

InTruST Student Questionnaire

Implementation Results (Austria & Spain)



1. Overview

This report summarises feedback collected through the InTruST student questionnaire following the first cycle of implementation activities in **Austria** and **Spain**. In total, **497 valid responses** were collected across five schools with substantial participation. All responses were translated into English, and closely related activity names (e.g. spelling and language variants) were merged into common categories.

Students rated four statements on a five-point agreement scale (1 = Strongly Disagree to 5 = Strongly Agree) and answered three open-ended questions about the most interesting and most challenging aspects of the activities, as well as suggestions for improvement.

2. Overall Agreement

Across all activities, the activities' implementation was received very positively, especially regarding **knowledge gain** and **enjoyment**. Agreement was slightly lower, though still net-positive, on the last two items measuring deeper and broader interest in science. This is a relatively positive outcome in itself: it suggests that students understand that developing a deeper and broader interest in science takes time and is a long-term process, built gradually through sustained exposure to scientific facts and inquiry rather than through a single activity.

Question	Positive %	Neutral %	Negative %	Mean
Q1 – Improved my knowledge	83%	12%	5%	4.16
Q2 – The activity was fun	81%	12%	7%	4.27
Q3 – Increased interest in topic	59%	26%	15%	3.74
Q4 – Sparked interest in science	56%	24%	20%	~3.5

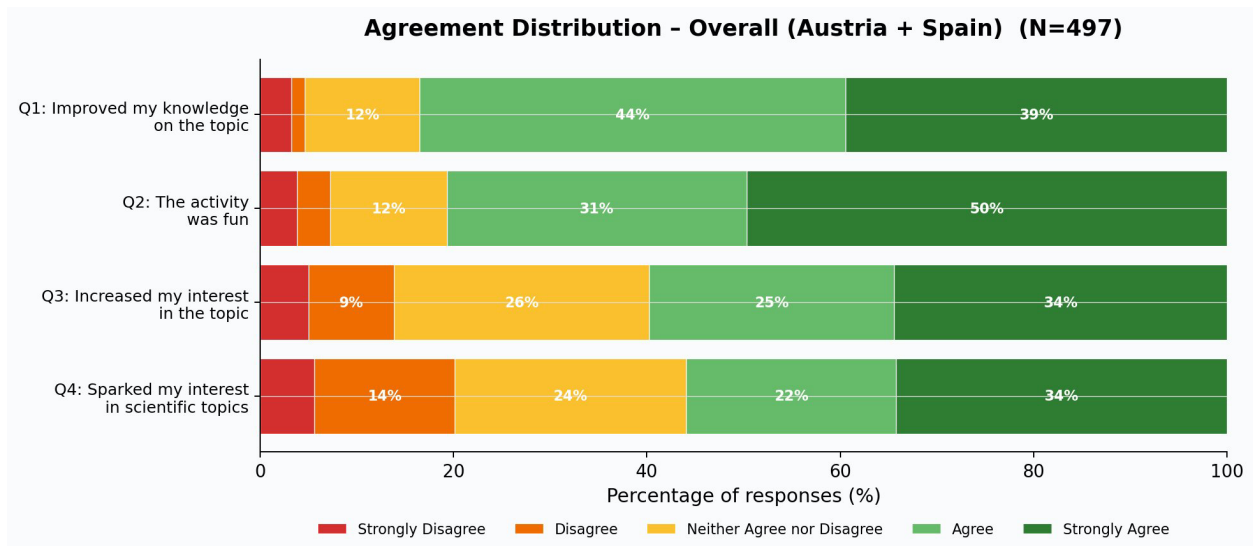


Figure 1: Distribution of agreement across the four questionnaire items (N = 497).

Key observations: Q1 (knowledge) and Q2 (enjoyment) achieved roughly **81–83% positive** responses. Q3 (interest in the specific topic) and Q4 (interest in science more broadly) were lower, at **59% and 56% positive**, respectively, with a larger share of neutral and negative answers. This pattern, i.e. strong gains in knowledge and enjoyment, but a weaker spark of lasting scientific interest, is consistent across the questionnaire dataset.

3. Results by Activity

Fifteen distinct activities (Lesson Plans) were analysed. Inquiry- and experiment-led activities scored highest, while activities involving extensive calculation or measurement showed a drop in Q3 and Q4.

A further important differentiation emerges between primary and secondary school students. The top-ranked activities were mainly implemented in primary schools, where students' natural enthusiasm and curiosity can be a significant factor in grading activities more positively. This developmental difference should be kept in mind when comparing scores across activities, as part of the variation likely reflects the age and school level of the respondents rather than the activities themselves (see also Figure 4).

The highest-rated activities scored close to 5.0 across all items. 'Where Does Water Go?', 'Can Plants Survive Without Light?' and 'How Makes a Community Work?', all achieved near-perfect scores, while 'Maths – Units of Measurement' and 'Air' rated consistently between 4.8 and 5.0. At the other end, the lower-rated activities were weaker specifically on the interest items (Q3 and Q4): 'Importance of Macronutrients' fell to 2.9 on Q3 and 2.7 on Q4, the 'Mealworm Project' dropped to 2.8 on Q4, and 'Geometric Costume (Carnival)', though enjoyable (Q2 = 4.1), also ranked in Q4 a score

of 2.8. The recurring signal is that calculation-heavy or worksheet-heavy activities still taught content effectively but were less successful at sustaining scientific curiosity.

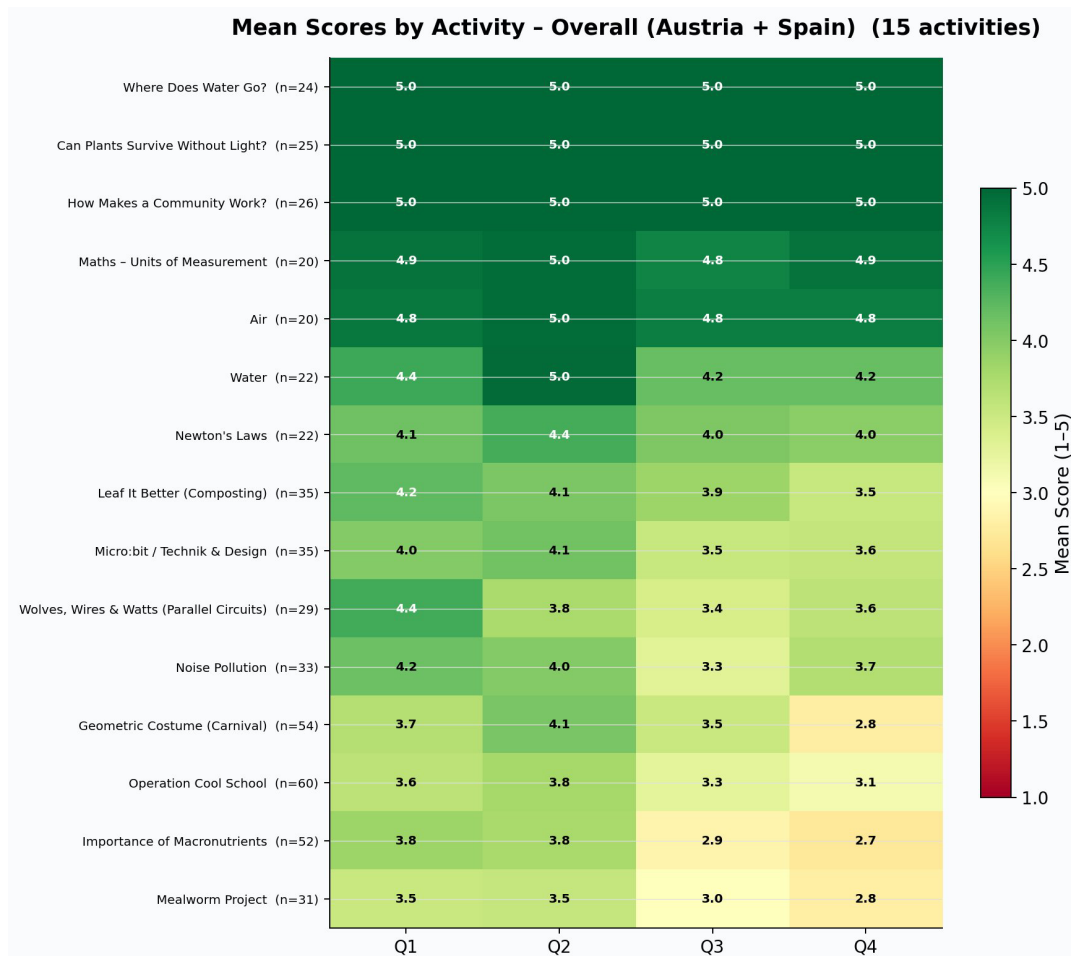


Figure 2: Mean agreement score (1–5) per activity (15 activities in total), sorted by overall rating.

4. Participation and Results by School

Responses were split between **Austria (268, 53.9%)** and **Spain (229, 46.1%)**. Five organisations contributed the bulk of the data: Institut de Sales (152), BG/BRG Gmünd (115), Escola Sant Josep (76), BG/BRG Schwechat (69) and GTVS Dr Bruno Kreisky (62). Several Austrian centres contributed single-pilot responses.

Escola Sant Josep recorded the highest and most uniform scores (≈ 4.9 on every item), followed closely by **GTVS Dr. Bruno Kreisky** and **PH NÖ. BG/BRG Gmünd**, **Institut de Sales** and **BG/BRG Schwechat** showed the familiar drop on Q3 and Q4 (interest items falling toward 3.1–3.3), mirroring the activity-level pattern above.

Response Distribution - Overall (Austria + Spain) (N=497)

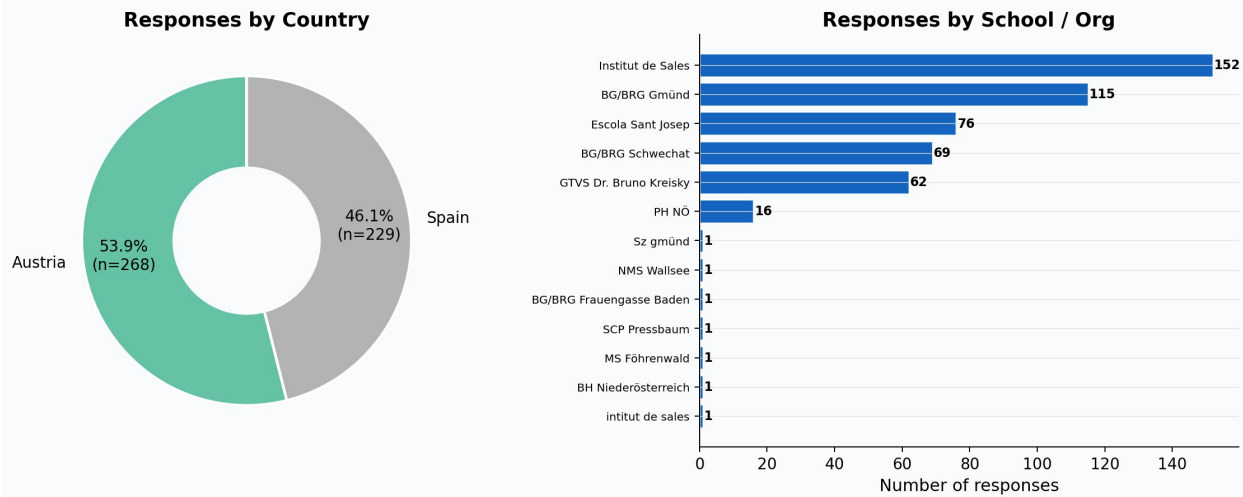


Figure 3: Response counts by country (left) and by school/organisation (right).

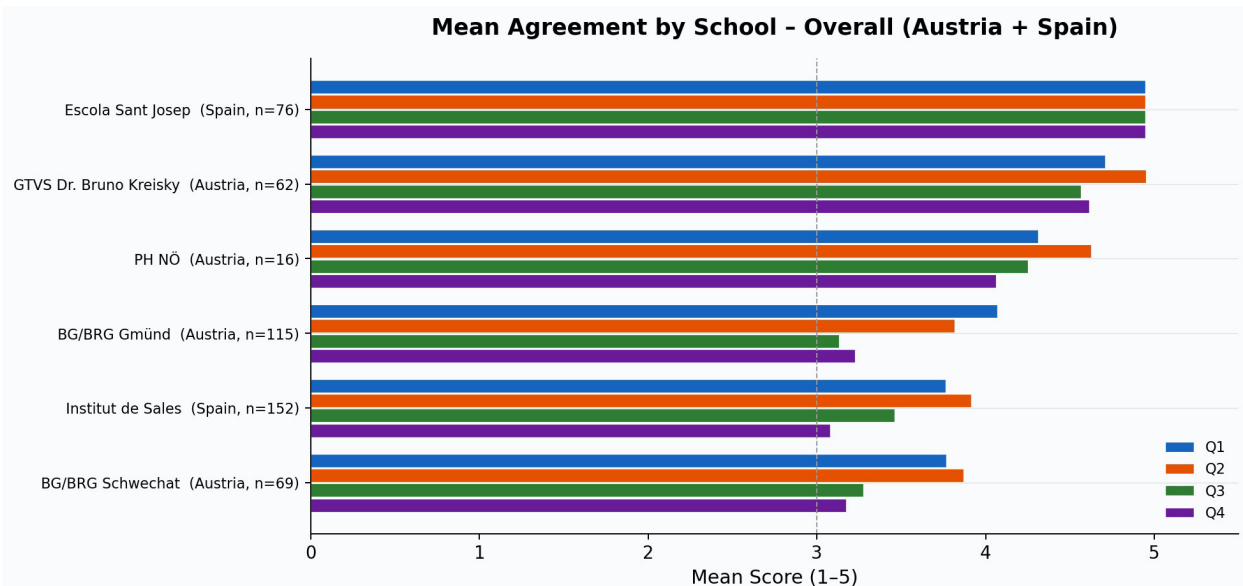


Figure 4: Mean agreement by school across all four questions.

5. Open-Ended Feedback

In addition to the rating scales, the questionnaire included three open-ended questions inviting students to comment freely on the activities. Because responses were submitted in German, Catalan and English, all free-text answers were first translated into English to allow them to be analysed together as a single dataset. The combined comments were then examined for recurring keywords and common themes, with word clouds and frequency counts used to shape the ideas that students raised most often. This qualitative feedback complements the numerical scores of sections 2-4, offering insight into why students rated the activities as they did and what they would change.

5.1 Most interesting aspects (437 comments)

[illegible]

Students most often said they simply **“liked it”** (56 mentions). The strongest positive drivers were **hands-on work**, building **models**, running **experiments**, and **making** things, together with the freedom of being **“allowed to”** try things themselves and working in **groups**. Practical, autonomous, collaborative tasks were also mentioned several times.

5.2 Most challenging aspects (418 comments)

Word Cloud

Top Keywords

Keyword	Frequency
difficult	39
hard	23
calculate	19
model	16
presentation	14
everything	14
easy	13
challenging	12
part	11
making	11
sometimes	10
map	10
measurements	10
drawing	9
mealworms	9

The dominant words were “**difficult**” (39) and “**hard**” (23). The most-cited specific challenges were calculations and measurements, building the scale model, and giving presentations (often noted as difficult because of speaking in English). Notably, “**easy**”

also appeared frequently (13), indicating a split between students who found the tasks demanding and those who found them straightforward.

5.3 Suggestions for improvement (335 comments)

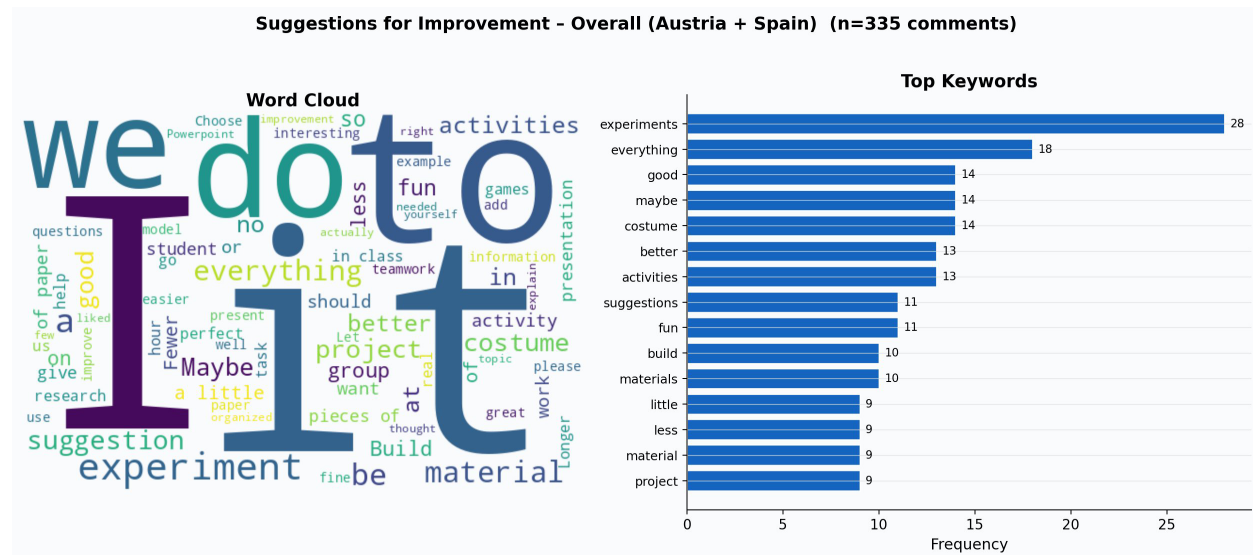


Figure 7: Word cloud and top keywords related to students' suggestions for improvement.

The clearest request was for **more experiments** and hands-on **activities** (28 mentions). Many students also asked for more **time**, **materials**, and slightly **less** theory/worksheets. A large share of students answered “**everything was good**” or “nothing to improve,” consistent with the high enjoyment scores.

6. Conclusions

Overall, the InTruST activities were very well received. They clearly improved students' knowledge of the topics taught (Q1, 83% positive) and were widely seen as enjoyable (Q2, 81% positive), confirming that the implementation succeeded in its core aims of delivering content effectively while keeping students engaged. The strongest outcome consistently centred on hands-on learning, including experiments, model-building and the freedom for students to investigate and make things themselves, drew the most positive open-ended feedback, while calculation- and worksheet-heavy tasks scored lowest on the interest items. This points to a clear and reassuring pattern: students respond best when they are active participants rather than passive recipients, and the activities that embraced this were rated highest across the board.

The main opportunity for improvement lies in translating that enjoyment into lasting scientific curiosity, since agreement was lower on the items measuring deeper and broader interest in science (Q3/Q4). As noted earlier, this is partly an expected outcome: durable interest in science develops gradually through repeated exposure rather than from any single lesson or one-off activities, and it is also shaped by the age profile of respondents, with the top-rated activities concentrated in primary schools.

Encouragingly, the students themselves pointed to practical, low-cost adjustments: their most frequent suggestions for improvements were focused on more experiments, more time, and more materials. Acting on these suggestions and extending the more hands-on, guided and open inquiry-led formats into the calculation-heavy activities is the most promising route to lifting the weaker interest scores in future implementation rounds (year 3 of the project) based on the NGSS standards.