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## Hard to Learn for the Future? Field Evidence from a Digital– Green Classroom Pilot Shows No Gains and Lower Enjoyment

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# ABSTRACT

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Keywords: vocational education and training; digital skills; green skills; projectbased learning; dropout prevention; gender differences; field experiment

JEL classification: I21; J24; Q59

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# 1 Introduction

Early school leaving remains a major obstacle to inclusive growth and social cohesion (Oreopoulos, 2007; Hanushek and Woessmann, 2015; Deming, 2022; Bonnet and Murtin, 2024). It refers to young people aged 18 to 24 who have completed at most lower secondary education and are no longer enrolled in education or training. This outcome carries lasting costs, both private and social, by limiting individual opportunities and weakening human capital formation (Brunello and de Paola, 2014; Bonnet and Murtin, 2024). Although early school leaving has declined in many advanced economies, rates remain above policy targets in several countries (Eurostat, 2024; Vegliante et al., 2024). The challenge is to identify interventions that are not only effective but also scalable.

This paper evaluates Raise-Up, a pilot program designed to improve vocational maturity and reduce dropout risk in Vocational Education and Training (VET). We partnered with two VET schools in the Turin area of Northern Italy. Within each school, principals assigned two classes to treatment and two to control, aiming to ensure comparability in student characteristics and dropout risk across groups. The relatively light-touch program embedded project-based instruction on digital and green themes into the regular timetable for students aged 14–16. For approximately four hours per week from February to May 2025, teachers and professional educators - specialists from accredited training centers - co-taught modules designed to make the curriculum more engaging and relevant to future labor markets. The intervention was also supported by capacity-building for instructors and optional coaching.

Despite its ambition, the program produced *no quantitatively measurable gains*. The evaluation draws on three survey waves - two administered before the classroom intervention and one immediately after - analyzed using a difference-in-differences framework. Across all pre-registered outcomes - educational aspirations, completion motivation, sectoral preferences, and socio-emotional indices - estimated effects are small and statistically indistinguishable from zero. The only significant finding was negative: Treated students report a decline in school enjoyment ($-0.39\sigma$), alongside a marginally significant drop in self-reported use of computer skills. All other estimates center around zero, and treatment heterogeneity was limited. However, the decline in overall satisfaction was concentrated in one school, and gender differences in program impact were stark. The intervention significantly reduced female students' perceived knowledge of green and digital jobs, self-confidence, and overall satisfaction. By contrast, no significant effects emerged for male students, indicating that the program's negative consequences were driven entirely by its impact on females.

These null results are sobering because the policy stakes are high. Early school leaving imposes large and lasting costs on both individuals and society. Across OECD countries, 25–34-year-olds without upper secondary education face an average unemployment rate

of 13.4%, nearly double the 7% observed among peers with at least upper secondary qualifications (OECD, 2024). Even when employed, early leavers earn substantially less. Microeconomic evidence shows that completing secondary school yields wage premiums of 30–50%, even after accounting for employment probabilities (Campolieti et al., 2010; Brunello and de Paola, 2014); similar earnings penalties are documented in developing countries (Mussida et al., 2019). Early leavers are also more likely to rely on public assistance, increasing lifetime spending on welfare and other transfers (Brunello and de Paola, 2014), and face a higher risk of poverty and social exclusion (Koc et al., 2020). Broader spillovers include worse health outcomes (Cutler and Lleras-Muney, 2012; Vaughn et al., 2014; Hjorth et al., 2016; Davies et al., 2018) and higher crime rates (Machin et al., 2011; Anderson, 2014; Cook and Kang, 2016; Na, 2017; Gerlinger and Hipp, 2023). These private and social costs establish early school leaving not just as an educational failure, but as a first-order economic and social problem.

Europe has made progress. Helped by the Europe 2020 target of reducing early leaving below 10%, the EU average fell from 13.8% in 2010 to 9.5% in 2023 (European Commission, 2017; Eurostat, 2024; OECD, 2024). Yet large disparities remain. While countries like Croatia, Greece, Poland, and Ireland are now below 5%, rates remain elevated in Romania (16.6%), Spain (13.7%), and Germany (12.8%). Italy is no longer among the worst performers, but its 2023 rate of 10.5% exceeds both the EU benchmark and the 2030 target of 9% (Eurostat, 2024). Within Italy, the problem is concentrated in the South and in vocational tracks. Where VET systems feature strong school-to-work linkages—as in dual models that blend workplace training with classroom instruction—student transitions are smoother and dropout rates are lower (Adda et al., 2013; Hanushek et al., 2017). In contrast, the school-based VET systems common in Southern Europe, including Italy, have historically suffered from weak employer engagement, limited practical experience, and higher dropout risk (Pastore, 2019). In this context, the policy imperative remains clear: to make VET more attractive, more connected to labor markets, and more effective at keeping students on track.

Our results fit a broad evidence base. School-based prevention and mentoring often yield modest average effects with substantial variation driven by implementation and context according to meta-analyses (Wilson et al., 2011; Tanner-Smith and Wilson, 2013; Freeman and Simonsen, 2015; Raposa et al., 2019). Classic models like *Check & Connect* reduced dropout in early studies (Sinclair et al., 1998, 2005) but did not replicate at scale in the U.S. (Heppen et al., 2018). Other intensive supports - coaching in the Netherlands (van der Steeg et al., 2015), *Becoming a Man* (Heller et al., 2017), *Communities in Schools* (Porowski and Passa, 2011; Parise et al., 2017), and *Pathways to Education* (Oreopoulos et al., 2017) - show that persistence improves when services are sustained and targeted. Recent European evidence from Germany similarly reports sizeable short-run gains for low-SES youth from mentoring, with some persistence into early transitions (Resnjanskij

et al., 2024), and suggestive benefits from personalized coaching for apprentices (Hofer, 2025).[1]

These patterns match meta-analyses showing that tutoring and mentoring can be effective when dosage and duration are high (Dietrichson et al., 2017; Nickow et al., 2020). Comprehensive models such as the Quantum Opportunity Program (Schirm et al., 2006; Rodríguez-Planas, 2012) produced mixed results. Unlike such programs, Raise-Up is a short, relatively light-touch, project-based module embedded in existing VET classes, with no reorganization of governance, staffing, or facilities. Whole-school reforms - Career Academies (Kemple and Snipes, 2000; Kemple and Scott-Clayton, 2004), Talent Development High Schools (Kemple et al., 2005), Early College High Schools (Berger et al., 2010; Edmunds et al., 2013; Song et al., 2021), Linked Learning (Warner et al., 2018), and New York City's Small Schools of Choice (Schwartz, 2013; Bloom and Unterman, 2014) - require structural change and multi-year exposure; they rarely raise graduation uniformly but can deliver durable earnings or postsecondary gains. The contrast underscores that institutional redesign and sustained engagement, not content alone, often drive impacts.

These patterns match meta-analyses showing that tutoring and mentoring are effective when dosage and duration are high (Dietrichson et al., 2017; Nickow et al., 2020). Comprehensive bundles such as the Quantum Opportunity Program (Schirm et al., 2006; Rodríguez-Planas, 2012) produced mixed results. Unlike such programs, Raise-Up is a short, project-based module embedded in existing VET classes, with no reorganization of governance, staffing, or facilities. Whole-school reforms - Career Academies (Kemple and Snipes, 2000; Kemple and Scott-Clayton, 2004), Talent Development High Schools (Kemple et al., 2005), Early College High Schools (Berger et al., 2010; Edmunds et al., 2013; Song et al., 2021), Linked Learning (Warner et al., 2018), and New York City's Small Schools of Choice (Schwartz, 2013; Bloom and Unterman, 2014) - require structural change and multi-year exposure; they rarely raise graduation uniformly but can deliver durable earnings or postsecondary gains. The contrast underscores that institutional redesign and sustained engagement, not content alone, often drive impacts.

Other levers have mixed records. Family engagement - workshops and timely, low-cost communications - reduces absenteeism and improves behavior, consistent with behavioral evidence on targeted parent nudges (Avvisati et al., 2014; Kraft and Rogers, 2015; Bergman, 2021; List et al., 2018). Financial incentives increase participation in low-income settings yet seldom learning (Baird et al., 2013). In high-income contexts,

[1] Resnjanskij et al. (2024) find that a mentoring program ("Rock Your Life!") in Germany generated large short-run gains for low-SES adolescents, with effects on academic outcomes and labor market orientation persisting three years later. The intervention also improved early school-to-work transitions, though impacts on non-cognitive skills faded over time. Hofer (2025) evaluates JOBLINGE's "basecamp", a German program for apprentices that combines drop-in study centers with personalized coaching and skills workshops. While largely descriptive, survey and qualitative data suggest meaningful benefits: female apprentices reported lower dropout intentions and reduced stress, and targeted sessions raised digital and financial literacy.

the UK's Education Maintenance Allowance raised participation for low-income students (Dearden et al., 2009), but the newest IFS follow-up finds no additional qualifications and a roughly 1% wage dip in adulthood (Britton et al., 2025). Student incentives often fail unless precisely targeted or loss-framed (Leuven et al., 2010; Fryer, 2011; Levitt et al., 2016). For teachers, performance pay improves outcomes in some low-oversight environments - e.g., rural India (Muralidharan and Sundararaman, 2011) - while U.S. trials in systems with formal evaluation show inconsistent or null effects (Glazerman and Seifullah, 2012; Springer et al., 2010; Fryer et al., 2015). Loss-framed teacher bonuses yield modest gains in some settings but vary across time and context (Fryer et al., 2022). More reliably, teacher quality matters, and instructional coaching improves practice and student achievement, though scaling is costly (Rockoff, 2004; Chetty et al., 2014; Garet et al., 2001; Kraft et al., 2018). Raise-Up incorporates lighter capacity building and optional coaching rather than full coaching models.

Evidence on digital- and green-focused curricula affecting completion, aspirations, or persistence is limited. In the digital domain, randomized and quasi-experimental studies report learning gains when software is tightly integrated into instruction and supported by teachers - typically 0.1 - 0.3 standard deviations in mathematics - whereas technology in isolation rarely moves outcomes (Pane et al., 2015; Muralidharan et al., 2019; Bulman and Fairlie, 2016; Escueta et al., 2020). These studies usually target achievement over short horizons; effects on dropout-related margins are seldom measured. Moreover, shallow or unguided adoption can be counterproductive, as in Romania's home-computer experiment, which lowered grades and homework time (Malamud and Pop-Eleches, 2011). The lesson is that pedagogy and dosage, not hardware, drive impact. For green content, European initiatives remain mostly pilots with quasi-experimental evidence showing gains in environmental literacy and perceived school connectedness rather than completion or postsecondary intentions (Olsson et al., 2016; Pauw and van Petegem, 2013). Exposure is often brief, outcomes are proximal, and implementation is heterogeneous, leaving external validity and persistence uncertain.

Raise-Up lies squarely in this landscape: a short, curriculum-embedded, project-based module on digital and green themes, delivered by teachers and professional educators during regular hours. The literature counsels caution: durable shifts in persistence or aspirations typically require changes in daily instruction and sustained, high-dosage support - not content updates alone (Durlak et al., 2011; Kraft et al., 2018; Nickow et al., 2020). Similarly, technology-focused efforts yield results mainly when tightly coupled with pedagogy; light-touch exposure rarely shifts distal outcomes (Bulman and Fairlie, 2016; Escueta et al., 2020). In this light, our null average effects and the small decline in reported enjoyment appear consistent with that relevance added without sufficient intensity or support can heighten perceived workload and fatigue without altering dropout-related margins.

The paper is structured as follows. Section 2 describes the RAISE-UP program, surveys, and hypotheses. Section 3 presents the empirical findings. Finally, Section 4 discusses the results and concludes.

# 2 Methods and hypotheses

## 2.1 The Raise-Up program

The RAISE-UP program is a novel school-based intervention designed to prevent early school leaving (ESL) among students in vocational education and training (VET) pathways. It addresses two key dropout risk factors - low vocational maturity and weak student motivation - by combining capacity-building for teachers and professional educators with classroom-level activities for students. The intervention is rooted in the belief that aligning education with digital and green transition skills can make learning more relevant, engaging, and socially meaningful.

The program was piloted in two VET schools in the Turin area. In each school, principals selected two treatment and two control classes. Although random assignment was not feasible due to organizational constraints, the school principals were instructed to select control classes that closely matched the treatment classes in terms of observable characteristics and baseline dropout risk. To address potential selection bias, we rely on a difference-in-differences (DiD) design.[2]

To ensure the training modules respond to actual classroom needs and staff preparedness, two structured co-design workshops were conducted in June 2024 (on June 18th and 28th), one at each participating school. Using the European Commission's validated DigCompEdu and GreenComp frameworks, the workshops assessed teachers' digital and green competencies and needs, then tailored activities to each school's curriculum and institutional context.[3]

The program was structured around a dual intervention model, addressing both instructors and students. The first pillar focused on capacity building for schoolteachers and professional educators. Participants attended six four-hour sessions between December 4th and February 26th: the first three sessions took place in December at IIS Settimo

[2]This approach, allowing for causal inference under the assumption of parallel trends in the absence of treatment, mitigates endogeneity concerns by comparing changes over time between comparable groups (Wooldridge, 2020).

[3]On 18 June, the first workshop was held at the Giovanni Giolitti Institute with eight teachers and four educators from the Piazza dei Mestieri Foundation. On 28 June, a second workshop took place at the Fondazione per la Scuola with nine teachers from the Galileo Ferraris school and three educators. Each session lasted four hours and was jointly facilitated by experts from the LINKS Foundation. Representatives from Fondazione per la Scuola, LINKS Foundation, and Piazza dei Mestieri attended both meetings. Feedback from participants was consistently positive and confirmed the relevance of the needs-assessment approach. The separate scheduling was necessary due to final exam obligations at the respective institutions.

Torinese, and the final three in January and February at IIS Giolitti. Training covered green and digital skills, project-based learning and student engagement strategies. These sessions included collaborative project work tailored to each school's educational context. .[4] From the onset of the 2024/2025 semester, teachers and professional educators were also offered optional coaching to support their work with difficult students and classroom-related challenged in general.

The second pillar targeted students. It was implemented at the classroom level, where teachers and professional educators delivered the developed project work in weekly sessions using a co-teaching approach. These activities aimed to build vocational maturity by increasing students' awareness of career pathways and strengthening motivation through hands-on, future-oriented learning and, developing digital and green skills.

The Raise-Up activities were tailored to the specific needs, interests, and learning profiles of each class, taking into account their vocational orientation, digital readiness, and levels of engagement. Between December and mid-February, the following projects were implemented in the treated classes:

- Treatment Class 1 – IIS Settimo Torinese: The focus was on green themes, which drew stronger interest than digital ones. Students designed an ecological city, supported by a website and video, using tools like Canva, Kahoot, Mentimeter, and Google Sites. The project will culminate in a field trip to a primary school for peer teaching on sustainability.

- Treatment Class 2 – IIS Settimo Torinese: Faced with engagement and scheduling challenges, this class adopted a flexible integration of activities into regular subjects. The project emphasized digital enrichment, including using Micro:bit in IT classes and creative digital tools in English lessons. Participation varied due to class dynamics and inconsistent teacher involvement.

- Treatment Class 1 – IIS Giolitti: Activities linked green topics to food-sector vocational practice. Students created a digital interactive pyramid on the Mediterranean diet and developed a sustainable menu, recipe book and videos with Canva and Micro:bit. Future tasks include digitizing menus with QR codes and reducing water waste.

- Treatment Class 2 – IIS Giolitti: This class combined environmental education with digital storytelling. Using Scratch and Micro:bit to narrate recipes and symbolic stories, encouraging creativity and synthesis. Additional projects included a green restaurant design, Canva presentations, cooking videos, Kahoot quizzes on

[4] Fifteen of the 130 individual observations in the second survey wave fall within a time window when teachers might - contrary to instructions - have begun incorporating input from their capacity-building sessions before the official start of the project work. While we cannot verify whether this occurred, excluding these cases does not affect the results.

the concept of the ecological footprint, and a brochure on risks related to alcohol consumption.

The research received ethical approval from the Zentrum für Soziale Innovation in Vienna, Austria, in June 2024 (Ref. no.: 2024-06-RAISE-UP).

## 2.2 The survey

The student survey was administered in three waves: two before the intervention (October and December 2024, with a few late responses in January 2025) and one after (May–June 2025). Questionnaires were completed during school hours via LimeSurvey, primarily on tablets or smartphones.

Before data collection, the LINKS Foundation distributed informed-consent sheets to students and their parents/guardians for the student survey. Students provided online consent; written parental/guardian consent was obtained in advance. To avoid biasing responses, the material did not disclose the specific research objectives. Participants were informed of their rights (access, rectification, deletion, withdrawal without penalty) and were referred to the ZSI Data Protection Officer for queries.

To match responses across waves while preserving anonymity, students entered a personal code derived from their own initials, their mother's initials and their birthdate. They also selected their school and class, enabling classification by treatment status.[5]

The survey captured a broad range of educational, behavioral, and attitudinal dimensions relevant to dropout risk and responsiveness to the Raise-Up intervention. It started with questions about student satisfaction, including relationships with peers and teachers and confidence in achieving academic goals. Students also reported on a 1-7 Likert scale whether they believed their studies would benefit their future education and career on a 1–7 Likert scale.

The survey then assessed academic motivation and self-regulation using a similar scale. Students rated their self-confidence, concentration, time management, and planning abilities. Additional questions gauged their perceived effort, perceived ability to meet their teachers' expectations, and after-school study habits, providing insight into overall school engagement. A brief section followed, capturing individual traits such as patience and willingness to take risks, measured on a 0–10 scale.

[5]Some students entered inconsistent personal codes across survey waves - using different identifiers likely referring to the same individual - while others shared identical codes within a single wave, typically due to overlapping initials and birthdates. A common mistake involved mixing components of the code: for example, entering the same initials but sometimes using the birth year (e.g., "09" for "2009") instead of the intended day of birth (e.g., "25"). To recover valid panel matches, we manually reviewed entries using code similarity, school-class affiliation, and stable demographic characteristics such as gender, age, and country of birth (of both the student and their parents). We also considered device metadata, including operating system and screen resolution. Matches were retained only when there was a high likelihood that records referred to the same individual, ensuring consistency while minimizing the risk of erroneous linkage.

The next section gauged students' certainty about their future career choice. It then included two key items measuring perceived dropout risk. Using a 0–100 slider scale, students estimated (a) the probability of completing their current educational track and (b) the likelihood of pursuing further education after graduation. These self-assessed probabilities serve as proxies for educational persistence and are central to the program's impact evaluation.

To measure sector-specific career aspirations, students allocated 100 points across five sectors: green economy, digital/technology, tourism and hospitality, industry and construction, and a residual "other sectors" category. This task revealed how strongly they preferred each sector relative to other sectors. Students also indicated which job characteristics they prioritize - such as salary, job security, environmental impact, and personal fulfillment - and who influences their choices (e.g., family, teachers, peers, or media).

The survey further assessed students' exposure to digital and green topics. It captured three key dimensions: (i) self-rated skills, (ii) awareness of related occupations, and (iii) frequency of engagement with digital and green activities both in and out of school (e.g., coding, recycling, or environmental volunteering). These variables, all measured on a 1-7 Likert scale, provide a rich of baseline students' knowledge and engagement with the themes central to the Raise-Up program.

The questionnaire concluded with demographic and socioeconomic background items, including parental education and employment, household size, indicators of material deprivation, and access to a quiet place to study. These questions were placed at the end of the survey to minimize priming effects and because they are less cognitively demanding, making them suitable even when the respondents were fatigued (Stantcheva, 2022).

The full questionnaire is available in the supplementary materials (Section A1.3).

## 2.3 Sample characteristics

Table 1 reports baseline demographic characteristics by treatment condition and for the overall sample. The two groups are broadly comparable with respect to gender, age, parental education, and employment. The mean age is 15 years, with roughly 46% female students. Most participants and their parents were born in Italy, and about 10–13% of parents have a university degree. While there are minor imbalances in a few indicators (e.g., birthplace in Piedmont or whether the mother was born in Italy), the overall balance across observed characteristics is strong, as confirmed by t-tests.

## 2.4 Hypotheses

The main hypotheses were pre-registered on the Open Science Framework (osf.io/x4e2h) and are outlined as follows:

**Table 1:** Baseline Balance of Covariates by Treatment Status

| **Variable** | **Control** | **Treated** | **Overall** | **p-value** |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Female | 0.432 | 0.487 | 0.460 | 0.484 |
| | (0.498) | (0.503) | (0.500) | |
| Birth Year[a] | 2008.48 | 2008.44 | 2008.46 | 0.793 |
| | (0.84) | (1.13) | (1.00) | |
| Born in Italy[a] | 0.800 | 0.912 | 0.858 | 0.045 |
| | (0.403) | (0.284) | (0.350) | |
| Born in Piedmont | 0.617 | 0.825 | 0.720 | 0.003 |
| | (0.489) | (0.382) | (0.450) | |
| *Parental Background* | | | | |
| Father born in Italy | 0.630 | 0.675 | 0.652 | 0.549 |
| | (0.486) | (0.471) | (0.478) | |
| Mother born in Italy | 0.593 | 0.750 | 0.671 | 0.034 |
| | (0.494) | (0.436) | (0.471) | |
| Father has university degree | 0.086 | 0.113 | 0.099 | 0.583 |
| | (0.283) | (0.318) | (0.300) | |
| Mother has university degree | 0.123 | 0.138 | 0.130 | 0.793 |
| | (0.331) | (0.347) | (0.338) | |
| *Parental Employment* | | | | |
| Father employed | 0.543 | 0.512 | 0.528 | 0.699 |
| | (0.501) | (0.503) | (0.501) | |
| Father self-employed | 0.123 | 0.250 | 0.186 | 0.039 |
| | (0.331) | (0.436) | (0.391) | |
| Father not working | 0.049 | 0.050 | 0.050 | 0.986 |
| | (0.218) | (0.219) | (0.218) | |
| Father retired | 0.049 | 0.037 | 0.043 | 0.714 |
| | (0.218) | (0.191) | (0.205) | |
| Mother employed | 0.568 | 0.650 | 0.609 | 0.289 |
| | (0.498) | (0.480) | (0.490) | |
| Mother self-employed | 0.123 | 0.100 | 0.112 | 0.639 |
| | (0.331) | (0.302) | (0.316) | |
| Mother not working | 0.099 | 0.113 | 0.106 | 0.778 |
| | (0.300) | (0.318) | (0.308) | |
| Mother retired | 0.025 | 0.025 | 0.025 | 0.990 |
| | (0.156) | (0.157) | (0.156) | |

*Notes*: The table displays means with standard deviations in parentheses on the subsequent line. Column (4) reports p-values from a t-test for equality of means between the treatment and control groups. The total sample size is $N = 161$ ($N_{Control} = 81$, $N_{Treated} = 80$). [a] For these variables, the sample size is $N = 155$ ($N_{Control} = 75$, $N_{Treated} = 80$).

**H1 Educational Aspirations**: Students exposed to the RAISE-UP intervention are expected to report a higher likelihood of planning to pursue further education compared to those in the control group.

**H2 Completion Motivation**: Treated students are expected to report greater motivation to complete their current educational track, reflected in a higher self-assessed probability of finishing school.

**H3 Green and Digital Skills**: The intervention is expected to improve students' attitudes toward and engagement with green and digital topics in three ways:

- **H3a** Treated students will report higher self-perceived knowledge and competence in digital and green domains.
- **H3b** They will assign greater perceived labor market relevance to these skills.
- **H3c** They will report more frequent engagement with related activities, such as using digital tools or participating in environmental initiatives.

**H4 Sectoral Preferences**: Exposure to the intervention will shift students' career interests toward green and digital sectors, as measured by changes in the point allocation task relative to other industries.

**H5 School Engagement and Self-Confidence**: Treated students will report higher satisfaction with their schooling experience and increased self-confidence compared to the control group.

Data and code to replicate our findings are available on the Open Science Framework: https://osf.io/ecfj9/.

# 3 Results

## 3.1 Descriptive overview

Table 2 summarizes the main outcome variables specified in the pre-registration. To assess educational ambition and perseverance (H1–H2), we use two subjective probability measures: the perceived likelihood of completing the current school track and enrolling in university or an equivalent program. These variables capture students' forward-looking expectations at two pivotal transitions - completing secondary education and continuing into post-secondary studies.

The core mechanism targeted by RAISE-UP - exposure to digital and environmental topics and skills - is measured through a battery of self-assessed items. These include perceived knowledge of green and digital careers, confidence in sustainability content, and

ease with technology. We also capture self-reported frequency of digital skill use and pro-environmental behavior. To operationalize career orientation (H4), we construct a relative index comparing interest in green and digital sectors with tourism, manufacturing, and other sectors.

School engagement and socio-emotional development (H5) are measured using a direct item - *"I like going to school"* - and two indices based on principal component analysis. The first index aggregates ten Likert items related to school satisfaction, covering curriculum relevance, peer relations, and overall school enjoyment. The first principal component explains roughly one third of total variance and loads positively on all items, indicating that higher scores reflect a more favorable assessment of the school environment. Internal consistency is acceptable (Cronbach's $\alpha = 0.58$, with an average inter-item covariance of 0.36). The second index condenses eight items on self-confidence, concentration, and planning. Here too, the first component loads positively throughout and serves as the self-confidence score. Reliability is comparable ($\alpha = 0.50$; average inter-item covariance 0.35).

Table 2 shows that the treatment and control groups were broadly similar at baseline, though with some notable exceptions. In the first wave (N = 130), students in the treatment group reported greater optimism about finishing school (R1: p = 0.025, t-test), a higher relative interest in green and digital careers (R1: p = 0.043, t-test), and a significantly stronger sense of self-confidence (R1: p = 0.002, t-test). The most pronounced difference was in school enjoyment: treated students were substantially more likely to state they "Liked going to school" (R1: p = 0.006, t-test).

Over time, the initial treatment–control gaps in school-completion optimism and in relative interest in green versus digital careers narrowed and were no longer detectable by Round 3 (R3: $p = 0.592$ and $p = 0.645$, respectively). Likewise, the highly significant baseline difference in "liking going to school" (R1: $p = 0.006$; R2: $p = 0.002$), as well as early differences in satisfaction (R2: $p = 0.004$) and self-confidence (R2: $p = 0.093$), disappeared by Round 3 (liking school: $p = 0.517$; satisfaction: $p = 0.859$; self-confidence: $p = 0.718$). By contrast, new disparities emerged in the final wave (N = 116): treated students reported significantly greater knowledge of sustainability ($\text{mean}_T = 4.182$ vs. $\text{mean}_C = 3.422$; $p = 0.014$), whereas control students reported more frequent use of computer skills ($\text{mean}_C = 4.911$ vs. $\text{mean}_T = 4.121$; $p = 0.027$).

This complex pattern of diverging and converging outcomes, where some baseline differences disappear while new ones emerge, underscores the importance of using a differences-in-differences strategy for distinguishing the intervention's effects from pre-existing group differences and shifts over time.

**Table 2:** Main Outcome Variables by Group and Round

| Variable | Control Group | | | Treatment Group | | | p-value of Difference | | |
|---|---|---|---|---|---|---|---|---|---|
| | R1 | R2 | R3 | R1 | R2 | R3 | R1 | R2 | R3 |
| Finish school | 67.375 | 70.764 | 74.542 | 79.301 | 76.169 | 77.364 | 0.025** | 0.316 | 0.592 |
| | (31.894) | (30.575) | (28.488) | (26.088) | (29.004) | (26.467) | | | |
| Further education | 46.071 | 52.927 | 47.104 | 47.548 | 50.296 | 55.727 | 0.801 | 0.667 | 0.159 |
| | (30.917) | (33.030) | (31.251) | (35.203) | (35.217) | (33.022) | | | |
| Good at tech | 4.436 | 4.093 | 4.533 | 4.699 | 4.710 | 4.318 | 0.361 | 0.055* | 0.479 |
| | (1.512) | (1.896) | (1.517) | (1.713) | (1.554) | (1.638) | | | |
| Knowledge green/sustainability | 3.545 | 3.778 | 3.422 | 3.904 | 3.783 | 4.182 | 0.222 | 0.987 | 0.014** |
| | (1.463) | (1.690) | (1.515) | (1.842) | (1.644) | (1.635) | | | |
| Know digital jobs | 3.709 | 3.574 | 4.156 | 4.301 | 4.043 | 4.045 | 0.055* | 0.130 | 0.731 |
| | (1.707) | (1.689) | (1.551) | (1.713) | (1.702) | (1.793) | | | |
| Know green jobs | 3.182 | 3.204 | 3.178 | 3.452 | 3.565 | 3.773 | 0.329 | 0.251 | 0.076* |
| | (1.389) | (1.774) | (1.655) | (1.732) | (1.658) | (1.804) | | | |
| Use computer skills | 4.109 | 3.944 | 4.911 | 4.178 | 4.275 | 4.121 | 0.841 | 0.317 | 0.027** |
| | (1.931) | (1.878) | (1.794) | (1.895) | (1.723) | (1.852) | | | |
| Reduce environmental impact | 3.800 | 3.815 | 3.644 | 3.973 | 4.217 | 4.121 | 0.563 | 0.163 | 0.113 |
| | (1.671) | (1.591) | (1.510) | (1.658) | (1.561) | (1.584) | | | |
| Relative interest green & digital | 0.208 | 0.237 | 0.250 | 0.284 | 0.255 | 0.236 | 0.043** | 0.595 | 0.645 |
| | (0.200) | (0.199) | (0.154) | (0.224) | (0.191) | (0.180) | | | |
| Like going to school | 3.321 | 3.357 | 3.633 | 4.110 | 4.254 | 3.851 | 0.006*** | 0.002*** | 0.517 |
| | (1.574) | (1.656) | (1.642) | (1.603) | (1.461) | (1.964) | | | |
| Satisfaction (PCA) | −0.066 | −0.485 | −0.276 | 0.437 | 0.384 | −0.221 | 0.069* | 0.004*** | 0.859 |
| | (1.578) | (1.726) | (1.478) | (1.490) | (1.515) | (1.821) | | | |
| Self-confidence (PCA) | −0.330 | −0.229 | −0.174 | 0.410 | 0.203 | −0.074 | 0.002*** | 0.093* | 0.718 |
| | (1.473) | (1.513) | (1.525) | (1.106) | (1.289) | (1.356) | | | |
| N | 57 | 58 | 49 | 73 | 72 | 67 | 130 | 130 | 116 |

*Notes*: This table presents means and standard deviations (in parentheses) for control and treatment groups across three rounds (R1, R2, R3). The last three columns report the p-values from t-tests comparing treatment and control groups for each round. Variable descriptions: **Finish school**: How likely is it that you will finish school successfully? (Slider scale, 0-100). **Further education**: How likely are you to go to university or similar after finishing high school? (Slider scale, 0-100). **Good at tech**: "I'm good at using computers and technology." (Measured on a 7-point Likert scale from "1 Strongly disagree" to "7 Strongly agree"). **Knowledge green/sustainability**: "I know a lot about green topics, sustainability and how to apply them." (Measured on a 7-point Likert scale from "1 Strongly disagree" to "7 Strongly agree"). **Know digital jobs**: "I know about jobs that require digital skills." (Measured on a 7-point Likert scale from "1 Strongly disagree" to "7 Strongly agree"). **Know green jobs**: "I know about jobs that value green skills and focus on green topics and sustainability." (Measured on a 7-point Likert scale from "1 Strongly disagree" to "7 Strongly agree"). **Use computer skills**: "I regularly use my computer skills in my schoolwork or hobbies." (Measured on a 7-point Likert scale from "1 Strongly disagree" to "7 Strongly agree"). **Reduce environmental impact**: "I often take actions to reduce my environmental impact, like recycling or saving." (Measured on a 7-point Likert scale from "1 Strongly disagree" to "7 Strongly agree"). **Relative interest green & digital**: Relative interest in green and digital sectors. **Like going to school**: "I like going to school." (Measured on a 7-point Likert scale from "1 Strongly disagree" to "7 Strongly agree"). **Satisfaction (PCA)**: PCA Index of Satisfaction Variables. **Self-confidence (PCA)**: PCA Index of Self-confidence Variables. Sample sizes (N) for each group and round are provided in the last row. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

## 3.2 (In-)effectiveness of the intervention

Using the three-wave panel data structure, we test each hypothesis from Section 2.4 within a difference-in-differences framework with student fixed effects. The treatment indicator captures assignment to a class exposed to RAISE-UP; the post-intervention dummy equals one in the May–June 2025 survey. All outcome variables are standardized.

Formally, let $Y_{it}$ denote the standardized outcome for student $i$ in wave $t$. We estimate:

$$Y_{it} = \alpha + \beta\Big(\text{POST}_t \times \text{TREATED}_i\Big) + \lambda_i + \tau_t + \varepsilon_{it}, \tag{1}$$

where $\text{TREATED}_i$ equals 1 for students in treated classes and $\text{POST}_t = 1$ only in Wave 3.[6] Student fixed effects $\lambda_i$ control for time-invariant characteristics, and wave dummies $\tau_t$ absorb common shocks. The idiosyncratic error term is denoted $\varepsilon_{it}$.

The coefficient $\beta$ captures the average treatment effect: the differential change in outcomes for treated versus control students after program implementation. Since outcomes are standardized, $\beta$ is interpretable in units of effect size and comparable across domains.

Figure 1 displays the estimated $\hat{\beta}$ coefficients and their 95% confidence intervals for the primary outcomes linked to Hypotheses **H1**–**H5**. For most outcomes, the evidence is surprisingly clear: the program did not achieve its intended effects. Specifically, for educational aspirations (H1), completion motivation (H2), self-perceived technical competence (H3a), engagement with green and digital topics (H3c), and relative interest in green and digital sectors (H4), the point estimates are small and statistically indistinguishable from zero, while confidence intervals comfortably include the null.

There are, however, two notable exceptions. First, the intervention led to a statistically significant decline in students' reported enjoyment of school. Treated students were less likely to agree with the statement *"I like going to school"* ($\hat{\beta} = -0.39$, $p = 0.033$). This is corroborated by a similar, albeit borderline-significant, decline in the overall satisfaction index ($\hat{\beta} = -0.31$, $p = 0.097$). Second, the program appears to have reduced students' reported computer use, an effect that is also marginally significant ($\hat{\beta} = -0.37$, $p = 0.061$).

[6] Wave 1: October 2024; Wave 2: December 2024–January 2025; Wave 3: May–June 2025.

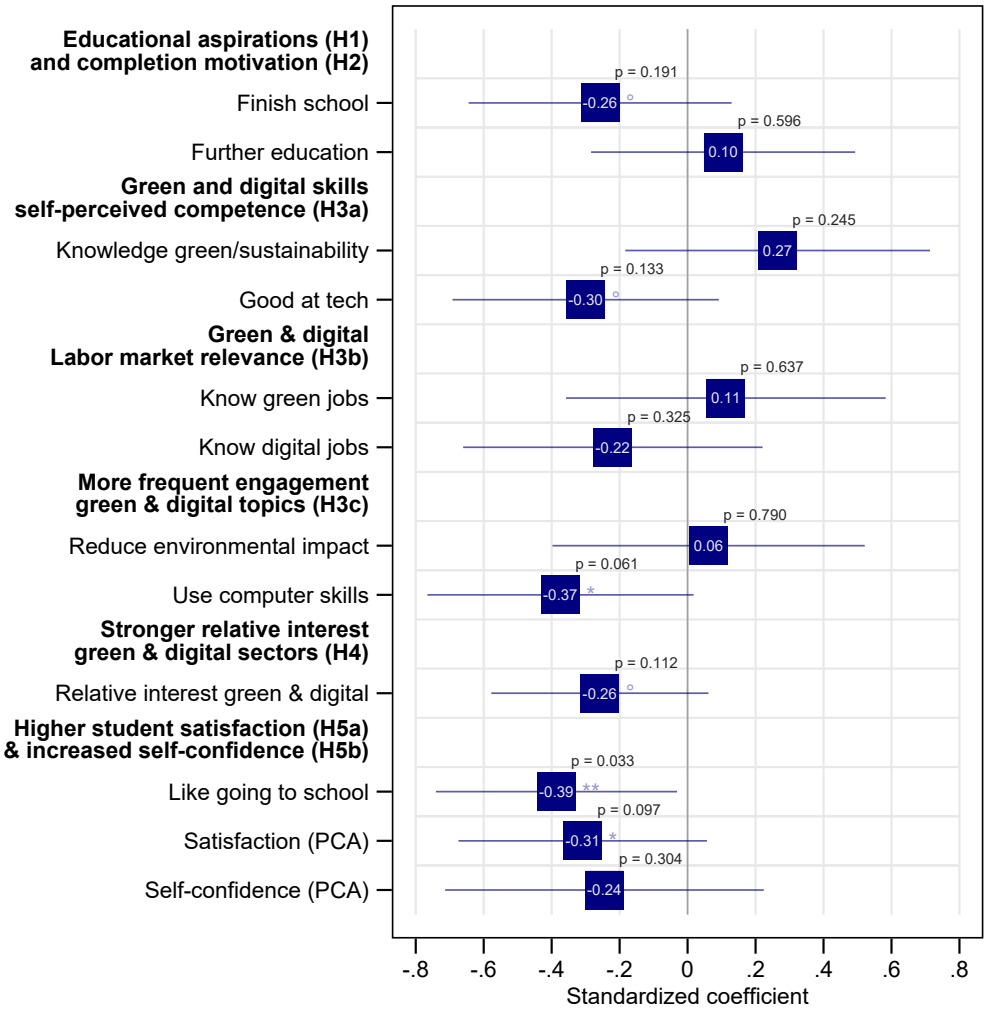


**Figure 1: RAISE-UP effects on main outcomes.** The figure shows standardized coefficients for each of the main outcome variables.

*Note:* Each point represents the coefficient $\hat{\beta}$ from equation (1), estimated separately for each outcome. All dependent variables are standardized. The horizontal bars represent 95% confidence intervals based on standard errors clustered at the student level. The outcomes correspond to Hypotheses **H1**–**H5**, covering aspirations, completion motivation, green–digital competences, sectoral preferences, and school engagement. "Satisfaction" and "Self-confidence" refer to the first principal component of the respective battery of Likert-scale items. Significance levels: $^{***}$ $p < 0.01$, $^{**}$ $p < 0.05$, $^{*}$ $p < 0.1$, $^{\circ}$ $p < 0.2$.

## 3.3 Treatment heterogeneity

To test for treatment effect heterogeneity across subgroups $H_i$, we augment our baseline specification with interaction terms:

$$\begin{aligned} Y_{it} = \beta(\textsc{Post}_t \times \textsc{Treated}_i) + \gamma_H(\textsc{Post}_t \times H_i) \\ + \delta_H(\textsc{Post}_t \times \textsc{Treated}_i \times H_i) + \lambda_i + \tau_t + \varepsilon_{it} \end{aligned} \tag{2}$$

The terms $\lambda_i$ and $\tau_t$ are individual and time fixed effects, respectively. In this specification, the coefficient $\beta$ captures the treatment effect for the reference group ($H_i = 0$). The coefficient $\gamma_H$ controls for differential time trends affecting the subgroup, while our main parameter of interest, the coefficient $\delta_H$, measures the *additional* treatment effect for that subgroup. We estimate this model separately for three binary indicators: **School** (1 = IIS Giolitti), **Female** (1 = female), and **High SES** (1 = student has an own room, sufficient family income, and can afford an annual week's vacation).

The school-level analysis (see Table A11 in the Online Appendix) shows that although none of the interaction terms reach conventional significance, the negative effect on student satisfaction appears concentrated in one school. Among students at IIS Giolitti (School = 0), we find significantly reduced enjoyment of school ($p = 0.018$, Wald-test). By contrast, no comparable effect was observed at IIS Settimo Torinese.

The gender analysis (Table A12, Online Appendix) reveals meaningful heterogeneity. The intervention had a significantly more adverse effect on female students than on their male counterparts regarding their knowledge of green jobs ($p$ for heterogeneity = 0.031), knowledge of digital jobs ($p$ for heterogeneity = 0.037), and self-confidence ($p$ for heterogeneity = 0.035).

Specifically, among female students in the treatment group, the intervention led to a significant decline in their self-reported knowledge of digital jobs ($p = 0.011$), overall satisfaction as measured by the PCA index ($p = 0.038$), and self-confidence (PCA index; $p = 0.031$). A marginally significant reduction also appeared in their intention to use computer skills in the future ($p = 0.082$). By contrast, none of the main outcomes showed significant effects for male students.

By contrast, the analysis by socio-economic status (Table A13, Online Appendix) shows no significant heterogeneity. The program's effects do not systematically differ between students from high and non-high SES backgrounds on any of the main outcomes.

## 3.4 Attrition

An important consideration is whether survey attrition may have biased the estimated treatment effects. While overall attrition was not uncommon - given that the full dataset includes 161 individual students - many of those who dropped out participated in only one wave and thus do not affect the difference-in-differences estimates. As shown in Table 2, response rates declined in the post-treatment wave, with the sample shrinking from 130 to 116 observations.

This shortfall stems almost entirely from IIS Settimo Torinese, where logistical issues prevented several control-class students from completing the May–June 2025 survey. As shown in Table A14 in the Online Appendix, survey non-response is largely explained by fixed demographic characteristics - such as birthplace outside Piedmont, parental birth-

place, or having a self-employed parent. Importantly, baseline outcomes are not systematically predictive of later attrition: a joint $F$-test across twelve pre-treatment variables fails to reject the null at the 10% level, and any marginally significant associations (e.g., knowledge of green jobs) are small in magnitude. The fact that survey dropout is primarily attributable to school-level logistics - rather than by students' baseline aspirations, satisfaction, or green–digital attitudes - helps mitigate concerns about bias in the estimated treatment effects.

## 3.5 Final evaluation questionnaire and potential spillovers

In the third and final survey wave, we included an additional set of evaluation questions. As shown in Figure 2, students in the treatment group offered a lukewarm assessment of their experience following the intervention.[7] On a 7-point Likert scale, they rated the project as a marginally valuable and positive experience (mean = 4.25, median = 4; N = 64) and found the co-teaching by professional educators modestly helpful (mean = 4.09, median = 4). However, their appreciation for the specific focus on digital (mean = 3.91) and green (mean = 3.84) topics was neutral, with a median response of 4 for both items. Critically, students tended to disagree with statements about practical preparation. For the statement "The project helped me prepare for my future educational goals" (mean = 3.28), the median was 4, but 25% of students chose '1 - Strongly disagree'. A similar pattern emerged for professional goals, where the mean was 3.52 and the 25th percentile was 2. This subjective feedback aligns with the null findings observed on the study's primary outcomes.

To assess potential spillovers, the final survey wave included a separate set of questions for the control group to gauge their awareness of and sentiment toward the Raise-Up project. On the same 7-point scale from '1 - Strongly disagree' to '7 - Strongly agree', they reported very low levels of envy about not participating; the median response was '1 - Strongly disagree' (mean = 2.25; N = 44), and 75% of responses were at or below the neutral point of 4. Similarly, they disagreed with the statement "Participating students talked proudly about the project," with a median response of 2 (mean = 2.71). Self-reported awareness of the project's specific activities was modest (mean = 3.64, median = 4). This pattern is corroborated by responses from the treatment group, where the median response was 3 (mean = 3.44) when asked "I talked about the project with students from other classes," indicating infrequent discussions with non-participating peers. Detailed summary statistics can be found in the Online Appendix (Table A6).

A second check assessed objective knowledge of the program's content through a short quiz (see Table A7 in the Online Appendix for details). Both groups performed similarly

[7] These evaluation questions were not part of the original pre-registration. However, the hypotheses they reflect - concerning students' subjective perceptions of the program - are consistent with the overall focus of the intervention and clearly motivated by its stated objectives.

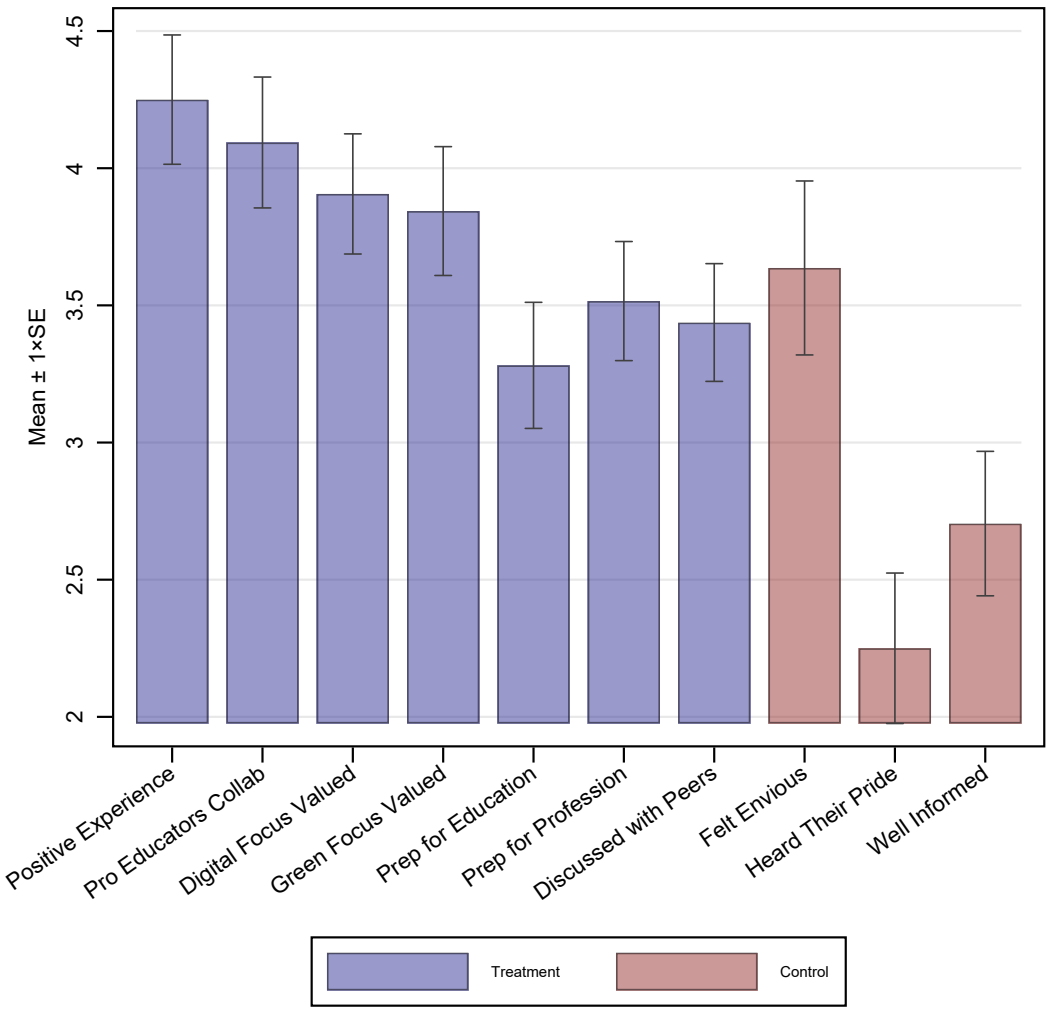


**Figure 2: Post-project evaluation.** The figure shows mean student agreement on a 1–7 Likert scale for questions asked in the final survey wave.

*Note:* Bars indicate ±1 standard error. The first seven items were answered only by the treatment group and the last three only by the control group. The abbreviated labels correspond to the following statements. **Treatment Questions**: *Pro Educators Collab*: "Having professional educators working together with our teachers was very helpful"; *Digital Focus Valued*: "I appreciated the focus on digital topics in the RAISE-UP project"; *Green Focus Valued*: "I appreciated the focus on green and environmental topics in the RAISE-UP project"; *Positive Experience*: "The RAISE-UP project was a valuable and positive experience"; *Prep for Education*: "The project helped me prepare for my future educational goals"; *Prep for Profession*: "The project helped me prepare for my future professional goals"; *Discussed with Peers*: "We often talked about our project with students who were not participating in the RAISE-UP project." **Control Questions**: *Felt Envious*: "I feel envious that my class did not take part in the RAISE-UP project like the others"; *Heard Their Pride*: "The students in the other classes often talk proudly about their participation in the RAISE-UP project"; *Well Informed*: "I am well aware of what the students in the RAISE-UP project did during their project work."

when identifying the abstract goals of the project; there was no significant difference in the number of correct answers (t-test $p = 0.371$; Wilcoxon rank-sum $p = 0.421$). However, treatment students were substantially more likely to correctly identify the project's specific topics and activities. The difference in the number of correctly named topics is statistically significant (mean difference = 0.75; t-test $p = 0.016$; Wilcoxon rank-sum $p = 0.038$). Taken together, these results suggest that while the general purpose of the intervention may have been known, control students had limited understanding of its specific content, indicating minimal risk of contamination across groups.

# 4 Discussion and conclusion

Our evaluation of the Raise-Up pilot finds no evidence that a curriculum update focused on digital and green themes can improve student motivation or aspirations. Across nearly all pre-registered outcomes, the program's effects are statistically indistinguishable from zero. The only exceptions are negative: we identify a clear drop in reported school enjoyment and a modest decline in daily computer use.

The extent to which these outcomes reflect genuine harm is less certain. Integrating project work into already full timetables may have made school feel more demanding, reducing short-run enjoyment without altering deeper attitudes. The decline in computer use is similarly open to interpretation. It is plausible that shifting digital activities from a voluntary leisure pursuit to graded coursework contributed to this result. Students may simply have reallocated their time, spending less on unstructured screen use once digital components became part of the formal curriculum. Rather than aversion, the pattern may instead reflect substitution, consistent with classic crowding-out effects when intrinsic motivation is replaced by external demands (Frey, 1994; Gneezy et al., 2011).

The finding that the program's negative effects, specifically on knowledge of digital jobs, overall satisfaction, and self-confidence, were concentrated among female students is particularly notable. This result suggests the intervention may have unintentionally amplified pre-existing gender differences in educational engagement, especially in technical fields, or interacted with gender-specific stereotypes (Bohnet, 2016; Bursztyn et al., 2023). Future work should directly test the mechanisms behind such gender-specific outcomes to ensure that programs designed to be forward-looking do not leave female students behind.

Admittedly, the lack of positive findings may appear counter-intuitive. Raise-Up closely mirrors the third recommendation of the What Works Clearinghouse (2017) Dropout Prevention Practice Guide: "engage students with curricula that link schoolwork to college and career success and build their capacity to manage challenges." That guidance carries a "strong" evidence rating, supported by rigorous evaluations of interventions designed to operationalize this very principle. For example, *Career Academies* embed academic content within career-oriented pathways and have shown sustained earnings gains

for participants, particularly men, even if diploma rates remain flat (Kemple and Scott-Clayton, 2004). *Early College High Schools* integrate high school and college coursework, increasing both postsecondary enrollment and attainment (Berger et al., 2010; Song et al., 2021). *Becoming a Man* combines cognitive behavioral therapy with mentoring, improving high school graduation rates and reduced violent crime (Heller et al., 2017). Earlier transition-focused models also produced modest academic and behavioral improvements (Dynarski and Gleason, 1998). If the primary mechanism were that increased relevance directly boosts student motivation, we would expect to observe at least modest, measurable improvements in outcomes such as aspirations or engagement. The absence of such shifts suggests that relevance alone may be insufficient, or that other contextual or implementation factors constrained the program's effect.

Yet, our results echo earlier evaluations in which school-based mentoring or curricular enhancements failed to improve student completion or engagement (e.g., the U.S. replication of *Check & Connect*, Heppen et al., 2018; the Quantum Opportunity Program, Schirm et al., 2006; and Rodríguez-Planas, 2012). Taken together, these findings suggest that when schools already provide adequate baseline resources, the limiting factor may be the quality of the day-to-day instruction rather than the simple addition of new content or mentoring supports. In Raise-Up teachers and professional educators did receive training, but it focused mainly on the curriculum content (digital and green themes) rather than on pedagogy or classroom practice. Students engaged with these themes through project-based work, delivered in a co-teaching format. While this represented a shift in classroom routines, the change was limited in scope and duration compared to interventions that embed intensive instructional coaching or whole-school reform. A strong body of evidence shows that high-quality teachers are a central driver of long-term educational attainment and earnings (Rockoff, 2004; Metzler and Woessmann, 2012; Chetty et al., 2014; Jackson, 2018). Seen in this light, the null results Raise-Up may reflect that while the program enriched curricular relevance, it did not substantially transform instructional practice. This intepration is consistent with evidence that interventions must alter both what is taught and how it is taught in order to produce measurable effects.

This interpretation is further reinforced by the broader literature on effective educational interventions. Meta-analyses suggest that the most effective programs provide sustained and intensive support, rather than short or one-off modules. For example, recent studies find that high-dosage tutoring yields large effects, with average gains of 0.30–0.40 standard deviations (Nickow et al., 2020; Dietrichson et al., 2017). Similarly, successful social-emotional learning programs combine structured content with multiple delivery channels and careful attention to implementation fidelity (Durlak et al., 2011). On the instructional side, teacher coaching models that blend individualized feedback with group-based professional development have been shown to improve classroom practice (Tanner-Smith and Wilson, 2013; Kraft et al., 2018). The common denominator

across these approaches is not content alone, but the sustained support to reshape daily teaching.

Evidence from our teacher and professional educator surveys provides additional, albeit cautious, support for this view.[8] Across all respondents ($N \approx 28$), we observe medium-sized gains in two main areas: (i) self-assessed familiarity with green content, and (ii) awareness of green *and* digital competencies relevant to students' future labor-market prospects. The increase in general digital familiarity was borderline significant in the full sample ($p \approx 0.06$) and statistically significant among teachers alone ($p \approx 0.02$), with effect directions aligned with program objectives. By contrast, changes in broader teaching attitudes - such as openness to new material, perceptions of classroom disruption, or confidence in managing difficult students - were mixed and mostly statistically insignificant. This suggests that the short training primarily improved subject-matter familiarity and content knowledge, with limited impact on instructional approaches. [9] These results should be read as descriptive trends rather than causal estimates, given the absence of a counterfactual.

Several limitations should be acknowledged when interpreting the pilot evidence. First, in terms of internal validity, class assignment was determined by school principals rather than through formal randomization. Although baseline covariates appear balanced, and the two-way fixed-effects specification controls for time-invariant differences, non-random placement still allows for the possibility of unobserved factors or group-specific shocks (Cameron and Trivedi, 2008; Wooldridge, 2020). Second, while overall panel attrition was modest and unrelated to baseline outcomes, non-response was concentrated in one control cohort due to end-of-year scheduling disruptions, which may have introduced residual bias.

Third, both the timing and intensity of the intervention constrain what can reasonably be expected. The Raise-Up pilot spanned a single semester, with 24 hours of teacher training - modest by the standards of coaching programs and likely below the threshold needed to shift instructional practice meaningfully (Kraft et al., 2018). The follow-up survey, administered within six weeks of the final session to avoid the three-month summer break, may also have been too early to capture socio-emotional or behavioral change,

[8] Participants completed surveys at three time points - before, midway, and after their training ("capacity-building") sessions (see Section A1.2 in the Online Appendix).

[9] In the final survey, teachers expressed high levels of satisfaction with the Raise-Up training program, while educators were only marginally positive across most dimensions. Specifically, teachers reported strong agreement with statements such as "I am satisfied with the overall quality of the training program," "The training content is relevant to my educational responsibilities," "The trainer(s) effectively delivered the training material," "The training program was well-structured and organized," "The training materials and resources provided were useful," and "The training adequately prepared me to apply what I learned in my educational activities." Educators, by contrast, gave more reserved ratings, generally just above the neutral midpoint. Notably, on the item assessing political neutrality - "To what extent do you think the training or its content was politically biased?" - both teachers and educators reported low levels of perceived bias, indicating a shared view that the training was politically balanced.

which typically requires sustained exposure (Durlak et al., 2011; Rodríguez-Planas, 2012; Kraft and Blazar, 2018). Delivery heterogeneity adds a further layer of uncertainty: the co-teaching model rested on individual teachers' and educators' initiative and style. While our sample does not allow for class-level analysis, uneven implementation could have attenuated effects, especially if gains accrue only with more time or under more consistent execution.

Fourth, the program's limited effects may stem from broader design and implementation challenges. Unlike control-group teachers, those in the treatment group faced higher workloads, potentially weakening buy-in and delivery quality. According to the project's pedagogical report, based on educators' field notes, RAISE-UP's project-based sessions were frequently described as too long, with visible drops in attention and signs of fatigue. Technical issues and difficulties sustaining engagement further complicated delivery. These frictions likely diluted the intervention's impact and underscore a broader point: project-based formats must be tightly integrated into the curriculum to avoid overburdening teachers and students alike.

Regarding external validity, we acknowledge that the study is limited in scale: it was conducted in two vocational schools near Turin - a metropolitan area with above-average dropout and migrant shares (Lamonica et al., 2020) - and involved 161 second-year students from eight classes. Generalizing the findings to other VET settings or to general secondary education should be done with caution, especially given that the curriculum focused on green-transition themes. Such content may resonate differently across socioeconomic environments. For instance, environmental education has been shown to be taken up more readily in wealthier or more educated communities, where baseline environmental attitudes and pro-environmental behaviors are more pronounced (see, e.g., Qadri et al., 2025). Accordingly, effects observed in this setting may not generalize to rural, lower-income, higher-income, or culturally distinct contexts. Still, following List (2020), we take the view that while no finding is universally generalizable, every finding has external validity within some context.

In sum, Raise-Up did not yield measurable short-run gains in student outcomes. Any effort to scale this model - or design similar programs - must rest on stronger foundations. This means coupling new content with sustained teacher coaching, student mentoring, and longer evaluation windows. The broader lesson, consistent with the cited literature, is that short, stand-alone interventions - however well-intentioned - are unlikely to shift outcomes at scale. Even when delivered by professional educators, temporary support and one-off coaching offer limited leverage if not embedded in daily practice. Improving results requires durable changes in teaching routines, backed by institutional structures.

Aligning vocational education with the digital and green transitions is a pressing policy goal. But it cannot be achieved through curricular updates alone. Real returns depend on interventions that are intensive, sustained, and capable of reaching classrooms consistently

and at scale.

## Declaration of generative AI and AI-assisted technologies in the writing process

We acknowledge the use of Grammarly Pro, OpenAI's ChatGPT 4o, and Google Gemini 2.5 Pro to improve the clarity and readability of this manuscript. After using these tools/services, the authors reviewed and edited the content as needed and take full responsibility for the content of the published article.

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# A1 Online Appendix

## A1.1 Additional Tables and Analyses (Students' Survey)

**Table A3:** Summary Statistics for Satisfaction Questions by Group and Round

| Variable | Control Group | | | Treatment Group | | |
|---|---|---|---|---|---|---|
| | R1 | R2 | R3 | R1 | R2 | R3 |
| Like school | 3.321 | 3.357 | 3.633 | 4.110 | 4.254 | 3.851 |
| | (1.574) | (1.656) | (1.642) | (1.603) | (1.461) | (1.964) |
| Useless learning | 3.786 | 4.214 | 4.327 | 4.192 | 3.775 | 4.463 |
| | (1.615) | (1.569) | (1.345) | (1.697) | (1.514) | (1.599) |
| Homework boring | 3.018 | 3.196 | 3.061 | 3.205 | 3.296 | 2.896 |
| | (1.814) | (1.901) | (2.015) | (1.795) | (1.776) | (1.970) |
| Enjoy classmates | 4.554 | 4.036 | 4.347 | 4.945 | 4.803 | 4.239 |
| | (1.788) | (1.972) | (1.809) | (1.731) | (1.762) | (2.046) |
| Future education useful | 4.964 | 4.446 | 4.265 | 5.082 | 5.099 | 4.493 |
| | (1.477) | (1.768) | (1.668) | (1.579) | (1.426) | (1.673) |
| Future career useful | 4.875 | 4.536 | 4.694 | 5.014 | 5.141 | 4.642 |
| | (1.652) | (1.868) | (1.503) | (1.448) | (1.437) | (1.676) |
| Losing interest | 3.946 | 4.161 | 4.041 | 4.178 | 4.056 | 4.448 |
| | (1.762) | (1.756) | (1.837) | (1.858) | (1.698) | (1.699) |
| Ask for help | 4.321 | 4.107 | 4.122 | 4.890 | 4.803 | 4.627 |
| | (1.889) | (1.951) | (1.716) | (1.577) | (1.653) | (1.824) |
| Positive teacher-student relations | 4.321 | 4.179 | 4.469 | 4.507 | 4.183 | 4.030 |
| | (1.441) | (1.363) | (1.445) | (1.510) | (1.701) | (1.842) |
| Treated badly | 1.464 | 2.429 | 2.204 | 2.411 | 2.493 | 2.836 |
| | (1.111) | (1.990) | (1.527) | (1.906) | (1.934) | (2.143) |
| N | 56 | 56 | 49 | 73 | 71 | 67 |

*Notes*: This table presents means and standard deviations (in parentheses) for control and treatment groups across three rounds (R1, R2, R3). Variable definitions (all measured on a 7-point Likert scale from "1 Strongly disagree" to "7 Strongly agree"): **Like school**: "I like going to school." **Useless learning**: "Many things we learn in school are useless." **Homework boring**: "Homework is not boring." **Enjoy classmates**: "I enjoy spending time with my classmates." **Future education useful**: "In general, I feel that my studies will be useful for my future education." **Future career useful**: "In general, I feel that my studies will be useful for my future professional career." **Losing interest**: "I often feel like I'm losing interest in school overall." **Ask for help**: "There are students in my class that I can ask for help." **Positive teacher-student relations**: "Overall, the relationships between teachers and students at my school are positive." **Treated badly**: "There is at least one student in my school who treats me badly or unfairly." Sample sizes ($N$) for each group and survey round are shown in the last row, based on the first variable listed. Exact $N$ may vary slightly across outcomes due to item non-response.

**Table A4:** Summary Statistics for Self-Confidence Questions by Group and Round

| Variable | Control Group | | | Treatment Group | | |
|---|---|---|---|---|---|---|
| | R1 | R2 | R3 | R1 | R2 | R3 |
| Happy with performance | 3.839 | 3.836 | 4.125 | 4.274 | 4.254 | 4.091 |
| | (1.604) | (1.596) | (1.496) | (1.575) | (1.481) | (1.862) |
| Cannot do well | 4.143 | 3.745 | 3.812 | 4.233 | 3.930 | 3.985 |
| | (1.823) | (2.039) | (1.806) | (1.926) | (1.799) | (1.877) |
| Plan assignment | 3.304 | 3.709 | 3.479 | 3.863 | 3.676 | 3.818 |
| | (1.778) | (1.663) | (1.810) | (1.895) | (1.646) | (1.822) |
| Understand expectations | 3.893 | 4.327 | 4.062 | 4.890 | 4.423 | 4.424 |
| | (1.473) | (1.528) | (1.479) | (1.429) | (1.470) | (1.510) |
| No care for forbidden behavior | 2.857 | 3.218 | 2.542 | 3.178 | 2.761 | 3.152 |
| | (1.976) | (2.025) | (1.570) | (1.866) | (1.793) | (1.850) |
| Involved in fights | 1.893 | 2.600 | 2.229 | 1.904 | 1.972 | 2.561 |
| | (1.765) | (1.959) | (1.825) | (1.483) | (1.464) | (1.906) |
| People care about me | 5.375 | 4.964 | 5.208 | 5.466 | 5.296 | 5.258 |
| | (1.743) | (2.063) | (1.701) | (1.772) | (1.870) | (2.010) |
| Concentrate easily | 3.000 | 3.782 | 3.354 | 4.027 | 4.014 | 3.561 |
| | (1.607) | (1.792) | (1.874) | (1.748) | (1.694) | (1.882) |
| N | 56 | 55 | 48 | 73 | 71 | 66 |

*Notes*: This table presents means and standard deviations (in parentheses) for control and treatment groups across three rounds (R1, R2, R3). Variable definitions (all measured on a 7-point Likert scale from "1 Strongly disagree" to "7 Strongly agree"): **Happy with performance**: "I am generally satisfied with my performance as a student." **Cannot do well**: "I cannot do well in school even if I want to." **Plan assignment**: "Before starting an assignment, I create a plan for how I am going to complete it." **Understand expectations**: "I understand what my teachers expect me to learn." **No care for forbidden behavior**: "I do not care about what behaviour is forbidden in school." **Involved in fights**: "I am usually involved in fights or violent arguments." **People care about me**: "There are people in my life who care about me." **Concentrate easily**: "When doing my homework, I can concentrate easily." Sample sizes ($N$) for each group and survey round are shown in the last row, based on the first variable listed. Exact $N$ may vary slightly across outcomes due to item non-response.

**Table A5:** Summary Statistics for Job Choice and Sector Interest by Group and Round

| Variable | Control Group | | | Treatment Group | | |
|---|---|---|---|---|---|---|
| | R1 | R2 | R3 | R1 | R2 | R3 |
| Job Choice | 2.839 | 2.709 | 2.771 | 2.836 | 2.958 | 2.955 |
| | (0.733) | (0.854) | (0.805) | (0.834) | (0.801) | (0.793) |
| Interest in Green Sector | 9.105 | 10.966 | 11.082 | 10.356 | 10.708 | 8.746 |
| | (10.990) | (12.216) | (9.727) | (9.804) | (10.676) | (8.919) |
| Interest in Digital Sector | 11.684 | 12.517 | 14.531 | 18.041 | 15.333 | 14.866 |
| | (14.476) | (11.795) | (10.452) | (19.142) | (14.243) | (13.240) |
| Interest in Tourism Sector | 30.333 | 26.590 | 34.245 | 26.493 | 29.139 | 29.493 |
| | (25.256) | (25.296) | (24.644) | (25.497) | (27.226) | (28.521) |
| Interest in Industry Sector | 11.807 | 11.293 | 15.020 | 14.288 | 14.097 | 18.075 |
| | (14.637) | (12.111) | (12.701) | (16.713) | (17.765) | (21.937) |
| Interest in Other Sectors | 33.561 | 32.776 | 22.367 | 30.822 | 30.097 | 27.328 |
| | (28.461) | (29.958) | (21.560) | (25.739) | (28.857) | (25.529) |
| N | 57 | 58 | 49 | 73 | 72 | 67 |

*Notes*: This table presents means and standard deviations (in parentheses) for control and treatment groups across three rounds (R1, R2, R3). Variable definitions: **Job Choice**: How sure are you about your future job choice? (4-point scale: "1 Not sure at all" to "4 Very sure"). **Interest in Green Sector**: Percentage points of interest in jobs in renewable energy, waste management, environmental conservation, etc. **Interest in Digital Sector**: Percentage points of interest in jobs in technology, such as software development, data analysis, etc. **Interest in Tourism Sector**: Percentage points of interest in jobs in travel, hotels, restaurants, and related services. **Interest in Industry Sector**: Percentage points of interest in jobs in building infrastructure, producing goods, and manufacturing. **Interest in Other Sectors**: Percentage points of interest in all other jobs not listed in the other categories. Sample sizes ($N$) for each group and survey round are shown in the last row, based on the first variable listed. Exact $N$ may vary slightly across outcomes due to item non-response.

**Table A6:** Summary Statistics for Post-Project Evaluation

| | Control Group | | | | | | Treatment Group | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Variable** | Mean | P25 | P50 | P75 | (SD) | *N* | Mean | P25 | P50 | P75 | (SD) | *N* |
| *Panel A: Questions for Treatment Group Only* | | | | | | | | | | | | |
| Co-teaching helpful | – | – | – | – | – | 0 | 4.094 | 2.0 | 4.0 | 5.5 | (1.908) | 64 |
| Valued digital focus | – | – | – | – | – | 0 | 3.906 | 2.0 | 4.0 | 5.0 | (1.752) | 64 |
| Valued green focus | – | – | – | – | – | 0 | 3.844 | 2.0 | 4.0 | 5.0 | (1.879) | 64 |
| Positive experience | – | – | – | – | – | 0 | 4.250 | 3.0 | 4.0 | 6.0 | (1.886) | 64 |
| Helped educ. goals | – | – | – | – | – | 0 | 3.281 | 1.0 | 4.0 | 4.5 | (1.838) | 64 |
| Helped prof. goals | – | – | – | – | – | 0 | 3.516 | 2.0 | 4.0 | 5.0 | (1.737) | 64 |
| Discussed with peers | – | – | – | – | – | 0 | 3.438 | 2.0 | 3.0 | 5.0 | (1.717) | 64 |
| *Panel B: Questions for Control Group Only* | | | | | | | | | | | | |
| Felt envious | 2.250 | 1.0 | 1.0 | 4.0 | (1.819) | 44 | – | – | – | – | – | 0 |
| Heard their pride | 2.705 | 1.0 | 2.0 | 4.0 | (1.746) | 44 | – | – | – | – | – | 0 |
| Well informed | 3.636 | 1.5 | 4.0 | 5.0 | (2.103) | 44 | – | – | – | – | – | 0 |

*Notes*: This table presents summary statistics for the post-project evaluation questionnaire administered in the final survey wave. All items were rated on a 1–7 Likert scale from "1 - Strongly disagree" to "7 - Strongly agree." Standard deviations (SD) are in parentheses. *N* is the number of non-missing observations. Dashes (–) indicate that the question was not administered to that group. Variable abbreviations correspond to the following questions: **Co-teaching helpful**: "Having professional educators working together with our teachers was very helpful." **Valued digital focus**: "I appreciated the focus on digital topics in the RAISE-UP project." **Valued green focus**: "I appreciated the focus on green and environmental topics in the RAISE-UP project." **Positive experience**: "The RAISE-UP project was a valuable and positive experience." **Helped educ. goals**: "The project helped me prepare for my future educational goals." **Helped prof. goals**: "The project helped me prepare for my future professional goals." **Discussed with peers**: "We often talked about our project with students who were not participating in the RAISE-UP project." **Felt envious**: "I feel envious that my class did not take part in the RAISE-UP project like the others." **Heard their pride**: "The students in the other classes often talk proudly about their participation in the RAISE-UP project." **Well informed**: "I am well aware of what the students in the RAISE-UP project did during their project work."

**Table A7:** Student Knowledge of Project Content and Goals

| | Control Group | | | Treatment Group | | | |
|---|---|---|---|---|---|---|---|
| **Variable** | Mean | SD | *N* | Mean | SD | *N* | *p*-value |
| *Panel A: Summary Scores* | | | | | | | |
| Total correct answers: Goals (out of 10) | 5.545 | 1.372 | 44 | 5.781 | 1.291 | 64 | 0.371 |
| Total correct answers: Topics (out of 10) | 5.636 | 1.296 | 44 | 6.391 | 1.891 | 64 | 0.016 |
| *Panel B: What was the project about? (Proportion selecting answer)* | | | | | | | |
| *Correct Statements* | | | | | | | |
| Practical activities (digital/environmental) | 0.364 | 0.487 | 44 | 0.531 | 0.503 | 64 | 0.086 |
| Using digital tools for projects | 0.227 | 0.424 | 44 | 0.578 | 0.498 | 64 | 0.000 |
| Learning about ecological issues | 0.295 | 0.462 | 44 | 0.500 | 0.504 | 64 | 0.032 |
| Lessons with teachers & external educators | 0.227 | 0.424 | 44 | 0.359 | 0.484 | 64 | 0.136 |
| Thinking about future jobs/careers | 0.432 | 0.501 | 44 | 0.312 | 0.467 | 64 | 0.215 |
| *Incorrect Statements (Distractors)* | | | | | | | |
| Teacher-only training | 0.182 | 0.390 | 44 | 0.297 | 0.460 | 64 | 0.165 |
| After-school sports club | 0.250 | 0.438 | 44 | 0.109 | 0.315 | 64 | 0.071 |
| Homework on literature/history | 0.114 | 0.321 | 44 | 0.156 | 0.366 | 64 | 0.524 |
| Fundraising events | 0.182 | 0.390 | 44 | 0.188 | 0.393 | 64 | 0.941 |
| Preparing for university exams | 0.182 | 0.390 | 44 | 0.141 | 0.350 | 64 | 0.576 |
| *Panel C: What were the project's goals? (Proportion selecting answer)* | | | | | | | |
| *Correct Statements* | | | | | | | |
| Make subjects more interesting (tech/env) | 0.227 | 0.424 | 44 | 0.484 | 0.504 | 64 | 0.005 |
| Support teachers with new methods | 0.205 | 0.408 | 44 | 0.297 | 0.460 | 64 | 0.276 |
| Help students understand future jobs | 0.273 | 0.451 | 44 | 0.234 | 0.427 | 64 | 0.658 |
| Help students stay motivated | 0.364 | 0.487 | 44 | 0.297 | 0.460 | 64 | 0.476 |
| Reduce school dropout | 0.295 | 0.462 | 44 | 0.250 | 0.436 | 64 | 0.608 |
| *Incorrect Statements (Distractors)* | | | | | | | |
| Organize student exchanges | 0.114 | 0.321 | 44 | 0.281 | 0.453 | 64 | 0.027 |
| Provide financial aid | 0.250 | 0.438 | 44 | 0.188 | 0.393 | 64 | 0.450 |
| Renovate school buildings | 0.182 | 0.390 | 44 | 0.125 | 0.333 | 64 | 0.433 |
| Find part-time jobs | 0.114 | 0.321 | 44 | 0.078 | 0.270 | 64 | 0.549 |
| Create new sports teams | 0.159 | 0.370 | 44 | 0.109 | 0.315 | 64 | 0.468 |

*Notes*: This table presents results from a knowledge quiz administered in the final survey wave. Panel A shows the total number of correctly answered questions out of 10 possible (i.e., identifying a true statement as true or a false statement as false). Panels B and C show the proportion of students selecting each specific statement. The *p*-value is from a two-sided t-test comparing the means of the control and treatment groups.

**Table A8:** Main Regression Results

| | Dependent Variable | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Variable** | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| post | 0.111 | 0.079 | −0.126 | 0.057 | 0.097 | 0.102 | −0.006 | 0.302* | 0.144 | 0.233* | −0.154 | −0.016 |
| | (0.177) | (0.161) | (0.181) | (0.153) | (0.205) | (0.176) | (0.196) | (0.163) | (0.142) | (0.133) | (0.137) | (0.199) |
| Survey round = 2 | −0.036 | 0.116 | −0.056 | −0.113 | 0.018 | −0.105 | 0.074 | −0.015 | −0.136 | 0.029 | −0.203** | −0.048 |
| | (0.104) | (0.083) | (0.098) | (0.079) | (0.102) | (0.094) | (0.089) | (0.089) | (0.100) | (0.093) | (0.087) | (0.091) |
| post × treatment | −0.257 | 0.104 | 0.265 | −0.300 | 0.113 | −0.220 | 0.062 | −0.374* | −0.258 | −0.386** | −0.309* | −0.245 |
| | (0.196) | (0.197) | (0.227) | (0.198) | (0.238) | (0.223) | (0.233) | (0.198) | (0.162) | (0.180) | (0.185) | (0.237) |
| Constant | 0.024 | −0.083 | 0.009 | 0.075 | −0.056 | 0.045 | −0.035 | −0.019 | 0.048 | −0.013 | 0.173*** | 0.065 |
| | (0.060) | (0.050) | (0.064) | (0.049) | (0.062) | (0.059) | (0.055) | (0.053) | (0.057) | (0.056) | (0.053) | (0.058) |
| N | 369.000 | 369.000 | 362.000 | 362.000 | 362.000 | 362.000 | 362.000 | 362.000 | 376.000 | 372.000 | 372.000 | 369.000 |
| N_groups | 159.000 | 159.000 | 157.000 | 157.000 | 157.000 | 157.000 | 157.000 | 157.000 | 161.000 | 160.000 | 160.000 | 159.000 |
| N_clusters | 159.000 | 159.000 | 157.000 | 157.000 | 157.000 | 157.000 | 157.000 | 157.000 | 161.000 | 160.000 | 160.000 | 159.000 |
| $R^2$ (within) | 0.010 | 0.014 | 0.011 | 0.025 | 0.013 | 0.011 | 0.003 | 0.023 | 0.022 | 0.021 | 0.067 | 0.018 |
| $R^2$ (between) | 0.015 | 0.039 | 0.015 | 0.001 | 0.002 | 0.000 | 0.013 | 0.034 | 0.022 | 0.015 | 0.004 | 0.000 |
| $R^2$ (overall) | 0.001 | 0.009 | 0.014 | 0.003 | 0.006 | 0.002 | 0.005 | 0.018 | 0.000 | 0.001 | 0.008 | 0.001 |
| $\sigma_e$ | 0.755 | 0.691 | 0.816 | 0.685 | 0.819 | 0.793 | 0.764 | 0.713 | 0.705 | 0.731 | 0.721 | 0.803 |
| $\sigma_u$ | 0.899 | 0.878 | 0.798 | 0.870 | 0.840 | 0.839 | 0.825 | 0.860 | 0.875 | 0.882 | 0.882 | 0.819 |
| $p$ (post × treatment) | 0.191 | 0.596 | 0.245 | 0.133 | 0.637 | 0.325 | 0.791 | 0.061* | 0.112 | 0.033** | 0.097* | 0.304 |

*Notes*: This table presents coefficients from two-way fixed effects regressions. Standard errors clustered at the individual level are shown in parentheses below the coefficients. The 'post' row shows the estimated coefficient for the post-treatment period (Round 3), relative to Round 1, for the control group. The 'Survey round = 2' row shows the estimated coefficient for Round 2, relative to Round 1, for the control group. The 'post × treatment' row shows the estimated Difference-in-Differences (DiD) effect. The 'p (post × treatment)' in the last row refers to the p-value for the DiD estimate. Dependent variables are standardized. Full descriptions: (1) Finish school: How likely is it that you will finish school successfully? (Slider scale, 0-100). (2) Further education: How likely are you to go to university or similar after finishing high school? (Slider scale, 0-100). (3) Knowledge green/sustainability: "I know a lot about green topics, sustainability and how to apply them." (Measured on a 7-point Likert scale from "1 Strongly disagree" to "7 Strongly agree"). (4) Good at tech: "I'm good at using computers and technology." (Measured on a 7-point Likert scale from "1 Strongly disagree" to "7 Strongly agree"). (5) Know green jobs: "I know about jobs that value green skills and focus on green topics and sustainability." (Measured on a 7-point Likert scale from "1 Strongly disagree" to "7 Strongly agree"). (6) Know digital jobs: "I know about jobs that require digital skills." (Measured on a 7-point Likert scale from "1 Strongly disagree" to "7 Strongly agree"). (7) Reduce environmental impact: "I often take actions to reduce my environmental impact, like recycling or saving." (Measured on a 7-point Likert scale from "1 Strongly disagree" to "7 Strongly agree"). (8) Use computer skills: "I regularly use my computer skills in my schoolwork or hobbies." (Measured on a 7-point Likert scale from "1 Strongly disagree" to "7 Strongly agree"). (9) Relative interest green & digital: Relative interest in green and digital sectors. (10) Like going to school: "I like going to school." (Measured on a 7-point Likert scale from "1 Strongly disagree" to "7 Strongly agree"). (11) Satisfaction (PCA): PCA Index of Satisfaction Variables. (12) Self-confidence (PCA): PCA Index of Self-confidence Variables. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

**Table A9:** Regression Results for Satisfaction Questions

| | Dependent Variable | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Variable** | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| post | 0.233* | 0.155 | 0.052 | −0.161 | −0.466*** | −0.118 | −0.051 | −0.159 | 0.062 | 0.255 |
| | (0.133) | (0.216) | (0.191) | (0.162) | (0.171) | (0.169) | (0.194) | (0.172) | (0.137) | (0.169) |
| Survey round = 2 | 0.029 | −0.035 | 0.045 | −0.172* | −0.180 | −0.123 | 0.030 | −0.154 | −0.213** | 0.231** |
| | (0.093) | (0.127) | (0.111) | (0.088) | (0.112) | (0.102) | (0.112) | (0.098) | (0.093) | (0.112) |
| post × treatment | −0.386** | 0.066 | −0.153 | −0.315 | 0.080 | −0.166 | 0.174 | −0.083 | −0.354* | 0.059 |
| | (0.180) | (0.247) | (0.236) | (0.206) | (0.215) | (0.205) | (0.223) | (0.208) | (0.185) | (0.229) |
| Constant | −0.013 | −0.048 | −0.004 | 0.166*** | 0.192*** | 0.109* | −0.026 | 0.117** | 0.117** | −0.169** |
| | (0.056) | (0.076) | (0.068) | (0.054) | (0.065) | (0.061) | (0.066) | (0.057) | (0.056) | (0.065) |
| N | 372.000 | 372.000 | 372.000 | 372.000 | 372.000 | 372.000 | 372.000 | 372.000 | 372.000 | 372.000 |
| N_groups | 160.000 | 160.000 | 160.000 | 160.000 | 160.000 | 160.000 | 160.000 | 160.000 | 160.000 | 160.000 |
| N_clusters | 160.000 | 160.000 | 160.000 | 160.000 | 160.000 | 160.000 | 160.000 | 160.000 | 160.000 | 160.000 |
| $R^2$ (within) | 0.021 | 0.016 | 0.004 | 0.064 | 0.055 | 0.022 | 0.004 | 0.020 | 0.040 | 0.030 |
| $R^2$ (between) | 0.015 | 0.036 | 0.001 | 0.001 | 0.001 | 0.002 | 0.006 | 0.016 | 0.000 | 0.033 |
| $R^2$ (overall) | 0.001 | 0.015 | 0.003 | 0.010 | 0.027 | 0.005 | 0.006 | 0.001 | 0.011 | 0.021 |
| $\sigma_e$ | 0.731 | 0.955 | 0.887 | 0.750 | 0.858 | 0.797 | 0.846 | 0.777 | 0.736 | 0.897 |
| $\sigma_u$ | 0.882 | 0.721 | 0.792 | 0.866 | 0.829 | 0.874 | 0.826 | 0.869 | 0.857 | 0.778 |
| $p$ (post × treatment) | 0.033** | 0.791 | 0.519 | 0.127 | 0.711 | 0.420 | 0.437 | 0.690 | 0.057* | 0.796 |

*Notes*: This table presents coefficients from two-way fixed effects regressions. Standard errors clustered at the individual level are shown in parentheses below the coefficients. The 'post' row shows the estimated coefficient for the post-treatment period (Round 3), relative to Round 1, for the control group. The 'Survey round = 2' row shows the estimated coefficient for Round 2, relative to Round 1, for the control group. The 'post × treatment' row shows the estimated Difference-in-Differences (DiD) effect. The 'p (post × treatment)' in the last row refers to the p-value for the DiD estimate. Dependent variables are standardized. Full descriptions: (1) Like going to school: "I like going to school." (2) Useless learning: "Many things we learn in school are useless." (3) Homework boring: "Homework is not boring." (4) Enjoy classmates: "I enjoy spending time with my classmates." (5) Future education useful: "In general, I feel that my studies will be useful for my future education." (6) Future career useful: "In general, I feel that my studies will be useful for my future professional career." (7) Losing interest: "I often feel like I'm losing interest in school overall." (8) Ask for help: "There are students in my class that I can ask for help." (9) Positive teacher-student relations: "Overall, the relationships between teachers and students at my school are positive." (10) Treated badly: "There is at least one student in my school who treats me badly or unfairly." Variables (1) to (10) are measured on a 7-point Likert scale from "1 Strongly disagree" to "7 Strongly agree". * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

**Table A10:** Regression Results for Self-Confidence Questions

| | Dependent Variable | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Variable** | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| post | 0.074 | −0.189 | 0.004 | −0.028 | −0.189 | 0.102 | −0.201 | 0.134 |
| | (0.155) | (0.146) | (0.204) | (0.181) | (0.158) | (0.169) | (0.166) | (0.172) |
| Survey round = 2 | −0.073 | −0.226** | 0.066 | −0.011 | −0.122 | 0.152 | −0.145 | 0.115 |
| | (0.103) | (0.094) | (0.110) | (0.118) | (0.127) | (0.093) | (0.100) | (0.109) |
| post × treatment | −0.222 | 0.010 | −0.009 | −0.145 | 0.181 | 0.253 | 0.141 | −0.293 |
| | (0.204) | (0.190) | (0.240) | (0.220) | (0.219) | (0.227) | (0.210) | (0.206) |
| Constant | 0.042 | 0.134** | −0.022 | 0.038 | 0.068 | −0.129** | 0.086 | −0.028 |
| | (0.063) | (0.055) | (0.070) | (0.069) | (0.074) | (0.060) | (0.061) | (0.065) |
| N | 369.000 | 369.000 | 369.000 | 369.000 | 369.000 | 369.000 | 369.000 | 369.000 |
| N_groups | 159.000 | 159.000 | 159.000 | 159.000 | 159.000 | 159.000 | 159.000 | 159.000 |
| N_clusters | 159.000 | 159.000 | 159.000 | 159.000 | 159.000 | 159.000 | 159.000 | 159.000 |
| $R^2$ (within) | 0.008 | 0.028 | 0.002 | 0.007 | 0.007 | 0.032 | 0.012 | 0.019 |
| $R^2$ (between) | 0.000 | 0.000 | 0.019 | 0.008 | 0.002 | 0.035 | 0.000 | 0.001 |
| $R^2$ (overall) | 0.000 | 0.007 | 0.000 | 0.000 | 0.006 | 0.018 | 0.003 | 0.002 |
| $\sigma_e$ | 0.811 | 0.737 | 0.878 | 0.887 | 0.944 | 0.814 | 0.805 | 0.819 |
| $\sigma_u$ | 0.809 | 0.855 | 0.799 | 0.769 | 0.767 | 0.839 | 0.854 | 0.847 |
| $p$ (post × treatment) | 0.277 | 0.958 | 0.969 | 0.511 | 0.411 | 0.267 | 0.503 | 0.157 |

*Notes*: This table presents coefficients from two-way fixed effects regressions. Standard errors clustered at the individual level are shown in parentheses below the coefficients. The 'post' row shows the estimated coefficient for the post-treatment period (Round 3), relative to Round 1, for the control group. The 'Survey round = 2' row shows the estimated coefficient for Round 2, relative to Round 1, for the control group. The 'post × treatment' row shows the estimated Difference-in-Differences (DiD) effect. The 'p (post × treatment)' in the last row refers to the p-value for the DiD estimate. Dependent variables are standardized. Full descriptions: (1) Happy with performance: "I am generally satisfied with my performance as a student." (2) Cannot do well: "I cannot do well in school even if I want to." (3) Plan assignment: "Before starting an assignment, I create a plan for how I am going to complete it." (4) Understand expectations: "I understand what my teachers expect me to learn." (5) No care for forbidden behavior: "I do not care about what behaviour is forbidden in school." (6) Involved in fights: "I am usually involved in fights or violent arguments." (7) People care about me: "There are people in my life who care about me." (8) Concentrate easily: "When doing my homework, I can concentrate easily." All variables are measured on a 7-point Likert scale from "1 Strongly disagree" to "7 Strongly agree". * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

**Table A11:** Heterogeneity Analysis: Main Outcomes (Heterogeneity by School Indicator)

| | **Dependent Variable** | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Coefficient** | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| Treatment × Post (School = 0) | −0.263 | 0.117 | 0.366 | −0.158 | 0.147 | 0.118 | 0.086 | −0.390 | −0.112 | −0.476** | −0.311 | −0.130 |
| | (0.240) | (0.256) | (0.277) | (0.244) | (0.299) | (0.288) | (0.314) | (0.265) | (0.179) | (0.200) | (0.254) | (0.277) |
| Treatment × Post × School | 0.008 | −0.022 | −0.259 | −0.360 | −0.093 | −0.834* | −0.065 | 0.033 | −0.384 | 0.203 | −0.034 | −0.285 |
| | (0.405) | (0.401) | (0.463) | (0.407) | (0.480) | (0.437) | (0.449) | (0.395) | (0.338) | (0.377) | (0.361) | (0.494) |
| N | 369 | 369 | 362 | 362 | 362 | 362 | 362 | 362 | 374 | 372 | 372 | 369 |
| N_groups | 159 | 159 | 157 | 157 | 157 | 157 | 157 | 157 | 160 | 160 | 160 | 159 |
| N_clusters | 159 | 159 | 157 | 157 | 157 | 157 | 157 | 157 | 160 | 160 | 160 | 159 |
| $R^2$ (within) | 0.014 | 0.008 | 0.022 | 0.025 | 0.028 | 0.026 | 0.027 | 0.031 | 0.028 | 0.037 | 0.057 | 0.029 |
| $R^2$ (between) | 0.014 | 0.044 | 0.001 | 0.013 | 0.026 | 0.016 | 0.033 | 0.006 | 0.000 | 0.031 | 0.003 | 0.001 |
| $R^2$ (overall) | 0.001 | 0.009 | 0.004 | 0.000 | 0.003 | 0.000 | 0.001 | 0.008 | 0.005 | 0.001 | 0.006 | 0.005 |
| $\sigma_e$ | 0.755 | 0.695 | 0.813 | 0.686 | 0.815 | 0.789 | 0.757 | 0.712 | 0.707 | 0.726 | 0.727 | 0.801 |
| $\sigma_u$ | 0.901 | 0.878 | 0.811 | 0.881 | 0.855 | 0.857 | 0.848 | 0.870 | 0.867 | 0.892 | 0.883 | 0.819 |
| $p$ (Het. effect) | 0.985 | 0.957 | 0.576 | 0.377 | 0.846 | 0.058* | 0.884 | 0.934 | 0.257 | 0.590 | 0.926 | 0.564 |
| $p$ (Total effect, School = 1) | 0.435 | 0.759 | 0.774 | 0.113 | 0.886 | 0.031** | 0.948 | 0.226 | 0.085* | 0.394 | 0.183 | 0.312 |
| $p$ (Total effect, School = 0) | 0.275 | 0.649 | 0.189 | 0.520 | 0.623 | 0.684 | 0.784 | 0.142 | 0.532 | 0.018** | 0.223 | 0.640 |

*Notes*: This table presents coefficients from two-way fixed effects regressions for heterogeneity analysis by school indicator. Standard errors clustered at the individual level are shown in parentheses below the coefficients. The 'Treatment × Post (School = 0)' row shows the estimated DiD effect for individuals where the school indicator is 0. The 'Treatment × Post × School' row shows the additional effect of the treatment for individuals where the school indicator is 1 (i.e., the heterogeneity effect). **p (Het. effect)** is the p-value for the heterogeneity effect. **p (Total effect, School = 1)** is the p-value for the combined effect of treatment and post for individuals with school indicator = 1. **p (Total effect, School = 0)** is the p-value for the combined effect of treatment and post for individuals with school indicator = 0. Dependent variables are standardized. Full descriptions: (1) Finish school (2) Further education (3) Knowledge green/sustainability (4) Good at tech (5) Know green jobs (6) Know digital jobs (7) Reduce environmental impact (8) Use computer skills (9) Relative interest green & digital (10) Like going to school (11) Satisfaction (PCA) (12) Self-confidence (PCA) * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

**Table A12:** Heterogeneity Analysis: Main Outcomes (Heterogeneity by Female Gender)

| | Dependent Variable | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Coefficient** | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| Treatment × Post (Female = 0) | −0.136 | 0.104 | 0.562 | −0.330 | 0.630 | 0.245 | 0.129 | −0.303 | −0.201 | −0.400 | −0.120 | 0.243 |
| | (0.200) | (0.304) | (0.356) | (0.311) | (0.388) | (0.352) | (0.360) | (0.310) | (0.195) | (0.271) | (0.268) | (0.313) |
| Treatment × Post × Female | −0.241 | 0.012 | −0.584 | 0.054 | −1.003** | −0.921** | −0.128 | −0.141 | −0.134 | 0.035 | −0.399 | −0.984** |
| | (0.387) | (0.388) | (0.454) | (0.400) | (0.461) | (0.438) | (0.469) | (0.400) | (0.316) | (0.355) | (0.366) | (0.462) |
| N | 369 | 369 | 362 | 362 | 362 | 362 | 362 | 362 | 376 | 372 | 372 | 369 |
| N_groups | 159 | 159 | 157 | 157 | 157 | 157 | 157 | 157 | 161 | 160 | 160 | 159 |
| N_clusters | 159 | 159 | 157 | 157 | 157 | 157 | 157 | 157 | 161 | 160 | 160 | 159 |
| $R^2$ (within) | 0.032 | 0.021 | 0.019 | 0.020 | 0.045 | 0.036 | 0.002 | 0.024 | 0.029 | 0.026 | 0.068 | 0.046 |
| $R^2$ (between) | 0.000 | 0.000 | 0.002 | 0.001 | 0.001 | 0.005 | 0.011 | 0.032 | 0.004 | 0.006 | 0.000 | 0.003 |
| $R^2$ (overall) | 0.002 | 0.000 | 0.011 | 0.001 | 0.015 | 0.021 | 0.007 | 0.020 | 0.000 | 0.000 | 0.017 | 0.006 |
| $\sigma_e$ | 0.748 | 0.690 | 0.814 | 0.688 | 0.808 | 0.785 | 0.766 | 0.714 | 0.704 | 0.730 | 0.723 | 0.793 |
| $\sigma_u$ | 0.898 | 0.888 | 0.804 | 0.873 | 0.843 | 0.837 | 0.825 | 0.861 | 0.871 | 0.882 | 0.877 | 0.829 |
| $p$ (Het. effect) | 0.535 | 0.976 | 0.200 | 0.893 | 0.031** | 0.037** | 0.785 | 0.725 | 0.672 | 0.921 | 0.277 | 0.035** |
| $p$ (Total effect, Female = 1) | 0.257 | 0.630 | 0.938 | 0.275 | 0.138 | 0.011** | 0.998 | 0.082* | 0.180 | 0.113 | 0.038** | 0.031** |
| $p$ (Total effect, Female = 0) | 0.496 | 0.732 | 0.116 | 0.290 | 0.106 | 0.487 | 0.720 | 0.330 | 0.304 | 0.142 | 0.654 | 0.439 |

*Notes*: This table presents coefficients from two-way fixed effects regressions for heterogeneity analysis by female gender. Standard errors clustered at the individual level are shown in parentheses below the coefficients. The 'Treatment × Post (Female = 0)' row shows the estimated DiD effect for male individuals. The 'Treatment × Post × Female' row shows the additional effect of the treatment for female individuals (i.e., the heterogeneity effect). **p (Het. effect)** is the p-value for the heterogeneity effect. **p (Total effect, Female = 1)** is the p-value for the combined effect of treatment and post for female individuals. **p (Total effect, Female = 0)** is the p-value for the combined effect of treatment and post for male individuals. Dependent variables are standardized. Full descriptions: (1) Finish school (2) Further education (3) Knowledge green/sustainability (4) Good at tech (5) Know green jobs (6) Know digital jobs (7) Reduce environmental impact (8) Use computer skills (9) Relative interest green & digital (10) Like going to school (11) Satisfaction (PCA) (12) Self-confidence (PCA) * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

**Table A13:** Heterogeneity Analysis: Main Outcomes (Heterogeneity by Socioeconomic Status)

| | **Dependent Variable** | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Coefficient** | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| Treatment × Post (SES = 0) | −0.115 | 0.142 | 0.229 | −0.358 | 0.143 | −0.267 | −0.036 | −0.406** | −0.288 | −0.348 | −0.266 | −0.065 |
| | (0.229) | (0.241) | (0.268) | (0.220) | (0.279) | (0.254) | (0.264) | (0.199) | (0.184) | (0.226) | (0.212) | (0.268) |
| Treatment × Post × SES | −0.592 | −0.197 | 0.227 | 0.203 | −0.026 | 0.194 | 0.484 | 0.149 | 0.091 | −0.166 | −0.250 | −0.755 |
| | (0.420) | (0.378) | (0.470) | (0.515) | (0.524) | (0.560) | (0.514) | (0.561) | (0.356) | (0.355) | (0.449) | (0.572) |
| N | 369 | 369 | 362 | 362 | 362 | 362 | 362 | 362 | 376 | 372 | 372 | 369 |
| N_groups | 159 | 159 | 157 | 157 | 157 | 157 | 157 | 157 | 161 | 160 | 160 | 159 |
| N_clusters | 159 | 159 | 157 | 157 | 157 | 157 | 157 | 157 | 161 | 160 | 160 | 159 |
| $R^2$ (within) | 0.018 | 0.014 | 0.027 | 0.019 | 0.028 | 0.008 | 0.025 | 0.026 | 0.012 | 0.022 | 0.051 | 0.030 |
| $R^2$ (between) | 0.000 | 0.017 | 0.006 | 0.000 | 0.000 | 0.002 | 0.002 | 0.024 | 0.005 | 0.015 | 0.004 | 0.004 |
| $R^2$ (overall) | 0.003 | 0.010 | 0.015 | 0.001 | 0.017 | 0.000 | 0.002 | 0.016 | 0.000 | 0.001 | 0.004 | 0.004 |
| $\sigma_e$ | 0.753 | 0.693 | 0.811 | 0.688 | 0.815 | 0.796 | 0.757 | 0.714 | 0.710 | 0.732 | 0.729 | 0.800 |
| $\sigma_u$ | 0.894 | 0.879 | 0.801 | 0.871 | 0.841 | 0.843 | 0.835 | 0.863 | 0.870 | 0.882 | 0.882 | 0.827 |
| $p$ (Het. effect) | 0.161 | 0.602 | 0.630 | 0.695 | 0.961 | 0.729 | 0.348 | 0.791 | 0.799 | 0.640 | 0.578 | 0.188 |
| $p$ (Total effect, SES = 1) | 0.046** | 0.850 | 0.240 | 0.739 | 0.791 | 0.884 | 0.311 | 0.625 | 0.519 | 0.063* | 0.195 | 0.106 |
| $p$ (Total effect, SES = 0) | 0.617 | 0.555 | 0.394 | 0.106 | 0.608 | 0.296 | 0.893 | 0.043** | 0.121 | 0.125 | 0.210 | 0.809 |

*Notes*: This table presents coefficients from two-way fixed effects regressions for heterogeneity analysis by socioeconomic status. Socioeconomic status (SES) is an indicator variable where SES=1 represents higher socioeconomic status (defined by 'moneysituation == 1 ownroom == 1 vacations == 1') and SES=0 represents lower socioeconomic status. Standard errors clustered at the individual level are shown in parentheses below the coefficients. The 'Treatment × Post (SES = 0)' row shows the estimated DiD effect for individuals with lower socioeconomic status. The 'Treatment × Post × SES' row shows the additional effect of the treatment for individuals with higher socioeconomic status (i.e., the heterogeneity effect). **p (Het. effect)** is the p-value for the heterogeneity effect. **p (Total effect, SES = 1)** is the p-value for the combined effect of treatment and post for individuals with higher socioeconomic status. **p (Total effect, SES = 0)** is the p-value for the combined effect of treatment and post for individuals with lower socioeconomic status. Dependent variables are standardized. Full descriptions: (1) Finish school (2) Further education (3) Knowledge green/sustainability (4) Good at tech (5) Know green jobs (6) Know digital jobs (7) Reduce environmental impact (8) Use computer skills (9) Relative interest green & digital (10) Like going to school (11) Satisfaction (PCA) (12) Self-confidence (PCA) * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

**Table A14:** OLS Regressions Predicting Survey Dropout

| Dependent Variable: Dropout | | | |
|---|---|---|---|
| **Model (1): Demographics** | | | |
| Female | 0.050 | Father Self-Employed | 0.015 |
| | (0.066) | | (0.108) |
| Age | −0.032 | Father Not Working | 0.201 |
| | (0.037) | | (0.151) |
| Born in Italy | 0.121 | Father Retired | 0.186 |
| | (0.165) | | (0.138) |
| Born in Piemont Region | −0.382*** | Mother Employed | 0.087 |
| | (0.125) | | (0.091) |
| Father Born in Italy | 0.244** | Mother Self-Employed | 0.287** |
| | (0.110) | | (0.136) |
| Mother Born in Italy | −0.171 | Mother Not Working | 0.229* |
| | (0.114) | | (0.128) |
| Father Has University Edu. | 0.091 | Mother Retired | 0.065 |
| | (0.092) | | (0.134) |
| Mother Has University Edu. | −0.150** | School in Project | 0.197*** |
| | (0.070) | | (0.073) |
| Father Employed | 0.128 | | |
| | (0.097) | | |
| **Model (2): Baseline Outcomes** | | | |
| Likelihood to Finish School | −0.080* | Reduces Environmental Impact | −0.003 |
| | (0.042) | | (0.040) |
| Likelihood for Further Edu. | 0.034 | Uses Computer Skills | −0.055 |
| | (0.035) | | (0.041) |
| Knowledge of Green/Sust. | −0.043 | Relative Interest Green & Digital | 0.023 |
| | (0.042) | | (0.041) |
| Good at Tech | 0.007 | Likes Going to School | 0.006 |
| | (0.042) | | (0.044) |
| Knowledge of Green Jobs | 0.108** | Satisfaction (PCA) | −0.043 |
| | (0.043) | | (0.051) |
| Knowledge of Digital Jobs | −0.067 | Self-Confidence (PCA) | 0.016 |
| | (0.045) | | (0.041) |
| **Model Statistics** | **(1)** | | **(2)** |
| Observations | 155 | | 155 |
| R-squared | 0.294 | | 0.116 |
| Adjusted R-squared | 0.207 | | 0.042 |
| F-statistic | 8.09 | | 1.561 |
| p-value (F-test) | $< 0.001$ | | 0.110 |

*Notes*: This table presents coefficients from OLS regressions where the dependent variable is an indicator for dropping out of the survey in the third round (equal to 1 for 45 out of 161 individual observations). Model (1) includes demographic characteristics. Model (2) includes baseline outcome variables. Heteroskedasticity-robust standard errors are in parentheses.
* p<0.10, ** p<0.05, *** p<0.01.

## A1.2 Insights from the Teachers' and Educators' Survey

The following tables present key statistics from the surveys conducted among teachers and educators in the RAISE-UP project. Table A15 details participant characteristics by professional role. Subsequent tables provide round-over-round summary statistics and t-test results for various perceptions related to co-teaching, digital skills, and green skills.

Overall, survey responses generally indicate improved perceptions, particularly in areas concerning digital and green skills familiarity and preparedness from Round 1 to Round 3. Co-teaching confidence and perceived benefits showed hardly positive trends over the rounds. Finally, Table A25 summarizes the program evaluation feedback, contrasting responses between teachers and educators for Round 3.

**Table A15:** Teachers and Educators' Characteristics by Professional Role

| **Variable** | **Teachers** (N=28) | **Educators** (N=10) | **Overall** (N=38) | **p-value** |
|---|---|---|---|---|
| Female | 0.679 | 0.600 | 0.658 | 0.663 |
| | (0.476) | (0.516) | (0.481) | |
| Age (Year of Birth) | 1980.964 | 1989.800 | 1983.289 | 0.024 |
| | (10.875) | (7.657) | (10.775) | |
| Born in Italy | 1.000 | 0.900 | 0.974 | 0.095 |
| | (0.000) | (0.316) | (0.162) | |
| Born in Piedmont Region | 0.571 | 0.300 | 0.500 | 0.148 |
| | (0.504) | (0.483) | (0.507) | |
| Parents Born in Italy | 0.964 | 0.800 | 0.921 | 0.103 |
| | (0.189) | (0.422) | (0.273) | |
| Master's or Higher Degree | 0.857 | 0.500 | 0.763 | 0.022 |
| | (0.356) | (0.527) | (0.431) | |
| Experience Above 10 Years | 0.357 | 0.100 | 0.289 | 0.131 |
| | (0.488) | (0.316) | (0.460) | |
| Weekly Hours Worked | 21.429 | 39.100 | 26.079 | $< 0.001$ |
| | (7.623) | (1.912) | (10.270) | |

*Notes*: The table displays means with standard deviations in parentheses on the subsequent line. The "Teachers" column includes $N = 28$ observations, and the "Educators" column includes $N = 10$ observations, for a total sample size of $N = 38$. The p-value in the last column is derived from a t-test for equality of means between the Teacher and Educator groups.

**Table A16:** Summary Statistics for Co-teaching Perceptions Across Rounds

| **Variable** | T1 | T2 | T3 | E1 | E2 | E3 | O1 | O2 | O3 |
|---|---|---|---|---|---|---|---|---|---|
| Years Co-teaching | 7.312 | 5.765 | 7.421 | 5.333 | 4.600 | 5.222 | 6.773 | 5.333 | 6.714 |
| | (8.340) | (6.408) | (8.701) | (4.590) | (3.718) | (3.993) | (7.451) | (5.512) | (7.502) |
| Familiarity Co-teach | 5.375 | 4.176 | 4.842 | 6.000 | 5.500 | 5.889 | 5.545 | 4.667 | 5.179 |
| | (2.247) | (2.038) | (2.035) | (1.095) | (1.650) | (0.928) | (1.993) | (1.981) | (1.806) |
| Conf. w/ Other Co-teach | 5.125 | 4.353 | 5.263 | 5.667 | 5.700 | 5.444 | 5.273 | 4.852 | 5.321 |
| | (1.746) | (1.320) | (1.485) | (0.516) | (0.483) | (0.527) | (1.518) | (1.262) | (1.249) |
| Improves Learning | 5.375 | 4.765 | 5.368 | 5.667 | 6.200 | 5.778 | 5.455 | 5.296 | 5.500 |
| | (1.258) | (1.300) | (1.342) | (1.506) | (0.789) | (1.202) | (1.299) | (1.325) | (1.291) |
| Fosters Collaboration | 5.938 | 4.882 | 5.474 | 6.500 | 6.300 | 6.111 | 6.091 | 5.407 | 5.679 |
| | (1.063) | (1.166) | (1.389) | (0.548) | (0.675) | (0.782) | (0.971) | (1.217) | (1.249) |
| Not Justified | 2.688 | 2.941 | 3.158 | 2.000 | 1.900 | 1.667 | 2.500 | 2.556 | 2.679 |
| | (2.024) | (1.600) | (1.893) | (1.265) | (0.738) | (0.500) | (1.845) | (1.423) | (1.722) |
| Unclear Roles | 2.750 | 3.353 | 3.211 | 3.167 | 2.000 | 2.778 | 2.864 | 2.852 | 3.071 |
| | (1.732) | (1.169) | (1.903) | (0.753) | (0.943) | (1.093) | (1.521) | (1.262) | (1.676) |
| N | 16 | 17 | 19 | 6 | 10 | 9 | 22 | 27 | 28 |

*Notes*: The table displays means with standard deviations in parentheses on the subsequent line. Column headers T1, T2, T3 refer to Teachers in rounds 1, 2, and 3, respectively. E1, E2, E3 refer to Educators in rounds 1, 2, and 3, respectively. O1, O2, O3 refer to the Overall sample in rounds 1, 2, and 3, respectively. Variable definitions: **Years Co-teaching**: How many years of experience do you have with co-teaching?" **Familiarity Co-teach**: How frequently do you engage in co-teaching?" **Conf. w/ Other Co-teach**: Refers to confidence in co-teaching. For educators: I feel confident in my ability to co-teach with a teacher effectively." For teachers: I feel confident in my ability to co-teach with a professional with a different background (e.g. professional educator, industry expert) effectively." **Improves Learning**: Co-teaching improves students' learning outcomes." **Fosters Collaboration**: Co-teaching fosters collaboration among teachers and professionals." **Not Justified**: Time spent on co-teaching is not justified; resources could be better allocated." **Unclear Roles**: Co-teaching results in unclear roles and responsibilities between instructors." Sample sizes ($N$) for each group and survey round are shown in the last row, based on the first variable listed. Exact $N$ may vary slightly across outcomes due to item non-response.

**Table A17:** T-tests of Round-over-Round Differences for Co-teaching Perceptions

| **Variable** | T: R2-R1 | E: R2-R1 | T: R3-R1 | E: R3-R1 | T: R3-R2 | E: R3-R2 | O: R2-R1 | O: R3-R1 | O: R3-R2 |
|---|---|---|---|---|---|---|---|---|---|
| Years Co-teaching | −1.548 | −0.733 | 0.109 | −0.111 | 1.656 | 1.656 | −1.439 | −0.058 | 1.381 |
| | (0.556) | (0.748) | (0.970) | (0.962) | (0.517) | (0.517) | (0.456) | (0.978) | (0.439) |
| Familiarity Co-teach | −1.199 | −0.500 | −0.533 | −0.111 | 0.666 | 0.666 | −0.879 | −0.367 | 0.512 |
| | (0.120) | (0.479) | (0.471) | (0.842) | (0.335) | (0.335) | (0.131) | (0.505) | (0.322) |
| Conf. w/ Other Co-teach | −0.772 | 0.033 | 0.138 | −0.222 | 0.910* | 0.910* | −0.421 | 0.049 | 0.470 |
| | (0.165) | (0.901) | (0.805) | (0.435) | (0.060) | (0.060) | (0.304) | (0.904) | (0.171) |
| Improves Learning | −0.610 | 0.533 | −0.007 | 0.111 | 0.604 | 0.604 | −0.158 | 0.045 | 0.204 |
| | (0.181) | (0.449) | (0.988) | (0.883) | (0.180) | (0.180) | (0.676) | (0.903) | (0.566) |
| Fosters Collaboration | −1.055** | −0.200 | −0.464 | −0.389 | 0.591 | 0.591 | −0.684** | −0.412 | 0.271 |
| | (0.011) | (0.529) | (0.272) | (0.278) | (0.174) | (0.174) | (0.034) | (0.195) | (0.418) |
| Not Justified | 0.254 | −0.100 | 0.470 | −0.333 | 0.217 | 0.217 | 0.056 | 0.179 | 0.123 |
| | (0.694) | (0.865) | (0.486) | (0.561) | (0.712) | (0.712) | (0.908) | (0.728) | (0.774) |
| Unclear Roles | 0.603 | −1.167** | 0.461 | −0.389 | −0.142 | −0.142 | −0.012 | 0.208 | 0.220 |
| | (0.255) | (0.018) | (0.459) | (0.429) | (0.786) | (0.786) | (0.977) | (0.649) | (0.585) |
| N | 33 | 16 | 35 | 15 | 36 | 36 | 49 | 50 | 55 |

*Notes*: The table displays coefficients of the t-test for round-over-round differences, with p-values in parentheses on the subsequent line. Column headers specify the groups (T=Teachers, E=Educators, O=Overall) and the comparison rounds (e.g., R2-R1 means Round 2 minus Round 1). Variable definitions: **Years Co-teaching**: "How many years of experience do you have with co-teaching?" **Familiarity Co-teach**: "How frequently do you engage in co-teaching?" **Conf. w/ Other Co-teach**: Refers to confidence in co-teaching. For educators: "I feel confident in my ability to co-teach with a teacher effectively." For teachers: "I feel confident in my ability to co-teach with a professional with a different background (e.g. professional educator, industry expert) effectively." **Improves Learning**: "Co-teaching improves students' learning outcomes." **Fosters Collaboration**: "Co-teaching fosters collaboration among teachers and professionals." **Not Justified**: "Time spent on co-teaching is not justified; resources could be better allocated." **Unclear Roles**: "Co-teaching results in unclear roles and responsibilities between instructors." Sample sizes ($N$) for each group and survey round are shown in the last row, based on the first variable listed. Exact $N$ may vary slightly across outcomes due to item non-response. $^{*}$ $p < 0.10$, $^{**}$ $p < 0.05$, $^{***}$ $p < 0.01$.

**Table A18:** Summary Statistics for Digital Perceptions Across Rounds

| **Variable** | T1 | T2 | T3 | E1 | E2 | E3 | O1 | O2 | O3 |
|---|---|---|---|---|---|---|---|---|---|
| Familiarity Digital | 4.562 | 5.059 | 5.421 | 5.500 | 5.200 | 5.333 | 4.818 | 5.111 | 5.393 |
| | (0.964) | (1.345) | (0.961) | (1.049) | (1.398) | (1.118) | (1.053) | (1.340) | (0.994) |
| Willingness to Integrate | 5.812 | 5.059 | 5.737 | 6.000 | 6.300 | 5.667 | 5.864 | 5.519 | 5.714 |
| | (1.047) | (1.088) | (0.806) | (0.632) | (0.823) | (0.707) | (0.941) | (1.156) | (0.763) |
| Digital Makes Effective | 5.438 | 4.941 | 4.895 | 4.667 | 5.600 | 5.556 | 5.227 | 5.185 | 5.107 |
| | (0.964) | (0.748) | (1.100) | (0.816) | (0.699) | (0.527) | (0.973) | (0.786) | (0.994) |
| Enjoy Digital | 4.688 | 4.706 | 5.211 | 6.167 | 5.500 | 5.556 | 5.091 | 5.000 | 5.321 |
| | (0.873) | (0.985) | (1.182) | (0.983) | (1.080) | (1.130) | (1.109) | (1.074) | (1.156) |
| Digital Disrupts | 2.875 | 3.176 | 3.105 | 2.333 | 2.600 | 2.556 | 2.727 | 2.963 | 2.929 |
| | (1.408) | (1.334) | (1.663) | (1.033) | (1.265) | (1.014) | (1.316) | (1.315) | (1.489) |
| Digital Skills Strong | 3.625 | 4.059 | 4.474 | 5.333 | 4.700 | 4.889 | 4.091 | 4.296 | 4.607 |
| | (1.204) | (0.899) | (1.172) | (0.816) | (1.947) | (1.537) | (1.342) | (1.382) | (1.286) |
| Digital Career Prospect | 2.062 | 2.647 | 2.842 | 2.000 | 1.900 | 2.111 | 2.045 | 2.370 | 2.607 |
| | (1.063) | (1.412) | (1.772) | (0.632) | (1.449) | (1.616) | (0.950) | (1.445) | (1.729) |
| Skills Beneficial | 4.000 | 4.176 | 5.316 | 4.833 | 4.500 | 4.778 | 4.227 | 4.296 | 5.143 |
| | (1.095) | (1.425) | (1.108) | (0.983) | (1.080) | (0.833) | (1.110) | (1.295) | (1.044) |
| N | 16 | 17 | 19 | 6 | 10 | 9 | 22 | 27 | 28 |

*Notes*: The table displays means with standard deviations in parentheses on the subsequent line. Column headers T1, T2, T3 refer to Teachers in rounds 1, 2, and 3, respectively. E1, E2, E3 refer to Educators in rounds 1, 2, and 3, respectively. O1, O2, O3 refer to the Overall sample in rounds 1, 2, and 3, respectively. All variables, except "Familiarity Digital", are measured on a 7-point Likert scale from "1 Strongly disagree" to "7 Strongly agree". "Familiarity Digital" is measured on a 7-point Likert scale from "1 Not at all" to "7 Very familiar". Variable definitions: **Familiarity Digital**: "How familiar are you with digital tools and technologies?" **Willingness to Integrate**: "I am willing to integrate more digital technologies into my educational activities." **Digital Makes Effective**: "Digital technologies make teaching more effective." **Enjoy Digital**: "I enjoy using digital technologies in my educational activities." **Digital Disrupts**: "Incorporation of digital tools in the classroom disrupts the learning environment." **Digital Skills Strong**: "I would describe my digital skills as strong." **Digital Career Prospect**: "Digital skills don't have a real career prospect." **Skills Beneficial**: "I am aware of which digital skills can be useful for the students' professional future." Sample sizes ($N$) for each group and survey round are shown in the last row, based on the first variable listed. Exact $N$ may vary slightly across outcomes due to item non-response.

**Table A19:** T-tests of Round-over-Round Differences for Digital Perceptions

| **Variable** | T: R2-R1 | E: R2-R1 | T: R3-R1 | E: R3-R1 | T: R3-R2 | E: R3-R2 | O: R2-R1 | O: R3-R1 | O: R3-R2 |
|---|---|---|---|---|---|---|---|---|---|
| Familiarity Digital | 0.496 | −0.300 | 0.859** | −0.167 | 0.362 | 0.362 | 0.293 | 0.575* | 0.282 |
| | (0.231) | (0.634) | (0.013) | (0.774) | (0.365) | (0.365) | (0.396) | (0.056) | (0.382) |
| Willingness to Integrate | −0.754* | 0.300 | −0.076 | −0.333 | 0.678** | 0.678** | −0.345 | −0.149 | 0.196 |
| | (0.051) | (0.428) | (0.815) | (0.360) | (0.044) | (0.044) | (0.255) | (0.549) | (0.464) |
| Digital Makes Effective | −0.496 | 0.933** | −0.543 | 0.889** | −0.046 | −0.046 | −0.042 | −0.120 | −0.078 |
| | (0.111) | (0.043) | (0.129) | (0.047) | (0.882) | (0.882) | (0.871) | (0.670) | (0.748) |
| Enjoy Digital | 0.018 | −0.667 | 0.523 | −0.611 | 0.505 | 0.505 | −0.091 | 0.231 | 0.321 |
| | (0.955) | (0.231) | (0.143) | (0.289) | (0.172) | (0.172) | (0.774) | (0.478) | (0.290) |
| Digital Disrupts | 0.301 | 0.267 | 0.230 | 0.222 | −0.071 | −0.071 | 0.236 | 0.201 | −0.034 |
| | (0.533) | (0.654) | (0.660) | (0.689) | (0.888) | (0.888) | (0.536) | (0.615) | (0.928) |
| Digital Skills Strong | 0.434 | −0.633 | 0.849** | −0.444 | 0.415 | 0.415 | 0.205 | 0.516 | 0.311 |
| | (0.253) | (0.382) | (0.044) | (0.480) | (0.239) | (0.239) | (0.602) | (0.176) | (0.392) |
| Digital Career Prospect | 0.585 | −0.100 | 0.780 | 0.111 | 0.195 | 0.195 | 0.325 | 0.562 | 0.237 |
| | (0.188) | (0.852) | (0.119) | (0.856) | (0.716) | (0.716) | (0.350) | (0.151) | (0.583) |
| Skills Beneficial | 0.176 | −0.333 | 1.316*** | −0.056 | 1.139** | 1.139** | 0.069 | 0.916*** | 0.847** |
| | (0.692) | (0.539) | (0.001) | (0.912) | (0.013) | (0.013) | (0.842) | (0.005) | (0.010) |
| N | 33 | 16 | 35 | 15 | 36 | 36 | 49 | 50 | 55 |

*Notes*: The table displays coefficients of the t-test for round-over-round differences, with p-values in parentheses on the subsequent line. Column headers specify the groups (T=Teachers, E=Educators, O=Overall) and the comparison rounds (e.g., R2-R1 means Round 2 minus Round 1). Variables for "Familiarity Digital" are measured on a 7-point Likert scale from "1 Not at all" to "7 Very familiar". All other variables are measured on a 7-point Likert scale from "1 Strongly disagree" to "7 Strongly agree". Variable definitions: **Familiarity Digital**: "How familiar are you with digital tools and technologies?" **Willingness to Integrate**: "I am willing to integrate more digital technologies into my educational activities." **Digital Makes Effective**: "Digital technologies make teaching more effective." **Enjoy Digital**: "I enjoy using digital technologies in my educational activities." **Digital Disrupts**: "Incorporation of digital tools in the classroom disrupts the learning environment." **Digital Skills Strong**: "I would describe my digital skills as strong." **Digital Career Prospect**: "Digital skills don't have a real career prospect." **Skills Beneficial**: "I am aware of which digital skills can be useful for the students' professional future." Sample sizes ($N$) for each group and survey round are shown in the last row, based on the first variable listed. Exact $N$ may vary slightly across outcomes due to item non-response. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

**Table A20:** Summary Statistics for Green Skills Perceptions Across Rounds

| **Variable** | T1 | T2 | T3 | E1 | E2 | E3 | O1 | O2 | O3 |
|---|---|---|---|---|---|---|---|---|---|
| Familiarity Green | 3.875 | 3.647 | 5.105 | 3.833 | 3.300 | 4.000 | 3.864 | 3.519 | 4.750 |
| | (1.258) | (1.579) | (1.595) | (0.408) | (0.823) | (0.500) | (1.082) | (1.341) | (1.430) |
| Willingness Green Integrate | 6.062 | 5.059 | 5.579 | 5.500 | 5.500 | 5.111 | 5.909 | 5.222 | 5.429 |
| | (0.929) | (1.345) | (1.261) | (0.837) | (1.269) | (1.054) | (0.921) | (1.311) | (1.200) |
| Improves Green Awareness | 5.812 | 5.412 | 5.842 | 5.333 | 5.600 | 4.778 | 5.682 | 5.481 | 5.500 |
| | (1.167) | (1.121) | (1.259) | (0.816) | (0.843) | (0.972) | (1.086) | (1.014) | (1.262) |
| Enjoy Green | 5.125 | 4.647 | 5.579 | 5.000 | 4.000 | 4.667 | 5.091 | 4.407 | 5.286 |
| | (1.784) | (1.539) | (1.121) | (0.632) | (1.563) | (0.707) | (1.540) | (1.551) | (1.084) |
| Green Skills Strong | 3.562 | 3.588 | 4.474 | 3.833 | 2.700 | 3.667 | 3.636 | 3.259 | 4.214 |
| | (1.031) | (1.460) | (1.611) | (0.408) | (1.160) | (1.000) | (0.902) | (1.403) | (1.475) |
| Green Career Prospect | 1.812 | 2.941 | 2.737 | 3.333 | 3.800 | 3.333 | 2.227 | 3.259 | 2.929 |
| | (1.047) | (1.249) | (1.485) | (0.516) | (1.135) | (1.323) | (1.152) | (1.259) | (1.438) |
| Green Skills Beneficial | 3.500 | 3.294 | 4.895 | 3.167 | 2.500 | 3.111 | 3.409 | 3.000 | 4.321 |
| | (1.366) | (1.047) | (0.994) | (0.753) | (0.850) | (0.928) | (1.221) | (1.038) | (1.278) |
| N | 16 | 17 | 19 | 6 | 10 | 9 | 22 | 27 | 28 |

*Notes*: The table displays means with standard deviations in parentheses on the subsequent line. Column headers T1, T2, T3 refer to Teachers in rounds 1, 2, and 3, respectively. E1, E2, E3 refer to Educators in rounds 1, 2, and 3, respectively. O1, O2, O3 refer to the Overall sample in rounds 1, 2, and 3, respectively. All variables are measured on a 7-point Likert scale. "Familiarity Green" is from "1 Not at all" to "7 Very familiar". All other variables are from "1 Strongly disagree" to "7 Strongly agree". Variable definitions: **Familiarity Green**: "How familiar are you with green skills?" **Willingness Green Integrate**: "I am willing to integrate more green skills into my educational activities." **Improves Green Awareness**: "Integrating green skills into education improves student awareness of environmental issues." **Enjoy Green**: "I like to transfer my knowledge related to green skills and sustainability." **Green Skills Strong**: "I would describe my knowledge and understanding of green skills and the concept of sustainability as strong." **Green Career Prospect**: "Green skills don't have a real career prospect." **Green Skills Beneficial**: "I am aware of which green skills can be useful for the students' professional future." Sample sizes ($N$) for each group and survey round are shown in the last row, based on the first variable listed. Exact $N$ may vary slightly across outcomes due to item non-response.

**Table A21:** T-tests of Round-over-Round Differences for Green Skills Perceptions

| **Variable** | T: R2-R1 | E: R2-R1 | T: R3-R1 | E: R3-R1 | T: R3-R2 | E: R3-R2 | O: R2-R1 | O: R3-R1 | O: R3-R2 |
|---|---|---|---|---|---|---|---|---|---|
| Familiarity Green | −0.228 | −0.533 | 1.230** | 0.167 | 1.458*** | 1.458*** | −0.345 | 0.886** | 1.231*** |
| | (0.649) | (0.107) | (0.016) | (0.493) | (0.009) | (0.009) | (0.324) | (0.016) | (0.002) |
| Willingness Green Integrate | −1.004** | 0.000 | −0.484 | −0.389 | 0.520 | 0.520 | −0.687** | −0.481 | 0.206 |
| | (0.018) | (1.000) | (0.202) | (0.442) | (0.241) | (0.241) | (0.037) | (0.116) | (0.546) |
| Improves Green Awareness | −0.401 | 0.267 | 0.030 | −0.556 | 0.430 | 0.430 | −0.200 | −0.182 | 0.019 |
| | (0.323) | (0.545) | (0.943) | (0.255) | (0.286) | (0.286) | (0.512) | (0.587) | (0.952) |
| Enjoy Green | −0.478 | −1.000* | 0.454 | −0.333 | 0.932** | 0.932** | −0.684 | 0.195 | 0.878** |
| | (0.418) | (0.097) | (0.387) | (0.360) | (0.049) | (0.049) | (0.130) | (0.618) | (0.019) |
| Green Skills Strong | 0.026 | −1.133** | 0.911* | −0.167 | 0.885* | 0.885* | −0.377 | 0.578* | 0.955** |
| | (0.954) | (0.015) | (0.052) | (0.663) | (0.093) | (0.093) | (0.261) | (0.095) | (0.017) |
| Green Career Prospect | 1.129*** | 0.467 | 0.924** | 0.000 | −0.204 | −0.204 | 1.032*** | 0.701* | −0.331 |
| | (0.008) | (0.282) | (0.039) | (1.000) | (0.657) | (0.657) | (0.004) | (0.062) | (0.368) |
| Green Skills Beneficial | −0.206 | −0.667 | 1.395*** | −0.056 | 1.601*** | 1.601*** | −0.409 | 0.912** | 1.321*** |
| | (0.632) | (0.129) | (0.002) | (0.901) | (0.000) | (0.000) | (0.220) | (0.014) | (0.000) |
| N | 33 | 16 | 35 | 15 | 36 | 36 | 49 | 50 | 55 |

*Notes*: The table displays coefficients of the t-test for round-over-round differences, with p-values in parentheses on the subsequent line. Column headers specify the groups (T=Teachers, E=Educators, O=Overall) and the comparison rounds (e.g., R2-R1 means Round 2 minus Round 1). Variables for "Familiarity Green" are measured on a 7-point Likert scale from "1 Not at all" to "7 Very familiar". All other variables are measured on a 7-point Likert scale from "1 Strongly disagree" to "7 Strongly agree". Variable definitions: **Familiarity Green**: "How familiar are you with green skills?" **Willingness Green Integrate**: "I am willing to integrate more green skills into my educational activities." **Improves Green Awareness**: "Integrating green skills into education improves student awareness of environmental issues." **Enjoy Green**: "I like to transfer my knowledge related to green skills and sustainability." **Green Skills Strong**: "I would describe my knowledge and understanding of green skills and the concept of sustainability as strong." **Green Career Prospect**: "Green skills don't have a real career prospect." **Green Skills Beneficial**: "I am aware of which green skills can be useful for the students' professional future." * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Sample sizes ($N$) for each group and survey round are shown in the last row, based on the first variable listed. Exact $N$ may vary slightly across outcomes due to item non-response.

**Table A22:** Summary Statistics for Self-Efficacy Perceptions Across Rounds

| **Variable** | T1 | T2 | T3 | E1 | E2 | E3 | O1 | O2 | O3 |
|---|---|---|---|---|---|---|---|---|---|
| Difficult Students | 5.625 | 5.412 | 5.526 | 4.667 | 5.700 | 5.222 | 5.364 | 5.519 | 5.429 |
| | (1.147) | (0.795) | (1.020) | (1.366) | (0.949) | (1.394) | (1.255) | (0.849) | (1.136) |
| Critical Thinking | 5.500 | 5.353 | 6.105 | 6.000 | 6.000 | 6.000 | 5.636 | 5.593 | 6.071 |
| | (1.211) | (0.931) | (1.049) | (1.095) | (0.816) | (1.000) | (1.177) | (0.931) | (1.016) |
| Control Disruptive | 5.812 | 5.176 | 5.368 | 5.167 | 5.800 | 5.667 | 5.636 | 5.407 | 5.464 |
| | (0.981) | (0.883) | (1.165) | (1.329) | (1.033) | (0.866) | (1.093) | (0.971) | (1.071) |
| Motivate Students | 5.500 | 5.471 | 5.526 | 5.333 | 5.900 | 5.778 | 5.455 | 5.630 | 5.607 |
| | (0.894) | (0.800) | (1.264) | (0.816) | (0.876) | (1.394) | (0.858) | (0.839) | (1.286) |
| Establish Routines | 5.000 | 4.706 | 5.053 | 5.333 | 5.500 | 5.333 | 5.091 | 5.000 | 5.143 |
| | (1.592) | (1.047) | (1.224) | (0.816) | (0.850) | (1.000) | (1.411) | (1.038) | (1.145) |
| Gauge Comprehension | 5.500 | 5.235 | 5.474 | 5.167 | 5.800 | 5.444 | 5.409 | 5.444 | 5.464 |
| | (1.033) | (0.903) | (1.429) | (0.408) | (0.789) | (1.130) | (0.908) | (0.892) | (1.319) |
| Adjusting Lessons | 5.875 | 5.118 | 5.632 | 5.833 | 5.700 | 5.778 | 5.864 | 5.333 | 5.679 |
| | (0.885) | (0.781) | (1.012) | (1.169) | (1.059) | (0.972) | (0.941) | (0.920) | (0.983) |
| Assist Families | 5.188 | 5.294 | 5.105 | 4.833 | 5.400 | 5.333 | 5.091 | 5.333 | 5.179 |
| | (1.109) | (1.105) | (1.329) | (1.169) | (0.966) | (1.000) | (1.109) | (1.038) | (1.219) |
| N | 16 | 17 | 19 | 6 | 10 | 9 | 22 | 27 | 28 |

*Notes*: The table displays means with standard deviations in parentheses on the subsequent line. Column headers T1, T2, T3 refer to Teachers in rounds 1, 2, and 3, respectively. E1, E2, E3 refer to Educators in rounds 1, 2, and 3, respectively. O1, O2, O3 refer to the Overall sample in rounds 1, 2, and 3, respectively. All variables are measured on a 7-point Likert scale from "1 Not effective at all" to "7 Very effective". Variable definitions: **Difficult Students**: "How effective you think you are in: Getting through to the most difficult students". **Critical Thinking**: "How effective you think you are in: Helping students to think critically". **Control Disruptive**: "How effective you think you are in: Controlling disruptive behaviour in the classroom". **Motivate Students**: "How effective you think you are in: Motivating students who show low interest in school work". **Establish Routines**: "How effective you think you are in: Establishing routines to keep activities running smoothly". **Gauge Comprehension**: "How effective you think you are in: Gauging student comprehension of what they were taught". **Adjusting Lessons**: "How effective you think you are in: Adjusting your educational activities to the proper level of individual students". **Assist Families**: "How effective you think you are in: Assisting families in helping their children do well in school". Sample sizes ($N$) for each group and survey round are shown in the last row, based on the first variable listed. Exact $N$ may vary slightly across outcomes due to item non-response.

**Table A23:** T-tests of Round-over-Round Differences for Self-Efficacy Perceptions

| **Variable** | T: R2-R1 | E: R2-R1 | T: R3-R1 | E: R3-R1 | T: R3-R2 | E: R3-R2 | O: R2-R1 | O: R3-R1 | O: R3-R2 |
|---|---|---|---|---|---|---|---|---|---|
| Difficult Students | −0.213 | 1.033 | −0.099 | 0.556 | 0.115 | 0.115 | 0.155 | 0.065 | −0.090 |
| | (0.543) | (0.142) | (0.792) | (0.460) | (0.708) | (0.708) | (0.624) | (0.851) | (0.740) |
| Critical Thinking | −0.147 | 0.000 | 0.605 | 0.000 | 0.752** | 0.752** | −0.044 | 0.435 | 0.479* |
| | (0.700) | (1.000) | (0.128) | (1.000) | (0.029) | (0.029) | (0.888) | (0.176) | (0.074) |
| Control Disruptive | −0.636* | 0.633 | −0.444 | 0.500 | 0.192 | 0.192 | −0.229 | −0.172 | 0.057 |
| | (0.060) | (0.344) | (0.230) | (0.440) | (0.579) | (0.579) | (0.448) | (0.580) | (0.837) |
| Motivate Students | −0.029 | 0.567 | 0.026 | 0.444 | 0.056 | 0.056 | 0.175 | 0.153 | −0.022 |
| | (0.922) | (0.217) | (0.943) | (0.451) | (0.874) | (0.874) | (0.477) | (0.618) | (0.939) |
| Establish Routines | −0.294 | 0.167 | 0.053 | 0.000 | 0.347 | 0.347 | −0.091 | 0.052 | 0.143 |
| | (0.539) | (0.705) | (0.915) | (1.000) | (0.366) | (0.366) | (0.803) | (0.889) | (0.630) |
| Gauge Comprehension | −0.265 | 0.633* | −0.026 | 0.278 | 0.238 | 0.238 | 0.035 | 0.055 | 0.020 |
| | (0.441) | (0.053) | (0.950) | (0.514) | (0.550) | (0.550) | (0.892) | (0.862) | (0.948) |
| Adjusting Lessons | −0.757** | −0.133 | −0.243 | −0.056 | 0.514* | 0.514* | −0.530* | −0.185 | 0.345 |
| | (0.014) | (0.824) | (0.453) | (0.925) | (0.096) | (0.096) | (0.054) | (0.502) | (0.184) |
| Assist Families | 0.107 | 0.567 | −0.082 | 0.500 | −0.189 | −0.189 | 0.242 | 0.088 | −0.155 |
| | (0.784) | (0.343) | (0.843) | (0.411) | (0.645) | (0.645) | (0.438) | (0.792) | (0.614) |
| N | 33 | 16 | 35 | 15 | 36 | 36 | 49 | 50 | 55 |

*Notes*: The table displays coefficients of the t-test for round-over-round differences, with $p$-values in parentheses on the subsequent line. Column headers specify the groups (T=Teachers, E=Educators, O=Overall) and the comparison rounds (e.g., R2-R1 means Round 2 minus Round 1). All variables are measured on a 7-point Likert scale from "1 Not effective at all" to "7 Very effective". Variable definitions: **Difficult Students**: "How effective you think you are in: Getting through to the most difficult students". **Critical Thinking**: "How effective you think you are in: Helping students to think critically". **Control Disruptive**: "How effective you think you are in: Controlling disruptive behaviour in the classroom". **Motivate Students**: "How effective you think you are in: Motivating students who show low interest in school work". **Establish Routines**: "How effective you think you are in: Establishing routines to keep activities running smoothly". **Gauge Comprehension**: "How effective you think you are in: Gauging student comprehension of what they were taught". **Adjusting Lessons**: "How effective you think you are in: Adjusting your educational activities to the proper level of individual students". **Assist Families**: "How effective you think you are in: Assisting families in helping their children do well in school". Sample sizes ($N$) for each group and survey round are shown in the last row, based on the first variable listed. Exact $N$ may vary slightly across outcomes due to item non-response. $^{*}$ $p < 0.10$, $^{**}$ $p < 0.05$, $^{***}$ $p < 0.01$.

**Table A24:** Summary Statistics and T-tests for Self-Efficacy and Professional Perceptions (Teachers Only)

| **Variable** | R1 | R2 | R3 | R2-R1 | R3-R1 | R3-R2 |
|---|---|---|---|---|---|---|
| Conf. Co-teach w/ Another | 5.250 | 4.765 | 5.421 | −0.485 | 0.171 | 0.656 |
| | (1.390) | (1.393) | (1.502) | (0.325) | (0.729) | (0.183) |
| Good Relationships | 4.800 | 4.647 | 5.211 | −0.153 | 0.411 | 0.563* |
| | (1.373) | (0.931) | (0.976) | (0.719) | (0.337) | (0.086) |
| Scared of Violence | 1.857 | 1.882 | 2.579 | 0.025 | 0.722 | 0.697 |
| | (1.351) | (1.219) | (2.036) | (0.957) | (0.231) | (0.217) |
| High Workload | 4.812 | 4.294 | 4.947 | −0.518 | 0.135 | 0.653 |
| | (1.642) | (1.829) | (1.957) | (0.398) | (0.826) | (0.308) |
| Students Disrespectful | 5.312 | 5.176 | 4.684 | −0.136 | −0.628 | −0.492 |
| | (1.621) | (1.334) | (1.827) | (0.795) | (0.289) | (0.359) |
| Enjoy Teaching | 6.533 | 6.353 | 6.368 | −0.180 | −0.165 | 0.015 |
| | (0.915) | (0.862) | (0.895) | (0.572) | (0.602) | (0.958) |
| Support At-Risk Students | 5.125 | 4.882 | 5.105 | −0.243 | −0.020 | 0.223 |
| | (1.628) | (1.111) | (1.410) | (0.623) | (0.970) | (0.600) |
| Students Interested | 4.938 | 4.588 | 5.158 | −0.349 | 0.220 | 0.570 |
| | (1.436) | (1.176) | (1.425) | (0.452) | (0.653) | (0.198) |
| Role Model | 5.188 | 5.059 | 5.263 | −0.129 | 0.076 | 0.204 |
| | (1.047) | (0.899) | (0.991) | (0.708) | (0.829) | (0.521) |
| Social Ladder | 6.333 | 5.765 | 6.158 | −0.569 | −0.175 | 0.393 |
| | (1.047) | (1.200) | (0.898) | (0.163) | (0.610) | (0.279) |
| Fulfilling Life | 6.429 | 5.941 | 5.895 | −0.487 | −0.534 | −0.046 |
| | (0.646) | (0.966) | (1.150) | (0.105) | (0.101) | (0.896) |
| Prepared Digital Skills | 3.375 | 3.375 | 3.842 | 0.000 | 0.467 | 0.467 |
| | (1.408) | (1.147) | (1.344) | (1.000) | (0.326) | (0.275) |
| Prepared Green Skills | 2.688 | 2.824 | 3.684 | 0.136 | 0.997* | 0.861* |
| | (1.401) | (1.286) | (1.529) | (0.774) | (0.053) | (0.076) |
| N | 16 | 17 | 19 | 33 | 35 | 36 |

*Notes*: Summary statistics display means with standard deviations in parentheses. T-test results show coefficients with $p$-values in parentheses on the subsequent line. All variables are measured on a 7-point Likert scale from "1 Strongly disagree" to "7 Strongly agree". Variable definitions: **Conf. Co-teach w/ Another**: "I feel confident in my ability to co-teach with a teacher effectively." **Good Relationships**: "There are good relationships between teachers and students." **Scared of Violence**: "Sometimes I'm scared to go to school because there are violent students." **High Workload**: "The workload at my school is too high." **Students Disrespectful**: "Students often respond to teachers in a disrespectful or argumentative manner." **Enjoy Teaching**: "I enjoy working as a teacher." **Support At-Risk Students**: "I feel prepared to identify and support students at risk of dropping out." **Students Interested**: "In general, I believe that students take my teaching seriously and are interested in the topics I teach." **Role Model**: "Overall, I believe that my students like me and see me as a role model." **Social Ladder**: "A strong motivation for me is to offer students opportunities to climb the social ladder through quality education." **Fulfilling Life**: "A strong motivation for me is to enable students to live a fulfilling life in accordance with their personal values and interests through quality education." **Prepared Digital Skills**: "In general, I think my students are well prepared for the current labour market demands regarding digital skills." **Prepared Green Skills**: "In general, I think my students are well prepared for the current labour market demands regarding green skills." Sample sizes ($N$) for each group and survey round are shown in the last row, based on the first variable listed. Exact $N$ may vary slightly across outcomes due to item non-response. $^{*}$ $p < 0.10$, $^{**}$ $p < 0.05$, $^{***}$ $p < 0.01$.

**Table A25:** Program Evaluation: Summary Statistics and T-tests (Round 3)

| Variable | Teachers | | Educators | | Overall | | Diff (T-E) | |
|---|---|---|---|---|---|---|---|---|
| | Mean | SD | Mean | SD | Mean | SD | $b$ | $p$ |
| Overall Quality | 5.263 | 1.195 | 3.556 | 1.667 | 4.714 | 1.560 | 1.708** | (0.017) |
| Content Relevance | 5.526 | 1.219 | 3.889 | 1.269 | 5.000 | 1.440 | 1.637*** | (0.006) |
| Trainer Effectiveness | 5.789 | 1.032 | 4.444 | 1.590 | 5.357 | 1.367 | 1.345** | (0.040) |
| Program Structure | 5.368 | 1.116 | 3.778 | 1.641 | 4.857 | 1.484 | 1.591** | (0.022) |
| Useful Materials | 5.579 | 1.121 | 4.111 | 1.054 | 5.107 | 1.286 | 1.468*** | (0.004) |
| Preparedness | 4.632 | 1.383 | 3.333 | 1.658 | 4.214 | 1.572 | 1.298* | (0.062) |
| Political Bias | 2.895 | 0.459 | 2.889 | 0.782 | 2.893 | 0.567 | 0.006 | (0.984) |
| N | 19 | | 9 | | 28 | | 28 | |

*Notes*: The table displays means and standard deviations (SD) for Teachers ($N = 19$), Educators ($N = 9$), and the Overall sample ($N = 28$) for Round 3. The "Diff (T-E)" column presents coefficients ($b$) from a t-test comparing Teachers and Educators, with $p$-values in parentheses. Agreement with statements is measured on a 7-point Likert scale from "1 Strongly disagree" to "7 Strongly agree". "Political Bias" is measured on a scale from "1 Strongly left-wing biased" to "5 Strongly right-wing biased" where "3" indicates "Unbiased". Variable definitions: **Overall Quality**: "I am satisfied with the overall quality of the training program." **Content Relevance**: "The training content is relevant to my educational responsibilities." **Trainer Effectiveness**: "The trainer(s) effectively delivered the training material." **Program Structure**: "The training program was well-structured and organized." **Useful Materials**: "The training materials and resources provided were useful." **Preparedness**: "The training adequately prepared me to apply what I learned in my educational activities." **Political Bias**: "To what extent do you think the training or its content was politically biased?" Sample sizes ($N$) for each group and survey round are shown in the last row, based on the first variable listed. Exact $N$ may vary slightly across outcomes due to item non-response. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

## A1.3 Students' Survey Questionnaire

The following questionnaire presents the RAISE-UP (posttest) survey. The Italian translation is available upon request. Sections included only in some waves are marked in the questionnaire.

### Raise-Up Survey - Students Posttest

#### Welcome

Dear Student,

This survey aims to explore your feelings about school and your perspective on yourself as a learner. When completing the survey, please be honest in your responses - there are no right or wrong answers and your answers will be analysed anonymously. At the end of the evaluation process, gadgets will be offered to all students who answer the questionnaires. Please select the response that best reflects your thoughts, and be sure to answer all the questions. If you have any questions about the survey, feel free to ask the person administering it.

Thank you for your cooperation!

Best regards, The RAISE-UP project team

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#### Identifier Code

To ensure that your responses remain anonymous, while allowing us to match your answers from different questionnaires, please create a personalised code using the following method:

1. Take the first letter of your first name.
2. Add the first letter of your mother's first name.
3. Add the second letter of your mother's first name.
4. Finally, add the date you were born (in two-digit format).

*Example: If someone's name is John and his mother's name is Maria, and his birthday is on the 7th of February 2010, his personalised code would be JMA07.*

#### 1. In which school do you study?

- Istituto di Istruzione Superiore Giovanni Giolitti - Torino
- Istituto Istruzione Superiore "Galileo Ferraris" - Settimo Torinese

**2. What is your class?** *(This question was displayed based on the school selected in the previous question.)*

- **Options for Istituto di Istruzione Superiore Giovanni Giolitti - Torino:** List of classes
- **Options for Istituto Istruzione Superiore "Galileo Ferraris" - Settimo Torinese:** List of classes

**Satisfaction with School**

**3. Please indicate how much you agree or disagree with each of the following statements. (Scale: 1 = Do not agree at all, 7 = Agree completely)**

- I like going to school.
- Many things we learn in school are useless.
- Homework is not boring.
- I enjoy spending time with my classmates.
- In general, I feel that my studies will be useful for my future education.
- In general, I feel that my studies will be useful for my future professional career.
- I often feel like I'm losing interest in school overall.
- There are students in my class that I can ask for help.
- Overall, the relationships between teachers and students at my school are positive.
- There is at least one student in my school who treats me badly or unfairly.

**Self-Confidence and Self-Regulation**

**4. Please indicate how much you agree or disagree with each of the following statements. (Scale: 1 = Do not agree at all, 7 = Agree completely)**

- I am generally satisfied with my performance as a student.
- I cannot do well in school even if I want to.
- Before starting an assignment, I create a plan for how I am going to complete it.
- I understand what my teachers expect me to learn.

- I do not care about what behaviour is forbidden in school.
- I am usually involved in fights or violent arguments.
- There are people in my life who care about me.
- When doing my homework, I can concentrate easily.

**Time Spent Studying**

**5. On a typical school day, how many hours do you spend studying at home?**

- 0
- 1
- 2
- 3
- 4
- 5 or more

**Future Job Choice**

**6. How sure are you about your future job choice?**

- Not sure at all
- A little sure
- Mostly sure
- Completely sure

**Educational Aspirations**

**7. How likely is it that you will finish school successfully? (Slider from 0 "I will drop out" to 100 "I will definitely finish school")**

**8. How likely are you to go to university or similar after finishing high school? (Slider from 0 "I'm definitely not going to college or university" to 100 "I will definitely go to university or similar")**

**Career Interest**

**9. How interested are you in working in these different careers?** You have 100 points to show how interested you are in different careers. You do not have to use all the careers listed - just give points to the ones you are interested in. If you're only interested in one career, you can give all 100 points to that career. If you're interested in more than one career, divide the points between them. The more points you give to a career, the more interested you are in it.

- **Green sector** [jobs in renewable energy, waste management, environmental conservation, and sustainability]
- **Digital sector** [jobs in technology, such as software development, data analysis, and cybersecurity] (e.g. IT)
- **Tourism, hospitality, gastronomy** [jobs in travel, hotels, restaurants, and related services]
- **Industry, construction, and manufacturing** [jobs in building infrastructure, producing goods, and operating machinery in sectors like construction, automotive, and heavy industry]
- **All other sectors** [covers all jobs not listed in the other categories]

**Factors Important for a Job**

**10. What factors are important to you when considering your future job? Please rate each on a scale from 1 (not important at all) to 7 (very important).**

- A high salary
- A stable job that will last a long time
- Helping to protect the environment
- Helping to develop new technology
- Helping people
- Interest and passion

**Influence on Career Choice**

**11. How much do these external factors/people influence your career choices? Rate each one from 1 to 7, where 1 means "Not at all" and 7 means "A lot."**

- My family
- My friends
- Teachers
- Influencers from social media (TikTok, Instagram, etc.)
- Career advisors
- Career orientation workshops

**Green and Digital Skills**

*Green skills are the knowledge and abilities to protect the environment and fight climate change, supporting jobs and activities that make our world more sustainable.*

*Digital skills are the abilities to use devices like computers and smartphones to for example manage information, create and share content, communicate, and solve problems.*

**12. The following questions ask about your skills and beliefs regarding technology and the environment. Rate each one from 1 to 7, where 1 means "Strongly Disagree" and 7 means "Strongly Agree."**

- I'm good at using computers and technology.
- I know a lot about green topics, sustainability and how to apply them.
- I know about jobs that require digital skills.
- I know about jobs that value green skills and focus on green topics and sustainability.
- I regularly use my computer skills in my schoolwork or hobbies.
- I often take actions to reduce my environmental impact, like recycling or saving energy.

**Matrix Puzzles** *(only included in first wave)*

In the next part, you will solve 4 puzzles.

**Your task is to choose the correct missing piece to complete each pattern. Here's an example where the correct answer is shown in red:**

*Placeholder for example matrix images*

**Matrix 1:**

*Placeholder for Matrix 1 image*

**Choose the piece that logically fits to complete the first matrix.**

- 1
- 2
- 3
- 4
- 5
- 6

**Matrix 2:**

*Placeholder for Matrix 2 image*

**Choose the piece that logically fits to complete the second matrix.**

- 1
- 2
- 3
- 4
- 5
- 6

**Matrix 3:**

*Placeholder for Matrix 3 image*

**Choose the piece that logically fits to complete the third matrix.**

- 1
- 2
- 3
- 4

- 5
- 6

**Matrix 4:**

*Placeholder for Matrix 4 image*

**Choose the piece that logically fits to complete the fourth matrix.**

- 1
- 2
- 3
- 4
- 5
- 6

**Beliefs about Performance**

Now, we would like you to guess two things: a) how many of the 4 puzzles do you think you solved correctly? and b) how many puzzles on average do you think other students in this survey solved correctly.

**How many of the puzzles do you think you were able to solve correctly?**

- 0
- 1
- 2
- 3
- 4

**How many of the puzzles, on average, do you think other students taking part in this study were able to solve correctly?**

- 0

- 1
- 2
- 3
- 4

**Social Preferences**

*In this section, you'll find a few questions that might seem unrelated to school. They're here to get a sense of how you think in different situations. Just answer honestly - your responses will help us understand your perspective better.*

**13. Please tell me, in general, how willing or unwilling you are to take risks, using a scale from 0 to 10, where 0 means you are "completely unwilling to take risks" and 10 means you are "very willing to take risks."** (Scale: 0-10)

**14. How willing are you to give up something that is beneficial for you today in order to benefit more from that in the future? Please again indicate your answer on a scale from 0 to 10. A 0 means "completely unwilling to do so," and a 10 means "very willing to do so."** (Scale: 0-10)

**Demographics**

**15. Please choose your year of birth.** (Options from 1990 to 2015, plus "Other")

**16. What gender do you identify with?**

- Male
- Female
- Other

**17. Were you born in Italy?**

- Yes
- No

**18. In which region (regioni d'Italia) were you born?** *(Only shown if "Yes" to the previous question)* (List of Italian regions)

**19. Was your father born in Italy?**

- Yes
- No
- I do not know

**20. Was your mother born in Italy?**

- Yes
- No
- I do not know

**Parents' Education**

**21. What is the highest level of education your father finished?**

- Did not finish high school or similar
- Finished high school or similar
- Finished a course or training after high school or similar
- Finished a university degree or similar
- I don't know

**22. What is the highest level of education your mother finished?**

- Did not finish high school or similar
- Finished high school or similar
- Finished a course or training after high school or similar
- Finished a university degree or similar
- I don't know

**Parents' Job**

**23. What does your father work as?**

- Works for a company or someone else
- Has his own business

- Not working
- Retired
- I do not know

**24. What does your mother work as?**

- Works for a company or someone else
- Has her own business
- Not working
- Retired
- I do not know

**Socioeconomic Status**

**25. How many people live in your household, including yourself?**

- 1
- 2
- 3
- 4
- 5
- 6
- 7 or more

**26. Do you have your own room?**

- Yes
- No

**27. How would you describe your household's money situation right now?**

- We have enough money for everything we need.
- We have enough money, but it's sometimes a bit tight.

- It's hard to cover our needs with the money we have.
- It's very hard to cover our needs with the money we have.
- I do not know.

**28. Can your family (if they wish) pay for a week's vacation away from home each year (excluding accommodation with relatives)?**

- Yes
- No

**Identifier from Previous Survey** *(only included in survey waves 2 and 3)*

At the start of this survey, we asked you to provide a unique code. This code helps us link your answers across different rounds of the survey. However, we noticed that some participants did not follow the required format when entering their code in the previous survey. Please remember the required format: The first letter of your name, the first two letters of your mother's name, and the day of your birth in two-digit format. This makes your code exactly 5 characters long. Example: If your name is Angelo, your mother's name is Maria, and your birthday is February 3rd, your code would be: AMA03.

**29. If you believe you entered the wrong code in the previous survey, please re-enter the exact code you used last time (even if it was incorrect) in the field below. This will help us match your responses from earlier surveys and ensure none of your data is lost. If you are unsure whether you entered a code that did not follow the format requirements in the previous survey, please provide your best guess of what you might have entered. If you are confident that the code you entered at the beginning of this survey is the same as the one you provided in the previous survey, you may leave this field blank.** (Text input field)

**30. You may also leave a comment here to explain any difficulties you encountered in providing the code.** (Text input field)

**Post-Project Questions (for Treatment Group)** *(only included in survey wave 3)*

*We would like to learn more about your experiences with the* Raise-Up *project over the past few months.*

**31. Please indicate how much you agree or disagree with each of the following statements. (Scale: 1 = Do not agree at all, 7 = Agree completely)**

- Having professional educators working together with our teachers was very helpful.
- I appreciated the focus on digital topics in the Raise-Up project.
- I appreciated the focus on green and environmental topics in the Raise-Up project.
- The Raise-Up project was a valuable and positive experience.
- The project helped me prepare for my future educational goals.
- The project helped me prepare for my future professional goals.
- We often talked about our project with students who were not participating in the Raise-Up project.

**Post-Project Questions (for Control Group)** *(only included in survey wave 3)*

*Thank you for your cooperation in completing the questionnaires over the past few months. We would now like to ask you a few additional questions.*

**32. Please indicate how much you agree or disagree with each of the following statements. (Scale: 1 = Do not agree at all, 7 = Agree completely)**

- I feel envious that my class did not take part in the Raise-Up project like the others.
- The students in the other classes often talk proudly about their participation in the Raise-Up project.
- I am well aware of what the students in the Raise-Up project did during their project work.

**Post-Project Questions (for all students)** *(only included in survey wave 3, a quiz to check for RAISE-UP-related knowledge differences between control and treatment)*

**33. Which of the following statements best describe the Raise-Up project and the activities students participated in? Please select all options that you think are correct.**

- A project where students worked on practical activities related to digital technologies and environmental topics.
- Activities designed to help students think about future job opportunities and career paths.

- Lessons taught together by regular teachers and external educators.
- Using digital tools and technologies for school projects.
- Learning about ecological issues, sustainability, and the environment.
- A program focused only on training teachers, with no specific activities for students.
- An after-school club focused on sports and competitions.
- Extra homework assignments about classical literature and history.
- A project to organize fundraising events to buy new equipment for the school.
- Preparing students for university entrance exams.

**34. What are the main goals of the Raise-Up project? Please select all options that you think are correct.**

- To help students stay motivated and engaged in their studies.
- To reduce the number of students who leave school early (dropout).
- To help students better understand possible future jobs and career paths (vocational maturity).
- To make school subjects more interesting by connecting them to current topics like digital technology and the environment.
- To support teachers and educators in using new and engaging teaching methods.
- To organize student exchange programs with schools in other countries.
- To provide financial aid or scholarships to students.
- To renovate the school buildings and classrooms.
- To find immediate part-time jobs for students.
- To create new school sports teams.

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**Thank you very much for participating in this study. Your responses have been saved.**