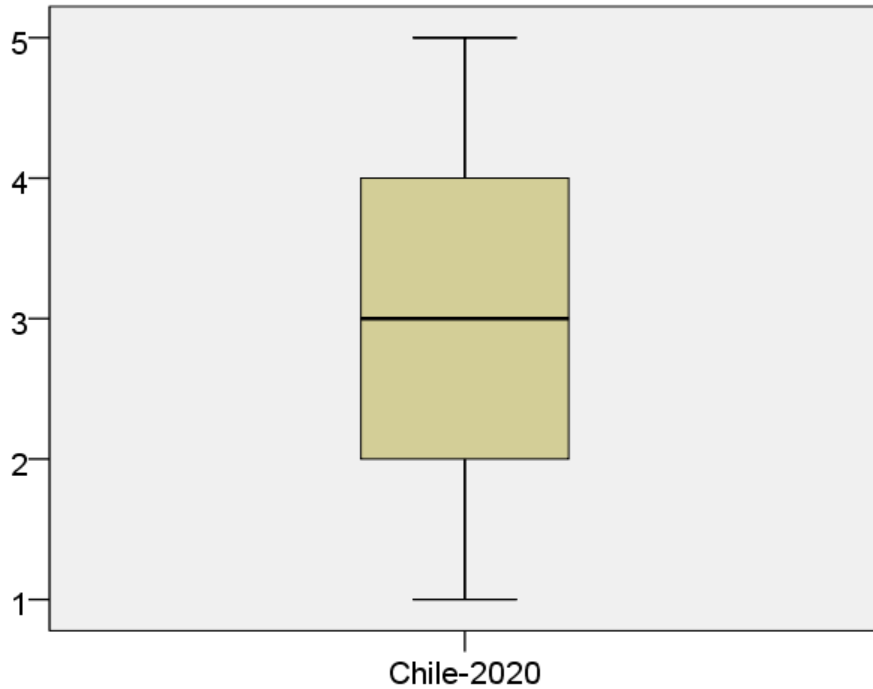
- 91.3% of the students indicate that the exposure of the teachers is greater than 30 minutes in each online class. 25.4% report that teachers do some recess in class.
- 95% of students report that there is respect for teachers and 94% state that teachers show respect for their students in online classes



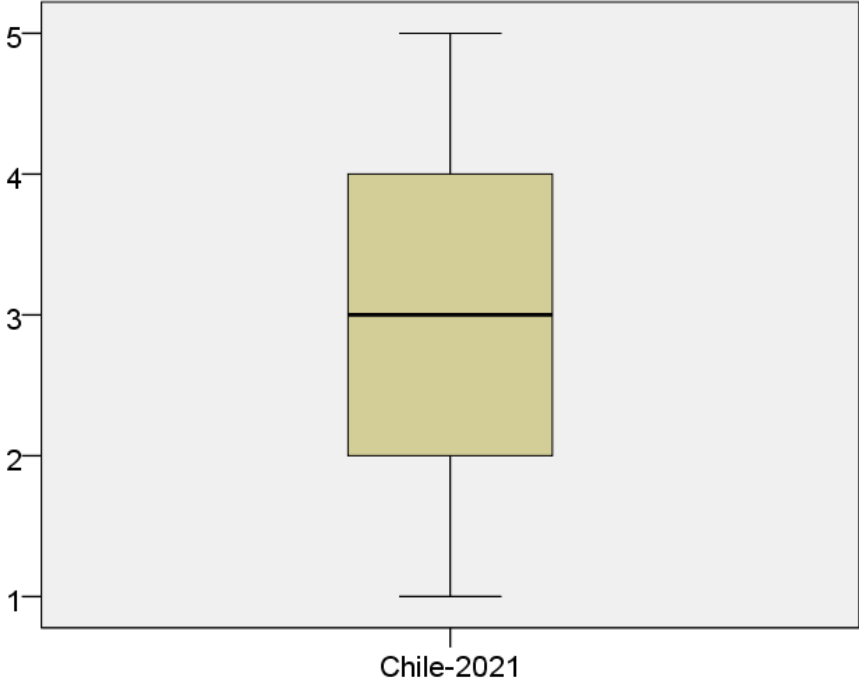
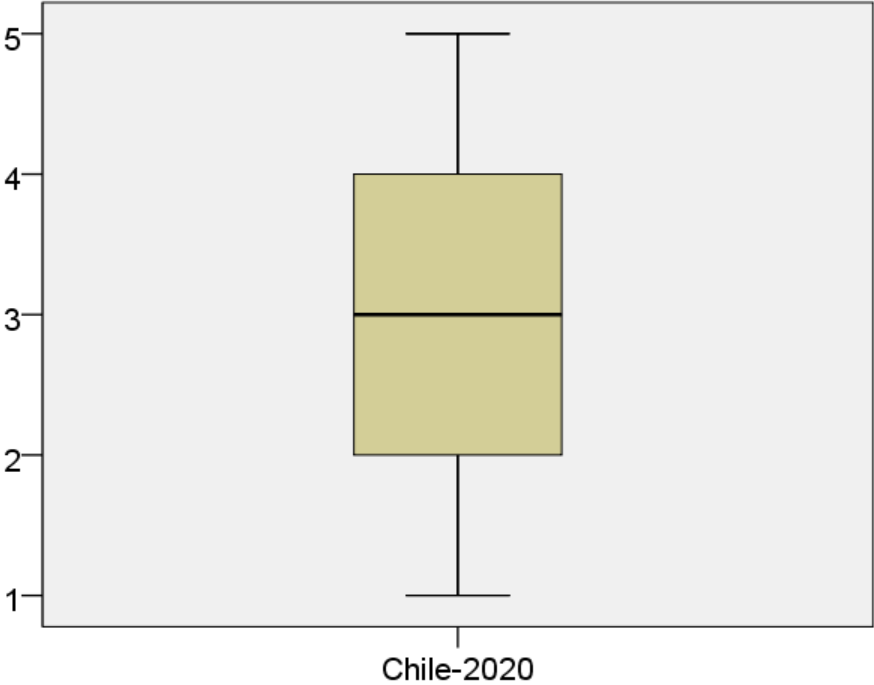
**PERCEPTIONS VARIATION
2020-2021,
CHILEAN STUDENTS**

EMPATHY IN PANDEMIC

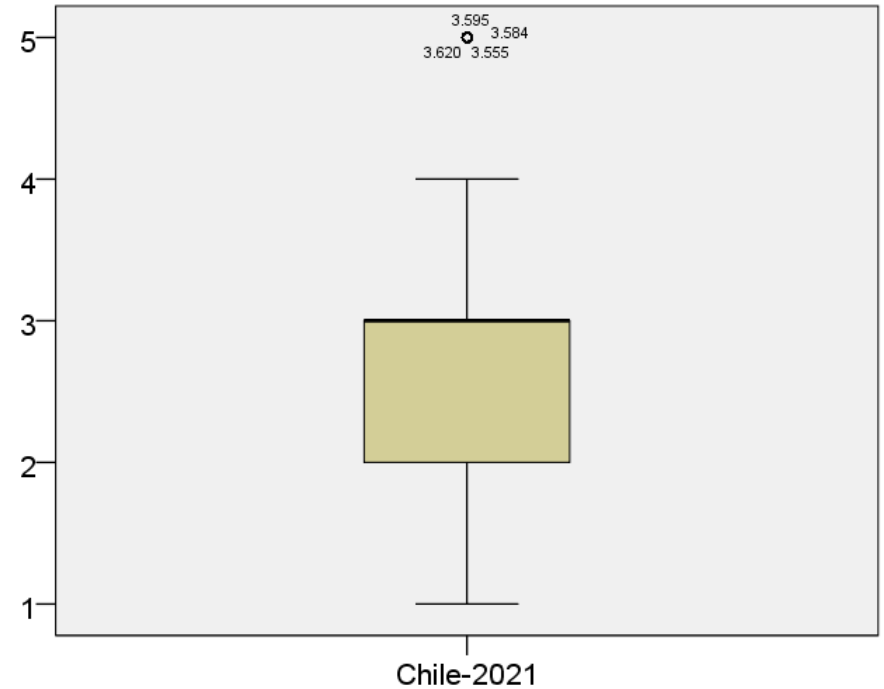
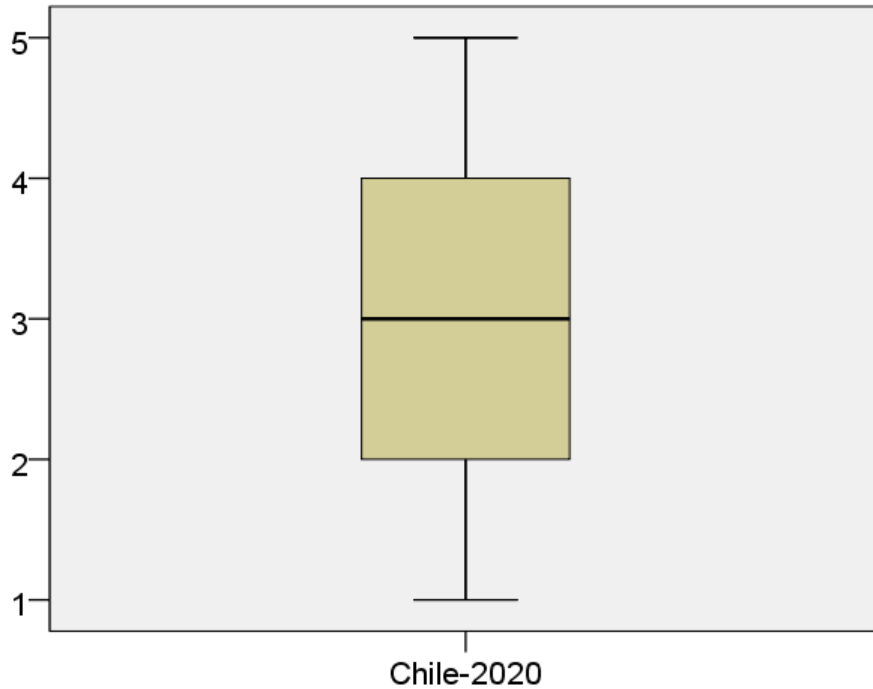
Q1- In the online classes, the teachers have shown interest in how I and my family are doing in the context of the current pandemic.



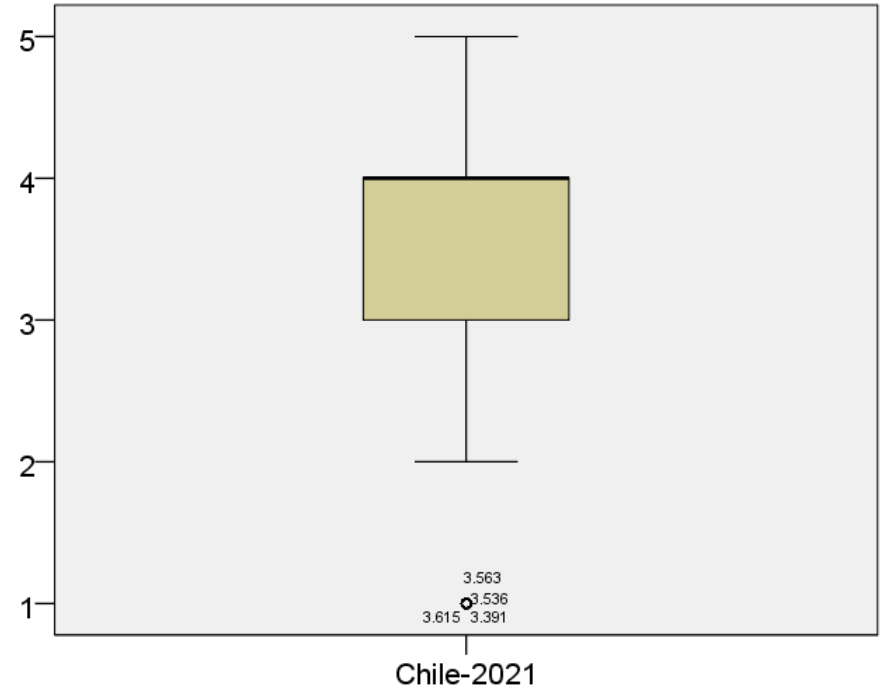
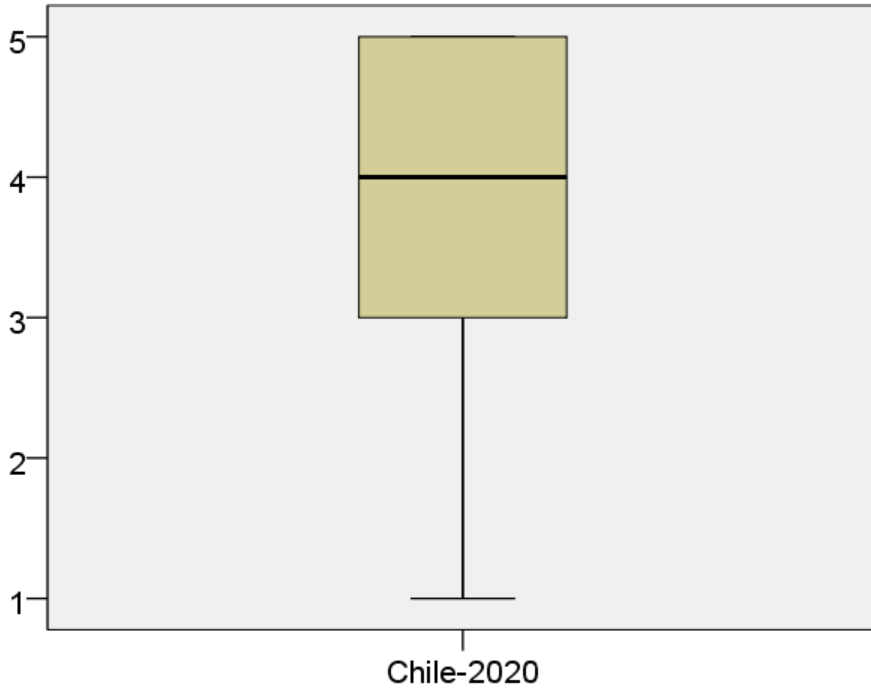
Q2- Teachers spend minutes at the beginning of classes to ask ourselves how we have been in this stage of confinement.



Q3- Teachers ask us about how we face this stage of online education.

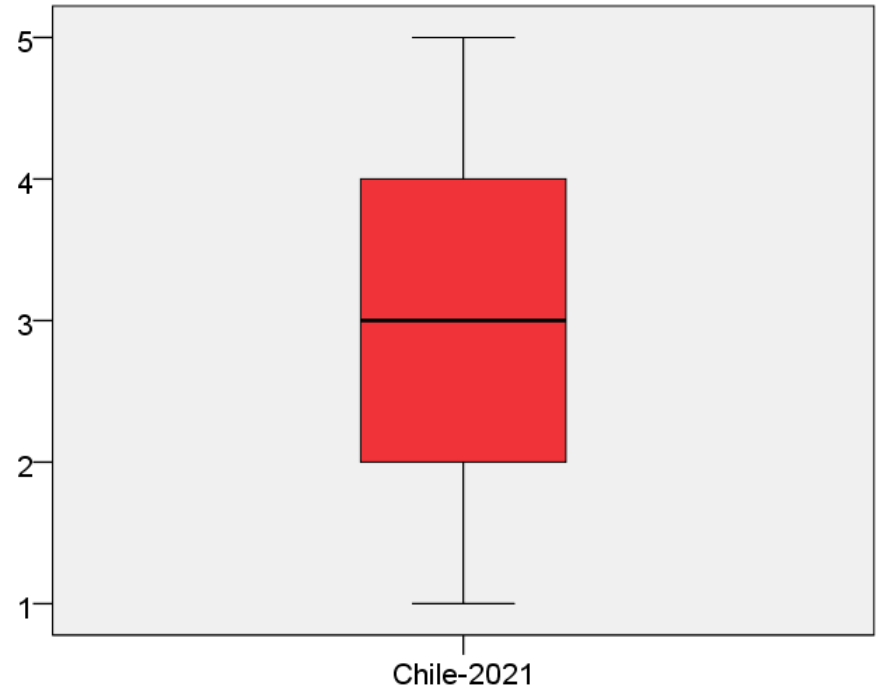
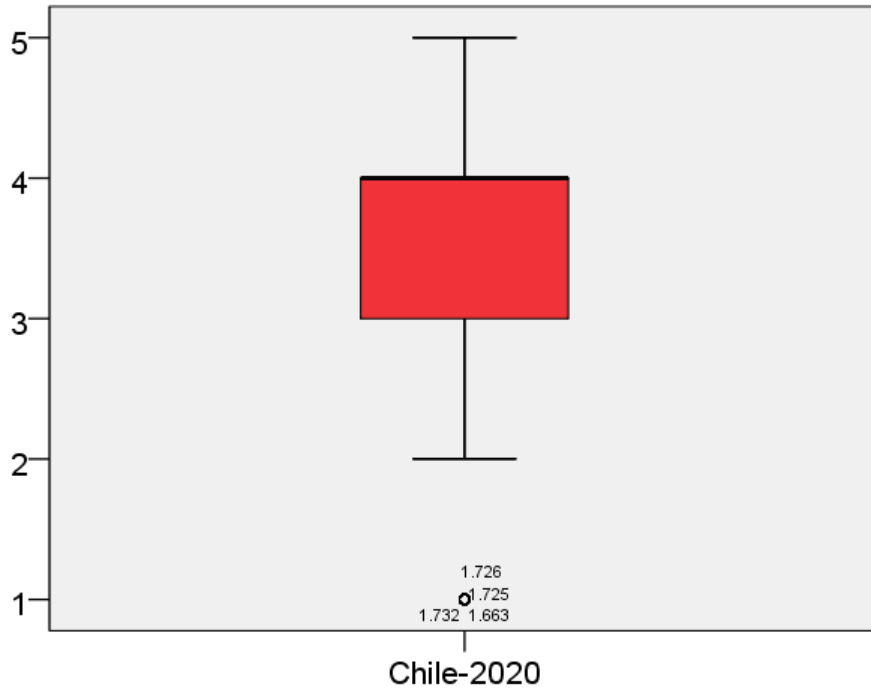


Q18- Teachers show interest in their students learning online.

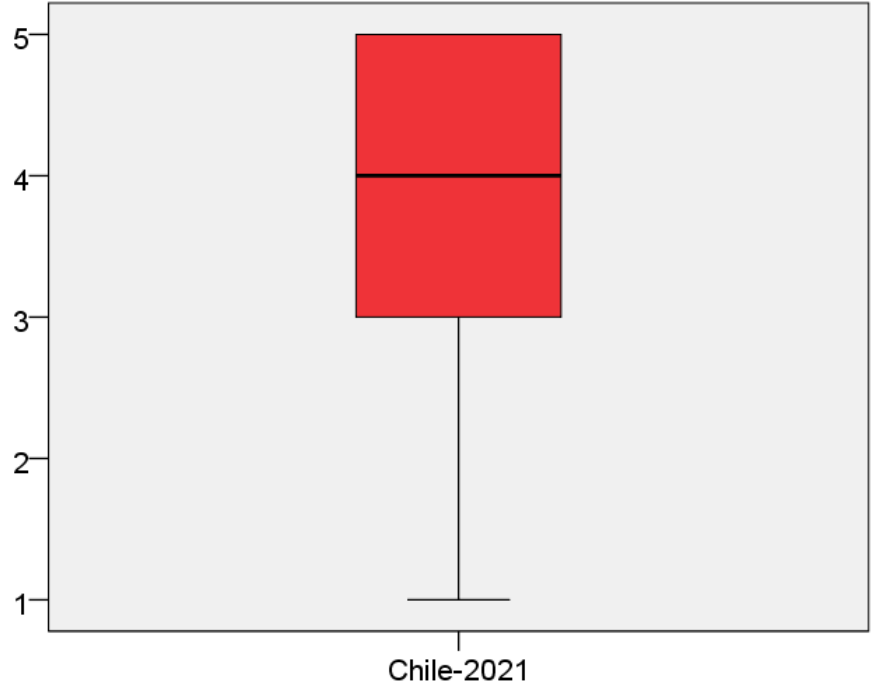
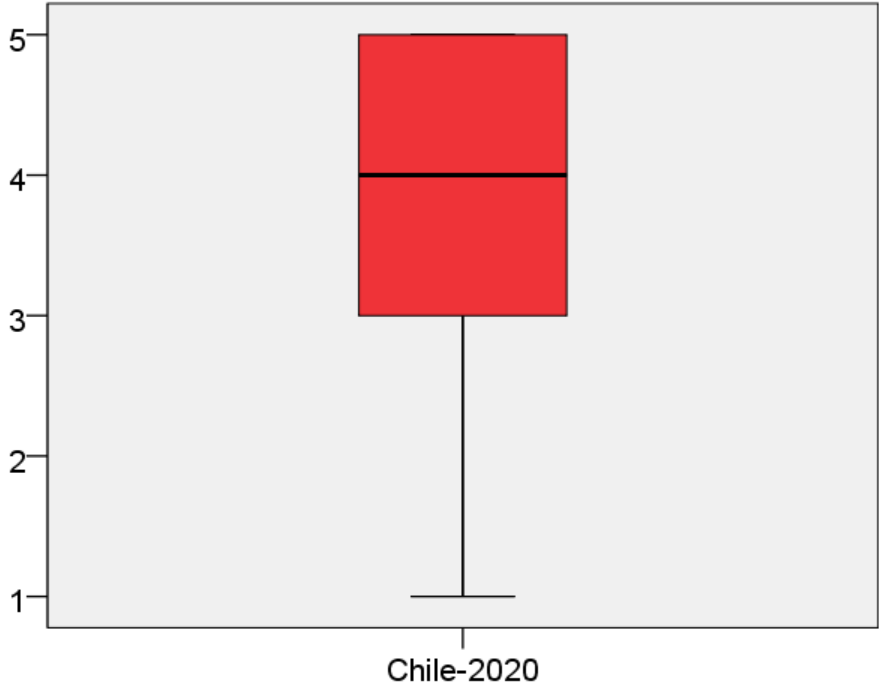


DIALOGIC INTERACTION

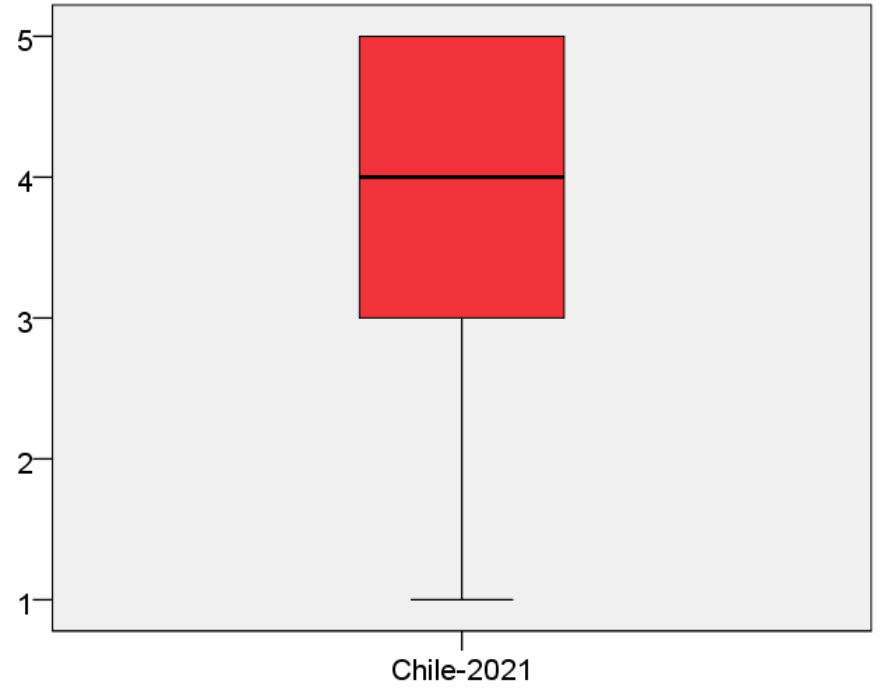
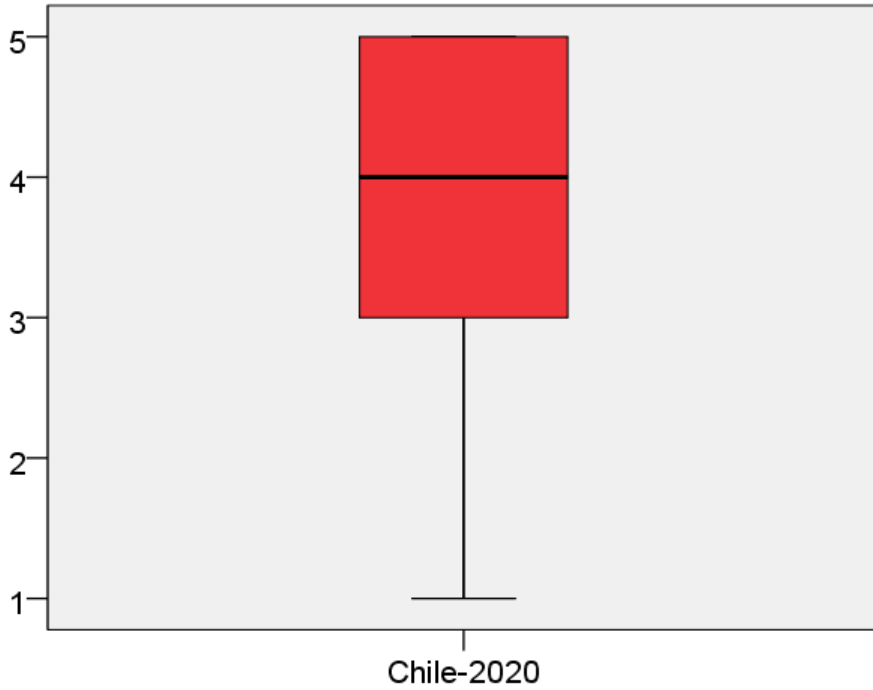
Q8- The online classes allow me to dialogue with the teachers.



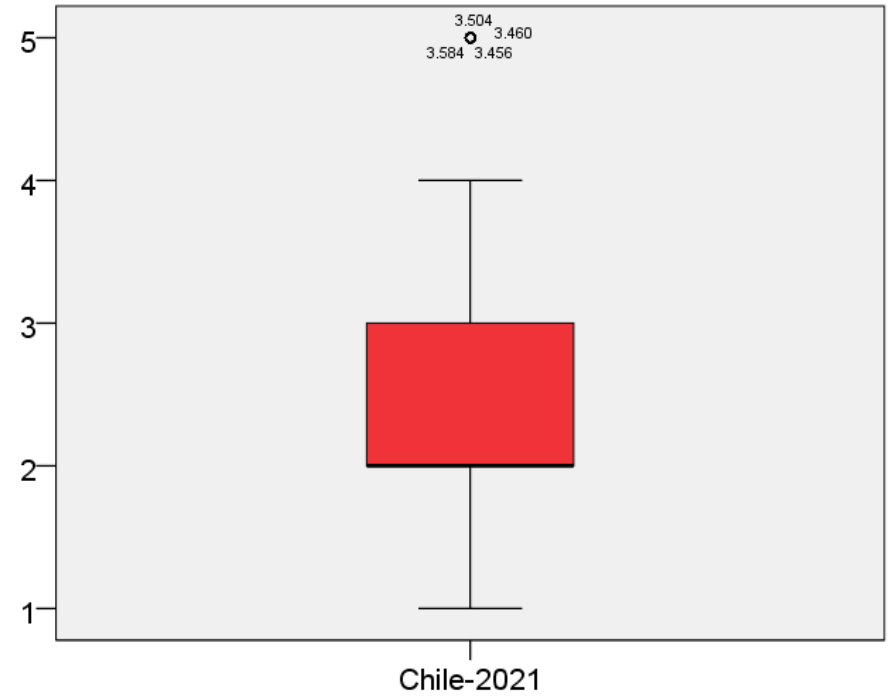
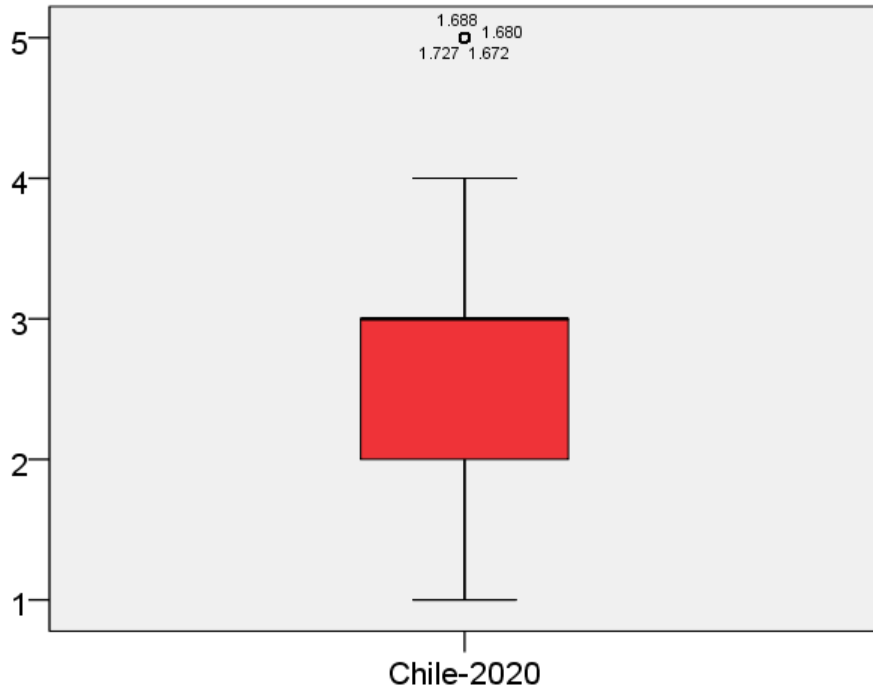
Q9- I have been able to ask questions in the online classes.



Q10- In online classes, the teacher gives a space to listen to the opinions of the classmates.



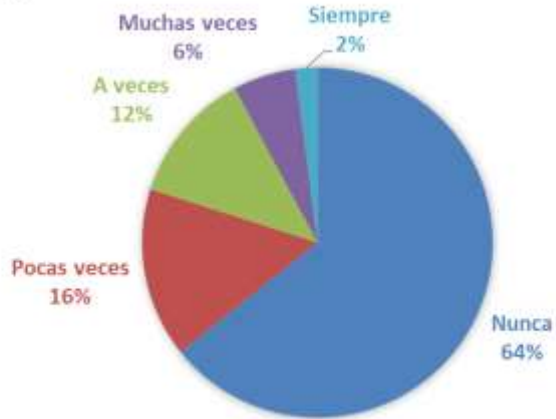
Q21- Student participation in online classes is high.



ACADEMIC INTEGRITY

Q39- I have Cheating while doing an online assessment.

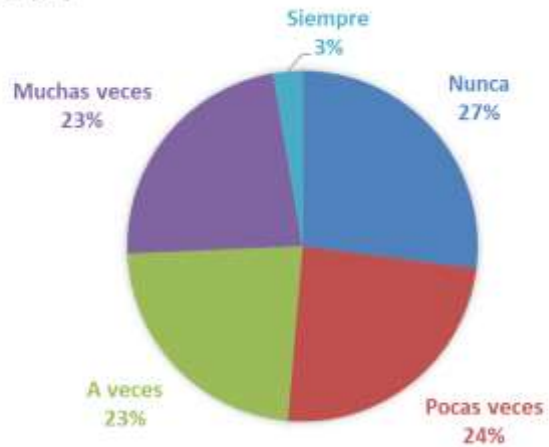
MÉXICO



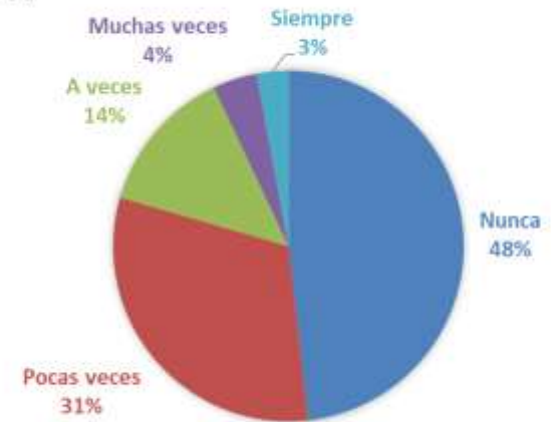
ARGENTINA



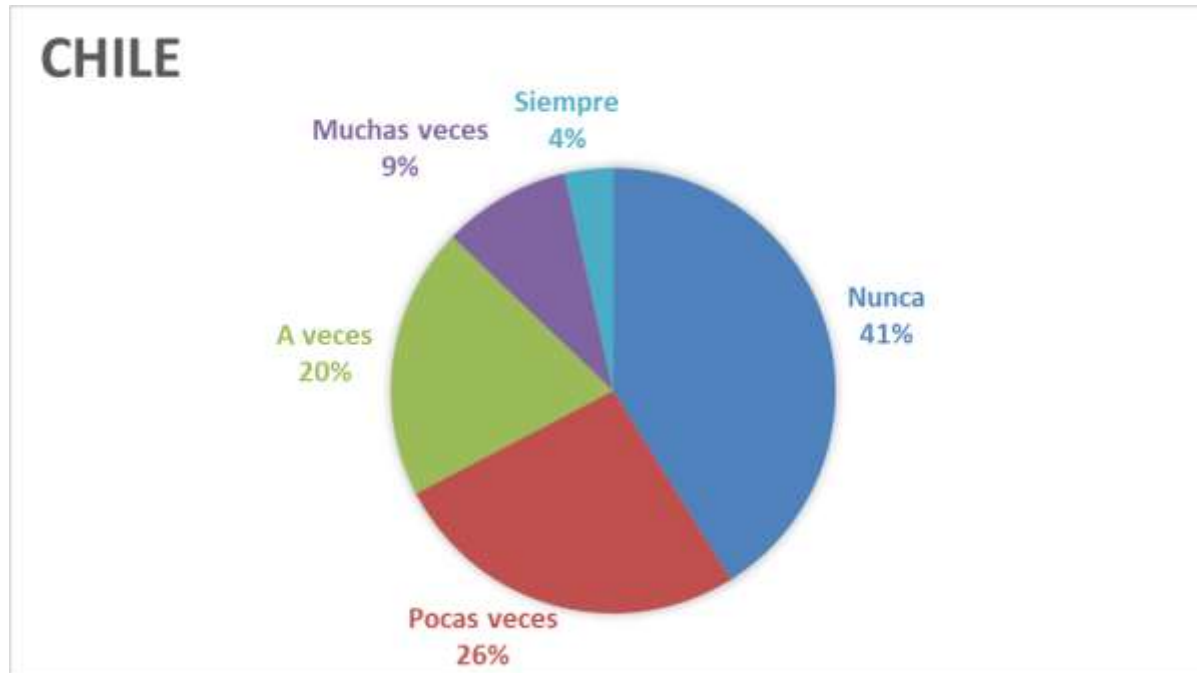
COLOMBIA



ECUADOR



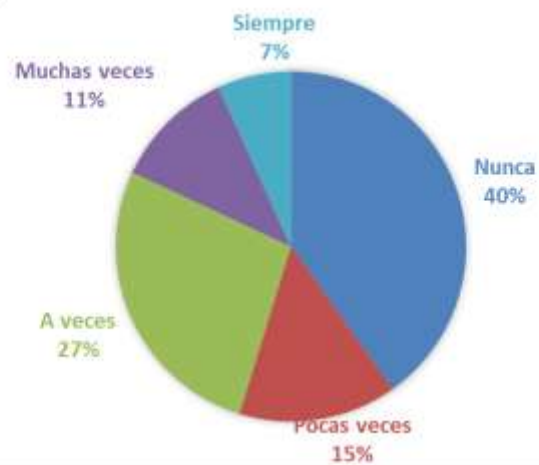
Q39- I have cheated doing an online assessment.



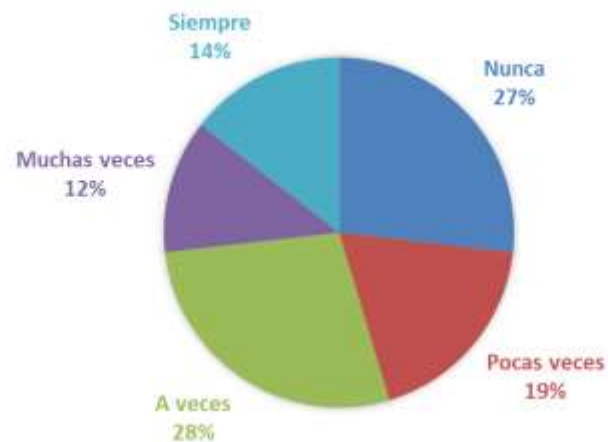
- Colombian students are the ones who most report having copied “always” and “many times”, and those who state the least that they “never” have copied.
- Argentinian students are the ones who least report having copied “always” and “many times”, and those who state the most that they “never” have copied.
- Chile is at an average level.

Q40- Creo que mis compañeros copian al realizar la evaluación online

MÉXICO



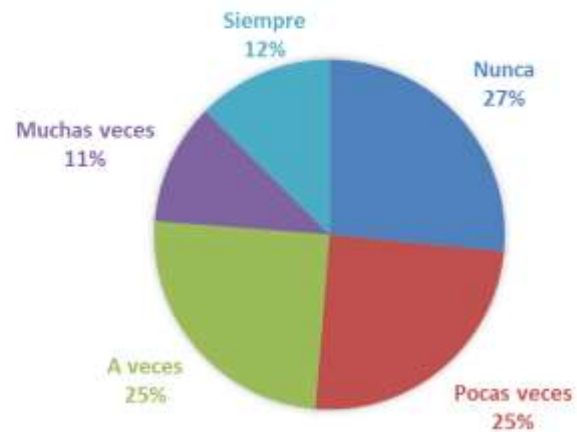
ARGENTINA



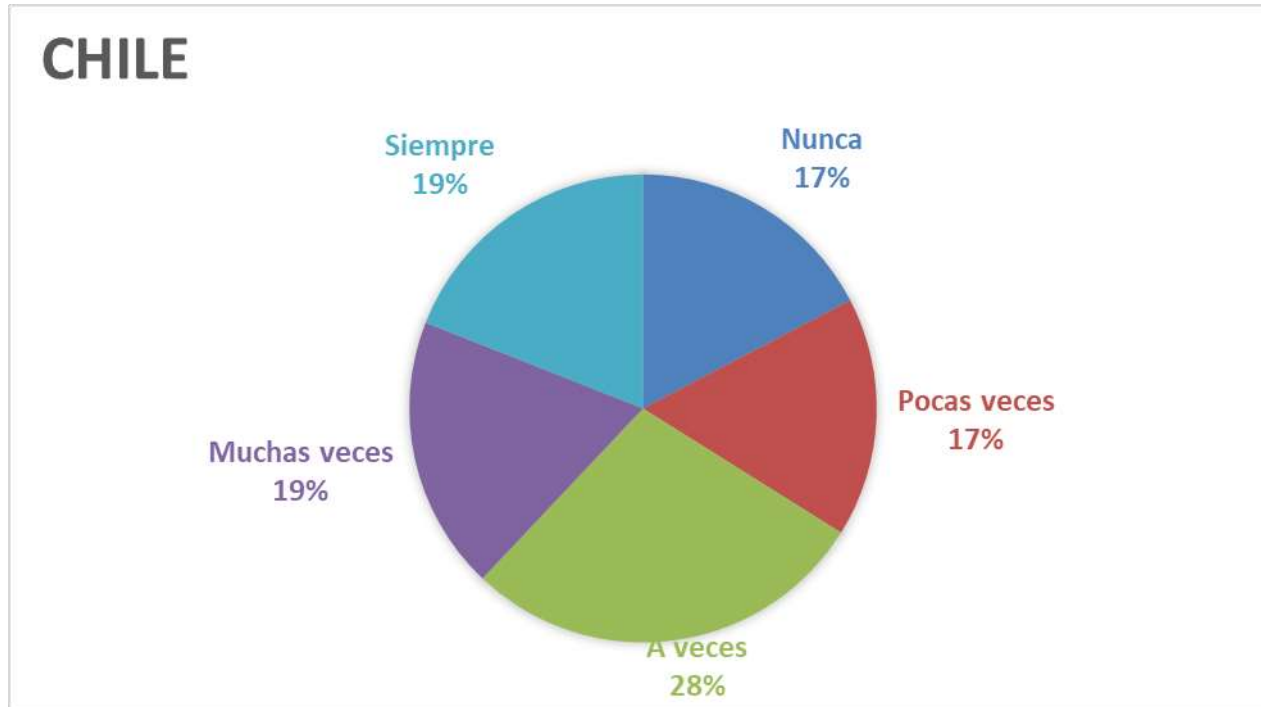
COLOMBIA



ECUADOR



Q40- Creo que mis compañeros copian al realizar la evaluación online



- Los estudiantes colombianos son quienes más reportan que sus compañeros copian “siempre” y “muchas veces”, y los que menos plantean que “nunca” han copiado.
- Los estudiantes mexicanos son quienes menos reportan que sus compañeros copian “siempre” y “muchas veces”, y los que más plantean que “nunca” han copiado.
- Chile está en un nivel medio.

DIFFERENCES BY GENDER ANALYSIS- INTEGRITY IN EVALUATION

		I HAVE CHEATED...	MY CLASSMATES COPY MY ANSWERS
CHILE	MEN	2,17	3,22
	WOMEN	2,04	2,98
	SIGNIFICATIVE DIF.	YES	YES
ARGENTINA	MEN	1,49	2,71
	WOMEN	1,60	2,68
	SIGNIFICATIVE DIF.	NO	NO
COLOMBIA	MEN	2,59	3,12
	WOMEN	2,50	3,43
	SIGNIFICATIVE DIF.	NO	NO
ECUADOR	MEN	2,01	2,63
	WOMEN	1,77	2,58
	SIGNIFICATIVE DIF.	YES	NO
MEXICO	MEN	1,86	2,54
	WOMEN	1,58	2,22
	SIGNIFICATIVE DIF.	NO	NO

Model 1

Learning Perception - Measurement 1 Chile

			<i>95% CI</i>	
	<i>Coef.</i>	<i>EE</i>	<i>L. Inf.</i>	<i>L.Sup.</i>
Female	0.04	0.03	-0.02	0.11
Cicle (ref: 1)				
2	-0.12*	0.03	-0.19	-0.06
3	0.01	0.05	-0.08	0.11
Didactic organization	0.47*	0.03	0.41	0.53
Dialogic interaction	0.27*	0.03	0.22	0.32
Empathy in pandemic	0.04	0.02	-0.01	0.08
Assessment	0.02	0.02	-0.02	0.05
Int.	0.31*	0.08	0.15	0.48

*: $p < 0.001$

Model 2

Perception of Demand - Measurement 1 Chile

			95% CI	
	<i>Coef.</i>	<i>EE</i>	<i>L. Inf.</i>	<i>L.Sup.</i>
Female	0.19**	0.04	0.11	0.27
Cicle (ref: 1)				
2	0.06	0.04	-0.02	0.14
3	-0.08	0.06	-0.20	0.04
Didactic organization	-0.26**	0.04	-0.34	-0.18
Dialogic interaction	-0.20**	0.03	-0.26	-0.13
Empathy in pandemic	-0.08*	0.03	-0.14	-0.03
Assessment	0.01	0.02	-0.03	0.06
Int.	5.62**	0.11	5.41	5.83

*: $p < 0.01$; **: $p < 0.001$

Current lines of work

- Student profiles regarding variables of self-regulation, emotional repertoire, commitment, perceived learning, etc.
- Models of multiple interactions, using structural equations, to analyze direct and indirect effects with respect to variables of interest.
- Incorporate sociocultural and organizational structures to see, through hierarchical models, how and how much they affect students' perceptions.
- Replicate previous studies for teachers.
- Integrate both databases with traceability to assign causal or interaction effects (or at least isolate them by categorical units)

Post Pandemic Discussion

- Face-to-face teaching is different from remote teaching. Dialogical, collaborative, playful teaching activities and with the use of software should be promoted.
- Remote education is here to stay, it opens up many opportunities and requires a different instructional design and implementation of the educational process.
- Didactics and dialogic interaction are two variables that significantly predict learning.
- Teacher-student bond (containment, visibility, dyadic relationship) impacts learning.
- Pandemic emotions may be impacting Chilean students, in their most critical view of remote education. Possible joint action with social outbreak.
- Evaluation is the Achilles heel. Although many open-ended questions are used in Chile and Colombia, and performance-based tasks in Mexico, the problem of copying and plagiarism is relevant to study.
- Importance of feedback to promote self-regulation of students.

