Talent is Everywhere, Opportunity is Not:
Online Role Model Mentoring and Students' Aspirations *

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November 6, 2024

Abstract

This paper examines the impact of ORME, a cost-effective and easily scalable online mentoring program for middle school students. By connecting students with successful role models who share similar socio-economic backgrounds, ORME aims to enhance students' aspirations, beliefs about the returns to education, and ultimately, their educational outcomes. Through a randomized controlled trial involving five middle schools and over 600 students in Campania, Italy, we find that participation in ORME significantly improves students' perceptions of effort-related success, increases the alignment between their aspirations and expectations, and enhances school effort. Additionally, students in the treatment group are more likely to prefer and enroll in the academically-oriented school tracks and perform better on standardized tests, particularly in language.

*We thank Guido Busti, Carla Nasti, and Francesca Sangiuliano Intra for their research support without which ORME would have not been possible. We thank Davide Dragone, Melissa Kerney, James Heckman, Katya Ivanova, John List, and seminar participants at various conferences and seminars for helpful comments. The intervention was pre-registered in the AEA RCT Registry (RCT ID #AEARCTR-0007567). This research was generously supported by the Swiss National Science Foundation (SNSF, grant no. 197588) and by A Sustainable Future initiative (ASF), financed by the faculty of Economics and Business at the University of Amsterdam.

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1 Introduction

Role models can shape our aspirations, showing what is possible and inspiring us to pursue paths we might not have otherwise considered (Morgenroth et al., 2015). A brief meeting at the right time could alter the course of an entire life, offering fresh perspectives, valuable information, and sparking a process of self-awareness that can shape one's beliefs, aspirations, and choices. However, opportunities for inspiring meetings are not equally available across different socio-economic strata; they are heavily influenced by the social environment in which children grow up.

Children growing up in less advantaged environments are less exposed to diverse and inspiring careers, have lower expectations and aspirations for the future, and tend to choose less demanding schools (Chetty et al., 2022; Hoxby and Avery, 2013). These factors can create a vicious cycle of underinvestment in their human capital, ultimately leading to a self-fulfilling prophecy (Guyon and Huillery, 2021; Fubini, 2018). Born into socioeconomically challenging circumstances, these children start their life journey at a disadvantage. Without targeted interventions to provide equitable opportunities, this gap is seldom closed (Heckman, 2013). We propose and evaluate an intervention that aims at reducing this gap.

This paper estimates the impact of a cost-effective, scalable, and standardized online role model mentoring program for 12-year-old school children. We evaluate whether the intervention can influence children's beliefs about the returns to effort, enhance their aspirations, and affect educational outcomes, such as school tracking choices and test scores. Within the project framework, role models are defined as self-made individuals who grew up in the same region, sharing a similar economic and family background with the students they meet, and are now successful in their professions. The hypothesis is that these role models can inspire children, demonstrating how success can be achieved through hard work and perseverance, regardless of one's initial socio-economic background.

The Online Role model MEntoring Program (ORME) consists of a series of online, interactive meetings between 12-year-old students and role models. Each student participates in a session with a role model, along with their class and up to three other classes of children of the same age. These meetings are partially standardized and divided into two parts. The first part, lasting about 15 minutes, is dedicated to the role model's presentation, typically accompanied by slides and pictures to enhance engagement. In their

presentation, role models are asked to cover (at least) four key areas: their territorial origin and socio-economic background, educational journey, current professional profile, and the obstacles and barriers they encountered along the way. The second part, which is the core of the meeting, lasts approximately 45 minutes and focuses on interaction between the students and the role model. During this time, students ask questions live, with a moderator facilitating the discussion. This interactive component is crucial for fostering a connection between the students and the role model.

ORME has been implemented in Italy and, precisely, on a sample of 12-years old students in the region of Campania during the school year 2021-2022. The intervention targeted 12-years-old as this is the year before upper-secondary school tracking.[1] In many countries, including Italy, tracking choice is an important predictor of future educational, labor market, and life outcomes. The choice of Campania to test the effectiveness of the program is consequential to multiple evidence. Despite being the third most populated Italian region, Campania is the third to last Italian region in terms of GDP per capita (ISTAT, 2020). Therefore, a sizeable fraction of local talent and potential remains unexpressed. Moreover, the Campania region is characterized by remarkably high school dropout rates with about 17.3 percent of students that abandon school before the legal age compared to the national average of 13.1 percent (ISTAT, 2021). Finally, students in Campania report, on average, lower ambitions and expectations for the future than in other regions (Fubini, 2018).

The effectiveness of ORME is assessed through a randomized controlled trial (RCT) intervention involving five middle schools, 35 classes, and more than 600 students in Campania.[2] The sampling procedure attempts to reflect the typical schools of the area and to be representative of the local education system. In each school, half of the classes were randomly assigned to the ORME treatment group and half to the control group continuing with the standard school curriculum.

Data were collected in different waves and from various sources. The first data collection, *baseline*, took place before the intervention. Each student in the sample completed a detailed in-class survey gathering information on family background, aspirations and beliefs

[1]Tracking in Italy is entirely determined by the choices of students and their parents. There are no formal requirements that must be met to enroll in a particular track. Tracking choices can be broadly categorized into two types: academic-oriented tracks and non-academic-oriented tracks. Section 2 in the paper describes the institutional framework that is the focus of this study.

[2]The number of students refers to the initial pre-attrition sample. Issues of selective attrition will be extensively discussed below.

on returns to education and effort, and educational preferences, among other things. The second survey, *endline*, was administered six months after the intervention and closely mirrored the baseline survey. Its purpose was to collect updated information on students' beliefs, aspirations, educational preferences, and their planned choices regarding future educational paths and tracking.[3] To address potential self-report bias in surveys, the data were merged with two different sources of administrative data. First, we collected the official tracking choices made by each student at the end of middle school. These data enable validation of the student-reported tracking choices. Additionally, this data extends the time horizon of our study, as students officially choose their track one year after the intervention. Second, we obtained data on the students' performance in a standardized national test taken also one year after the intervention. This test score allows us to assess whether the intervention impacted school performance, for example, through increased effort.

In addition to receiving high appreciation from students, parents, and teachers, ORME has significant quantitative effects on student outcomes. ORME influences students' beliefs about the returns to effort. Treated students perceive an increase in the returns to effort for individuals from non-wealthy families. Students in the control group believe that about 34 out of 100 students from these families will succeed in the labor market as adults if they put in sufficient effort at school. In contrast, students in the treatment group believe that an additional six students will achieve success, representing an increase of approximately 18 percent over the control group mean. On the other hand, the perceived returns to effort are negligible for wealthy students, suggesting that their career paths are often already determined, regardless of their school effort.

The change in students' beliefs likely extends to other dimensions of aspirations and school choices. Students in the treatment group report a significant increase in the alignment between the jobs they *would* like to do in the future and the jobs they think they *will* do. This increase amounts to 12 percentage points (pp) which corresponds to approximately 28 percent of the control group mean. Additionally, school effort, measured by whether the student studied for at least one hour the day before the survey, is positively impacted by ORME (+12 pp). However, grit remains unaffected by ORME.[4]

[3]It is important to note that a full summer elapsed between the intervention and the second data collection. This extended time frame helps minimize the risk of social desirability bias or other distortions in how students responded to the survey.

[4]This result is unsurprising, as grit is measured using the short grit scale in Duckworth and Quinn (2009). This scale is unlikely to show individual-level changes in the short term.

We validate the evidence on the effectiveness of ORME on self-reported outcomes such as beliefs, aspirations, and effort by analyzing possible treatment effects on outcomes obtained from administrative records, such as changes in school choices and performance. ORME impacts school tracking choices, though the estimates, while large in magnitude, are too imprecise to be statistically significant. However, we find suggestive evidence that students who participated in ORME aspire to a more demanding, or more academically-oriented, school track. This preference is recorded about six months after the treatment and is confirmed, with even larger point estimates, by administrative enrollment records collected one year after the intervention. Finally, we examine students' performance on the standardized test they take in their last year of middle school, roughly one year after the intervention.[5] Treated students perform significantly better than those in the control group on the language test, with their likelihood of achieving a sufficient score increasing by about 9 pp (+13 percent). Conversely, there is no observed impact on mathematics and English language scores.

Taken together, our analysis of ORME paints a consistent picture. The program appears to influence students' beliefs about the returns to effort, enhance the alignment between their aspirations and their confidence in realizing them, and increase school effort. These changes likely contribute to improved school performance and encourage students to aspire to and enroll in more demanding academic tracks. These effects do not exhibit clear heterogeneity.

Our study has some limitations. First, some of the results are only weakly significant. The small sample size and reliance on survey data likely contribute to effects that are quantitatively (and economically) large but not always precise. Second, our findings are short-term, and for certain outcomes, such as tracking, it remains uncertain how changes in tracking choices will translate into future academic and non-academic success. Nonetheless, we believe it is important to emphasize ORME's effectiveness in improving beliefs about the returns to effort, school effort, and self-confidence in achieving individual goals. Third, while the program is theoretically easy to replicate and scale up, we do not provide direct, data-driven evidence on this aspect in our study. However, in Section 5, we offer a careful discussion, inspired by List (2022), on the potential and challenges of scaling our intervention. We believe that these challenges can be overcome, and the program successfully scaled up.

[5]Unfortunately, we only have standardized test data for four out of five schools, as one school has experienced repeated changes in leadership and has thus far declined to provide this data.

Contribution and Novelty. This study examines a new program designed to complement standard school curricula. Generally, school curricula around the world tend to be narrow, focusing primarily on traditional subjects like math and language, despite growing evidence of the importance and malleability of soft skills, such as students' aspirations and beliefs. With this perspective, we have designed a school-based program aimed at nurturing children's beliefs, aspirations, and school-related preferences. Our project contributes to the child development literature by providing new tools to help ensure that all children, particularly those from less advantaged and stimulating social environments, can fully realize their potential. Drawing inspiration from iconic child interventions such as the Carolina Abecedarian Project (Campbell et al., 2002) and the Perry Preschool Program (Heckman et al., 2010), recent research has underscored the potential of school programs focused on developing soft skills (Alan et al., 2019; Almlund et al., 2011; Sorrenti et al., 2024; Berger et al., 2024).

ORME combines insights from two influential strands of literature, namely, the one on role models and the one on growth mindset interventions. We draw on concepts from identity-based motivation theory to explore whether role model interventions can serve as signals for belief updating (Bénabou and Tirole, 2011) within a malleable self-concept (Oyserman and Destin, 2010). The central idea is that role models have the potential to influence individual characteristics such as identity, self-efficacy, and self-esteem, thereby motivating children to adjust their beliefs, dreams, and aspiration for future achievements. Literature from various fields provides evidence on a few, but very specific, characteristics that drive the effectiveness of role models, such as gender (Beaman et al., 2012; Porter and Serra, 2020; Kipchumba et al., 2024) or socio-economic background (Gershenson et al., 2022). This project goes beyond identifying a single characteristic of role models and instead designs a "general population" role model mentoring program, with a primary focus on cost-effectiveness, ease of implementation, and scalability. To this end, the aim is to broadly define individuals who can serve as sources of inspiration or information for students, based on a small set of characteristics such as geographical and socio-economic background.[6]

Growth mindset interventions, which promote the belief that intelligence and abilities can improve through effort and learning from mistakes. These programs have been shown to

[6]The literature has shown that, in some circumstances, characters from movies or TV shows can also inspire individuals. For instance, La Ferrara et al. (2012) find a negative impact of television on fertility in Brazil in response to exposure to soap operas portraying small families.

enhance academic outcomes (Alan et al., 2019), though their effectiveness varies by context and demographic factors (Paunesku et al., 2015; Broda et al., 2018; Sisk et al., 2018; Kim et al., 2022). This paper extends the literature by evaluating an online role model intervention that uses digital platforms to provide motivational success stories. Unlike growth mindset interventions, which focus on shifting internal beliefs about ability and effort, role model interventions inspire through external examples of success and perseverance from individuals with similar backgrounds. This research complements existing growth mindset strategies by exploring how role model interventions can enhance or offer an alternative approach in challenging social environments.

ORME embodies the key characteristics of innovative and cost-effective child development programs. By leveraging a series of online meetings, ORME is considerably less expensive than programs like the Abecedarian or Perry projects, which cost at least $10,000 per child. Additionally, ORME is also less expensive than more recent and highly successful mentoring and tutoring programs, such as the Baloo and You Program analyzed in Kosse et al. (2020) or the Pathways program studied in Oreopoulos et al. (2017).

ORME is designed to be easily implemented and scaled up. While role model interventions are typically conducted in person, e.g., Kipchumba et al. (2024), or as non-interactive video programs (Bhan, 2020; Dimastrochicco and Ghisolfi, 2022; Riley, 2022), ORME's online format offers several advantages. Compared to in-person programs, the online nature of ORME simplifies scheduling and allow role models to interact simultaneously with students from different classes or even schools, thereby enhancing scalability (List, 2022). Compared to video interventions, an online program preserves the important aspect of direct interaction, such as questions and debates, found in in-person meetings. The potential of online mentoring programs is further supported by recent research by Carlana and La Ferrara (2024), which examines the Tutoring Online Program (TOP), an online one-to-one mentoring program for students during the pandemic. This study finds that TOP effectively boosts academic performance. TOP features several differences compared to ORME. Although the effects on soft skills are also investigated, TOP is more focused on school performance. It is a mentoring program in which volunteer university students act as tutors for underprivileged middle school students. Moreover, TOP consists of individual or small-group tutoring sessions, whereas one of the main features of ORME is the interaction between multiple classes and a single role model. This latter element is key to facilitating scalability and boosting interactions between peers.

ORME requires a limited amount of school time to run, as it essentially consists of one or a few one-hour online meetings with a role model. For comparison, the socio-emotional skills training program studied in Sorrenti et al. (2024) involved students for about 45 school hours over a school year, i.e., with two 45-minute meetings per week.

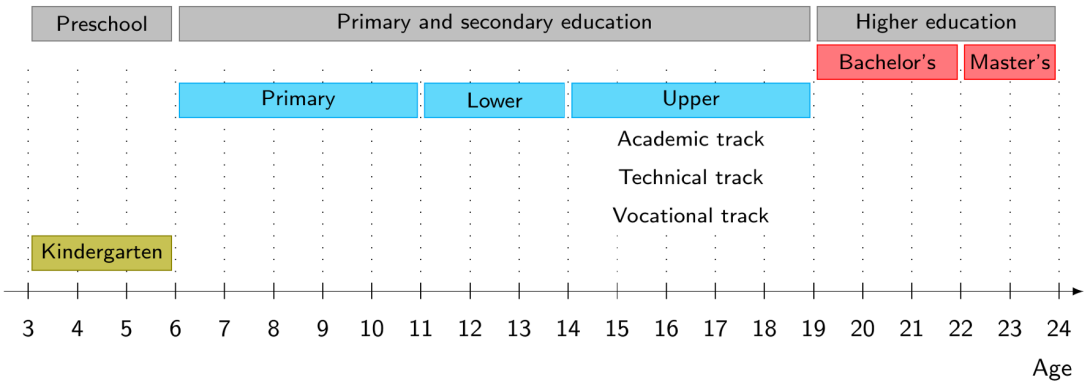
2 Institutional Background

This study is conducted in the southern Italian region of Campania. Italy has one of the highest rates of early school leavers in Europe (ISTAT, 2019), with a significant divide between the northern and southern parts of the country. The early school leaving rate is a key indicator of how well education systems retain students. According to Eurostat (2022), the European average for early school leavers is approximately 9.7 percent, while Italy's rate is higher, at around 12.7 percent. The situation worsens in the southern part of the country, where the rate reaches nearly 17 percent.

A similar trend is observed in later-life achievements. Italy falls behind the EU average in terms of educational attainment among young adults. Only 76 percent of 25- to 34-year-olds in Italy have a diploma, compared to the EU average of 85 percent. In southern Italy, this figure drops to 71 percent. When considering the share of 30- to 34-year-olds with a degree or tertiary education, the EU average is about 42 percent, while Italy's rate is just 27 percent, and only 21 percent in the southern regions.

These numbers highlight Italy, particularly its southern regions, as an ideal setting for testing new education programs such as ORME. Among the southern regions, we selected Campania for several reasons. First, Campania is a large region with a population of approximately 5.6 million people in 2024, according to Eurostat, making it the third most populous region in Italy. However, it ranks third from last in terms of GDP per capita (ISTAT, 2020), indicating that a significant portion of local talent remains untapped. Second, the region has a high early school leaving rate of about 17 percent, which mirrors the average value of southern Italy (ISTAT, 2021). Finally, students in Campania generally report lower aspirations and expectations for the future compared to their peers in other regions (Fubini, 2018). This makes Campania's social, economic, and institutional environment a promising setting for evaluating programs aimed at fostering students' aspirations and shaping beliefs about future opportunities and life paths.

Figure 1: Italian School System



Notes: This figure illustrates the Italian education system.

The Italian education system is predominantly public and free.[7] Children have the right to pursue education until the age of 18, although compulsory schooling lasts 10 years, from the age of 6 to 16. Figure 1 provides an overview of the Italian education system. Primary school (ISCED 1) in Italy starts at 6 years old and spans grades 1-5. Primary education is mandatory, with the main objective of offering a strong foundation in reading, writing, and mathematics, along with a basic introduction to subjects such as geography, history, science, English, art, and music.

The knowledge and subjects introduced in primary school are further developed in lower secondary school, which begins at age 11 and ends at age 14. This is the stage where ORME is implemented and represents a crucial step in the educational process, since the tracking occurs at the end of this cycle. Typically, students finish their lower secondary education at 14 years of age by taking a final exam, which is necessary for admission to higher secondary education. This exam is the only requirement for entry into any upper secondary school. Admission to public high schools does not depend on previous academic performance or the grades of the final exam. In other words, there is no ability-based tracking in the Italian education system, and all students are theoretically eligible for any educational path.

Upper secondary education in Italy is divided into three main tracks: the technical track (*Istituti Tecnici*), the vocational track (*Istituti Professionali*), and the academic-oriented track (*Licei*[8]). The primary difference between these tracks lies in the balance between

[7]For example, over 93 percent of Italian primary school students are enrolled in public schools.
[8]The academic track is quite diverse, offering various fields of study, including scientific and classical

general education subjects, such as mathematics and languages, and more specialized or vocational subjects, such as technical drawing or accounting, and practical training. In principle, completing any of these tracks meets the legal requirement for access to tertiary education. However, in practice, most students from technical and vocational schools—being prepared for immediate entry into the job market and receiving less academically focused training—do not pursue university studies. According to the Italian Ministry of Education (MIUR), in the 2020/2021 school year, more than 60 percent of university students held a degree from a *Liceum*, 23 percent from a technical school and fewer than 10 percent from a vocational school.[9]

3 The Intervention and its Evaluation

3.1 The Role Model Mentoring Program

The role model mentoring program ORME is a school program that consists of a series of online and interactive meetings between 12-year-old students and role models. Due to its online format, the program has a simple structure, connecting up to four lower secondary school classes through an online platform (e.g., Zoom) with a person who embodies certain characteristics, as explained below, and whom we refer to as a *role model*.

Role models are recruited based on observable characteristics. We utilized informal individual networks, along with collaborations with organizations and institutions in Campania, to identify a list of potential role models who meet the following criteria. First, role models must embody the "someone like me" dimension, which is essential to ensure students can identify with the role model (Lockwood, 2006; Rask and Bailey, 2002; Nguyen, 2008). Therefore, we exclusively selected who share the same geographical and cultural background as the students they interact with. Second, role models should be successful individuals. Our definition of success is broad and includes achievements related to the role model's profession, educational accomplishments, or public visibility. In line with Morgenroth et al. (2015), the critical aspect of success in our framework is its source: our role models' success stems from hard work and perseverance, rather than nepotism or

lyceums, as well as those focused on social sciences, psychology, pedagogy, linguistics, the arts, and more.
[9]About 7 percent of students cannot be classified within this distinction due to various factors, such as having studied in a different educational system before enrolling in university.

luck, and is characterized by overcoming obstacles without being discouraged by setbacks. Lastly, role models must be effective communicators. These and other relevant characteristics were assessed by the research team during a series of pre-intervention selection interviews.

As part of the program, each student participates in a session with a role model. These meetings are divided into two parts. The first part, lasting about 15 minutes, is dedicated to the role model's presentation, role models have some flexibility. On the one hand, they are free to choose elements such as the presentation format (e.g., the use of slides or pictures) and its style or organization. On the other hand, they are required to cover at least four key topics.

The key topics role models cover in their presentation are:

- **Territorial origin and socio-economic background.** Role models describe their background, emphasizing their connection to the local area. This is essential to foster student with the role model, as students perceive the role model as someone familiar with the local conditions, opportunities, and challenges they may face.
- **Educational journey.** Role models share their educational choices and career paths. This part of the presentation serves an important informational purpose, exposing students to new possibilities—such as opportunities within the public education system in Italy, which may often go unexplored due to a lack of awareness.
- **Current professional profile.** Role models discuss their career trajectory to demonstrate what can be achieved and how. The primary aim is to show that success in the labor market and professional recognition are attainable regardless of socio-economic background, even if students are not necessarily drawn to a particular profession.
- **Obstacles, failures, and barriers encountered along the way.** Role models are encouraged to openly discuss the challenges, failures, and barriers they have faced. This is crucial for several reasons. It raises awareness among students that it is possible to overcome obstacles and succeed, even after previous failures. Moreover, it strengthens the identification process by helping students see that others have encountered and overcome difficulties, making it easier for them to imagine themselves on a similar path to success.

The role models' presentation is followed by the second part of the meeting, which is dedicated to direct interaction between the students and the role model. This part, lasting approximately 45 minutes, is the core of the session. During this time, students ask questions live, with a moderator facilitating the discussion. This interactive component is essential for fostering a deeper connection between the students and the role model.

3.2 Empirical Setting and Implementation

Empirical design. At the beginning of 2022, all lower secondary schools in the Campania region of Italy were invited to participate in the ORME program. Schools received invitation letters along with an informative sheet describing the project. To participate in ORME, schools were required to have internet access in every classroom, as well as an interactive whiteboard or screen. Many schools immediately expressed interest in the project and confirmed their availability for the months of April and May, which was the period during which the intervention took place.

We selected five schools to participate in the project based on the following main criteria.[10] First, we aimed to obtain a sample of schools that would be regionally representative. Second, to improve comparability and minimize the impact of potential contextual confounders, we selected schools that were geographically close. This choice ensures that students likely share similar perceptions of institutions, barriers, and opportunities within the same territorial context. Lastly, we used a temporal criterion, giving priority to schools that expressed interest earlier. Figure 2 shows the locations of the five schools included in the sample.[11] In total, we had 35 classes and more than 600 students prior to attrition. Section 5 provides further discussion on the representativeness of the sample.

We assess the impact of ORME through a randomized controlled trial (RCT). In each school, we randomly assigned half of the classes (18 classes) to the treatment group and the other half (17 classes) to the control group. Classes in the treatment group were exposed to ORME and participated in a session with a role model. Classes in the control group, continued with their usual school schedule. The sessions with the role models took

[10] We decided to involve five schools due to budgetary constraints, the timing of the intervention, and the minimum sample size required to observe significant treatment effects. In Section 5, we explain why, in our view, the number of schools is not a major concern, as the program being tested is easily scalable at a low cost.

[11] School names are not provided in the paper. Please contact the corresponding author for additional information on the schools involved in the project.

Figure 2: Schools Location

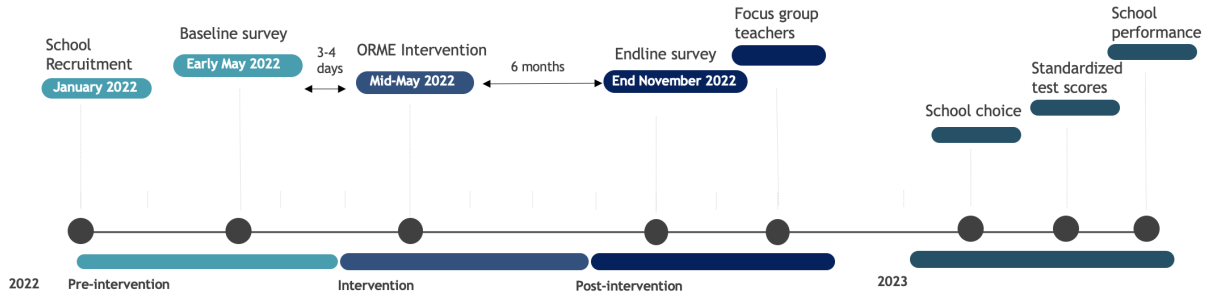
Notes: This figure illustrates the geographical locations of the five schools participating in ORME.

place during regular school hours, replacing other scheduled classes. As a result, ORME did not increase the total number of school hours for students in the treatment group.

Data. We collected data in multiple waves and from various sources. First, we conducted two survey data rounds. Surveys were administered in classrooms during teaching hours by trained interviewers using tablets, ensuring standardized data collection procedures for all participants. Figure 3 provides a visual representation of the timeline. In early May, the *baseline* survey was conducted in both the treatment and control group classes. The baseline survey took place 3-4 days before students in the treatment group met with a role model and aimed to gather information on family background, students' aspirations, educational preferences, beliefs about the returns to education and effort, school performance, tracking preferences, and soft skills such as grit, locus of control, and self-esteem, which were measured using validated scales (e.g., Duckworth and Quinn (2009)). Appendix B contains the full questionnaire used at baseline.

Six months after the intervention, at the end of November, we administered the post-intervention (*endline*) survey, which covered the same questions as the baseline survey. A full summer had passed between the intervention and the second data collection, which helped minimize the risk of social desirability bias or other distortions in how students

Figure 3: Timeline Intervention



Notes: This figure shows the timeline of the ORME intervention.

responded to the survey.

Survey data were complemented by administrative records. First, we collected the official tracking choices made by each student at the end of middle school. These data allow us to validate the student-reported tracking preferences. Additionally, they extend the time horizon of our study, as students officially choose their track one year after the intervention. Second, we obtained data on student performance in a standardized national test taken one year after the intervention. These standardized test data are available for four out of the five schools in the sample, as one school has experienced repeated changes in leadership in recent academic years and has so far declined to provide the data. The standardized test scores allow us to assess whether the intervention impacted school performance, for example, through increased effort. The standardized test is administered by the *Istituto Nazionale per la Valutazione del Sistema educativo di Istruzione e di Formazione* (INVALSI), which conducts national standardized tests each year for students in grades 2, 5, 8, 10, and 13. The purpose of these tests is to evaluate, at key stages of the school cycle, whether students have achieved a certain level of proficiency in Italian, Mathematics, and English.

Tables 1 and 2 present the descriptive statistics of our sample, comparing the treatment and control groups based on students' and family characteristics, respectively. The third column of each table indicates whether the differences between the treatment and control groups are statistically significant. This analysis includes all students who completed the baseline survey, thus providing data on demographics and other individual characteristics. It is important to note that this sample differs from the estimation sample, which only includes students who completed the endline survey. Despite the difference between the

baseline and estimation samples, Appendix Table A3 shows no evidence of selective attrition by treatment arm, providing reassurance that assignment to ORME did not affect the likelihood of students completing both the baseline and endline surveys.

The treatment and the control groups are remarkably similar in terms of observable characteristics. None of the characteristics in Table 1 shows significant differences across the treatment arms. Specifically, students' gender, age, and migrant background are consistent across both groups. The same applies to individual traits such as self-esteem, grit, and locus of control.[12] Additionally, the alignment between the jobs students aspire to and the jobs they believe they will have in the future (Aspire=Expect) is similar across groups, as are preferences for future enrollment in the academic track.

Table 1 confirms that family characteristics are also similar across the treatment and control groups, with no significant differences between them. If anything, the treatment group has slightly fewer only children (13 versus 17.7 percent) and slightly more parents who completed high school (36 versus 31 percent for the case of fathers). However, the share of highly educated parents, i.e., with a university degree is the same in the treatment arms. Overall, the balancing tables support the key identifying assumption of our empirical setting: that the treatment and control groups are similar in terms of observable characteristics.

Empirical model. The use of an RCT to assess the impact of ORME makes the empirical model straightforward. We estimate the following equation:

$$Y_{ics} = \beta_0 + \beta_1 ORME_{cs} + \beta_2 Y^0_{ics} + \boldsymbol{X'_{ics}}\beta_3 + \eta_s + \varepsilon_{ics} \quad , \tag{1}$$

Y_{ics} is the outcome variable measured at the endline or at the point when administrative data, such as enrollment in upper secondary education, are collected. Outcomes will include beliefs about returns to effort and wealth, students' aspirations and expectations for the future, school effort, grit, tracking preferences and actual choices, and school performance. Each outcome measurement and definition will be detailed in the results section. ORME_{cs} is an indicator variable for the treatment, representing students randomly exposed to the ORME program. To account for pre-intervention differences in outcomes, Equation 1 includes Y^0_{ics}, the outcome variable measured at baseline. $\boldsymbol{X_{ics}}$ is a vector

[12]Grit is measured using the validated scale from Duckworth and Quinn (2009). Appendix B includes the items used to measure locus of control and self-esteem.

Table 1: Descriptive Statistics by Students' Characteristics: Balancing

Variable	(1) Control Mean/(SD)	(2) Treatment Mean/(SD)	(1)-(2) Pairwise t-test Mean difference
Female	0.502	0.521	-0.019
	(0.456)	(0.536)	
Age	13	13	-0.013
	(0.647)	(0.598)	
Migrant background	0.079	0.050	0.029
	(0.422)	(0.170)	
Index Self-Esteem	0.703	0.715	-0.012
	(0.246)	(0.185)	
Index Grit	0.695	0.716	-0.020
	(0.198)	(0.181)	
Index Locus of Control	0.726	0.729	-0.004
	(0.154)	(0.136)	
Aspire=Expect	0.549	0.595	-0.046
	(0.619)	(0.592)	
Academic track	0.809	0.819	-0.009
	(0.474)	(0.405)	
Number of observations	215	259	474

Notes: This table shows the descriptive statistics for students' characteristics by treatment status. The sample consists of students who completed the baseline survey. Columns (1) and (2) report the means and standard deviations (SD) for the control and treatment groups, respectively. The third column shows the difference in means between the control and treatment groups. Standard errors are clustered at the classroom level. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level, respectively.

Table 2: Descriptive Statistics by Family's Characteristics: Balancing

Variable	(1) Control Mean/(SD)	(2) Treatment Mean/(SD)	(1)-(2) Pairwise t-test Mean difference
Only child	0.177	0.131	0.045
	(0.344)	(0.331)	
Number of siblings: One	0.605	0.587	0.018
	(0.517)	(0.505)	
Child lives with single parent	0.088	0.097	-0.008
	(0.309)	(0.253)	
Mother works	0.786	0.780	0.006
	(0.608)	(0.565)	
Mother's education: Middle school or less	0.102	0.093	0.010
	(0.480)	(0.392)	
Mother's education: High School	0.265	0.313	-0.048
	(0.531)	(0.525)	
Mother's education: University	0.507	0.490	0.017
	(0.842)	(0.635)	
Father's education: Middle school or less	0.158	0.131	0.027
	(0.535)	(0.501)	
Father's education: High School	0.312	0.359	-0.047
	(0.605)	(0.640)	
Father's education: University	0.381	0.351	0.030
	(0.920)	(0.940)	
Number of observations	215	259	474

Notes: This table shows the descriptive statistics for students' family characteristics by treatment status. The sample consists of students who completed the baseline survey. Columns (1) and (2) report the means and standard deviations (SD) for the control and treatment groups, respectively. The third column shows the difference in means between the control and treatment groups. Standard errors are clustered at the classroom level. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level, respectively.

of additional controls, including, among others, controls for student gender and parental education. The model also includes school fixed effects (η_s). ε_{ics} is the error term of the model. We estimate Equation 1 using ordinary least squares (OLS) models and standard errors clustered at the classroom level.

We estimate three different specifications of Equation 1. As RCTs with balanced treatment and control groups do not require the use of control variables, the first specification includes no control variables except school fixed effects. In the second specification, we include a restricted set of controls such as students' gender and parental education, which are available for nearly the entire sample. Finally, the third specification incorporates a richer set of controls, including parents' occupation, an index for student's self-esteem index, and baseline measurements of the outcome variables. These additional controls are only available for a subsample of observations that completed both the baseline and endline surveys. For the 25 percent of observations lacking this information, we use an imputation technique that assigns them the average value observed in the sample. Additionally, to account for imputation, all specifications with the full set of controls include an indicator variable that takes the value of one if imputation was applied to any of the control values.[13]

4 Results

4.1 Qualitative Results and Quality of Implementation

Before moving to a rigorous analysis of ORME's effectiveness, this section offers a brief qualitative assessment of the intervention, its implementation, and feedback from teachers, parents, and students. Although qualitative (and at times anecdotal), we believe it provides preliminary evidence of the program's potential.

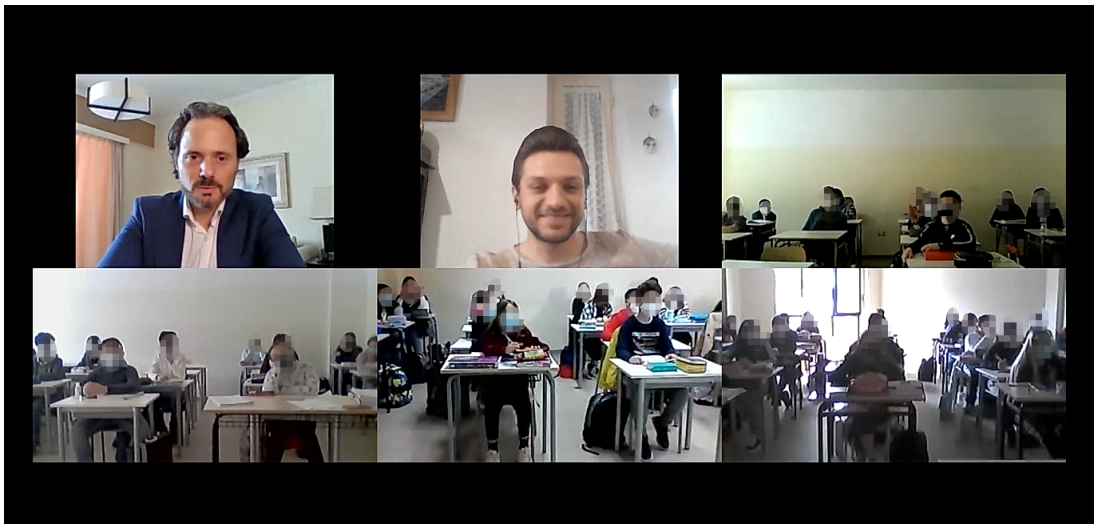
The technical implementation of the program was highly successful. All meetings were held on schedule without significant delays. Figure 4 depicts one of the online sessions. As shown, the role model (top-left corner) interacts with four classes simultaneously. A moderator (second box in the top row) facilitates the interaction by gathering questions

[13] Appendix A3 investigates possible selective attrition in the sample and finds no evidence to support the existence of selective attrition.

and reflections from the students. According to teachers, moderators, and video recordings of each session, the level of engagement during the meetings was high, particularly during the second part, which was dedicated to questions and a dynamic back-and-forth between the students and the role model.[14]

Students expressed a high level of satisfaction with the program. According to teachers, discussions among students often continued after the sessions with the role models, demonstrating strong interest in the stories and career paths shared. For example, during the online sessions, students asked the role models questions such as,"How did you achieve that?" or "Were you aware of this career path when you were our age?" These inquiries suggest that the program sparked curiosity and deeper consideration of possible career trajectories.

Figure 4: Meeting Between a Role Model and Students



Notes: This figure shows one of the meetings between a role model (top-left corner) and students in four different classrooms interacting online. The picture was taken during the pilot of ORME.

Another important aspect of the meetings was the students' ability to identify with the role models and with their stories. From a qualitative perspective, this objective appears to have been successfully achieved through our intervention. In many circumstances, students displayed a strong sense of self-identification with the role model figures. Two anecdotal episodes support this claim. Figure 5 shows a slide used by one of the role models. The blue arrow points to a picture of his first day of school, taken in front of what used to be his mother's shop, emphasizing his humble origins, which closely

[14]We recorded only the online sessions of the pilot.

resembled those of many the students in the session. In the second picture, the role model showed a class photo with a broken basket in the background. Many students immediately recognized the (broken) basket, leading them to see the role model as "one of them". In another meeting, a role model recounted her experiences with bullying during her school years. This story deeply resonated with students, prompting them to ask numerous questions about whether her success helped her overcome those episodes and gain a sense of personal vindication.

Figure 5: Example of a Role Model's Presentation

Notes: This figure shows one of the slides used by a role model in his presentation.

Finally, in addition to the students' high satisfaction, teachers were also highly pleased with the intervention. In a series of informal follow-up online meetings, teachers confirmed that the role model meetings encouraged students to reflect on and discuss their potential future paths. Teachers acknowledged that programs like ORME, which allow students to interact with successful individuals who share similar backgrounds and provide valuable insights and inspiration, are missing from the standard school curriculum. Importantly, all participating schools expressed interest in continuing ORME in the following school year.

4.2 Quantitative Results

This section presents the main empirical analyses of ORME's causal impact on different outcomes.[15] For each outcome, we provide a detailed explanation of how the outcome variable is constructed, followed by analyses using three specifications: no controls, a restricted set of controls, and the full set of controls, as outlined in Section 3.2.

Beliefs. Role models, by emphasizing concepts such as perseverance and hard work to achieve that students may perceive as unattainable, can influence students' beliefs about the returns to effort and wealth. We explore whether ORME has an impact on these beliefs.

Measuring beliefs is challenging, particularly with adolescents, like those in our study sample. Drawing inspiration from Biroli et al. (2022), we developed four different real-life scenarios to simplify this task and elicit students' beliefs about the returns to effort and wealth. The scenarios are as follows:

- Scenario 1: Low effort & wealthy family: *Imagine 100 middle school students studying for* ***less than 10 minutes*** *a day and coming from a* ***wealthy family****. How many do you think will have a good job as adults?*
- Scenario 2: Low effort & non-wealthy family: *Imagine 100 middle school students studying for* ***less than 10 minutes*** *a day and coming from a* ***non-wealthy family****. How many do you think will have a good job as adults?*
- Scenario 3: High effort & wealthy family: *Imagine 100 middle school students studying for* ***1 hour and 30 minutes*** *a day and coming from a* ***wealthy family****. How many do you think will have a good job as adults?*
- Scenario 4: High effort & non-wealthy family: *Imagine 100 middle school students studying for* ***1 hour and 30 minutes*** *a day and coming from a* ***non-wealthy family****. How many do you think will have a good job as adults?*

For each student, we compute the difference between pairs of possible scenarios. Each comparison provides insights into the student's beliefs about different types of returns.

[15] We do not show the heterogeneity analysis due to the small sample size, which limits the evidence for heterogeneous treatment effects.

For example, by comparing responses to Scenario 4 versus and Scenario 2, we elicit beliefs about the returns to effort for students from non-wealthy families.

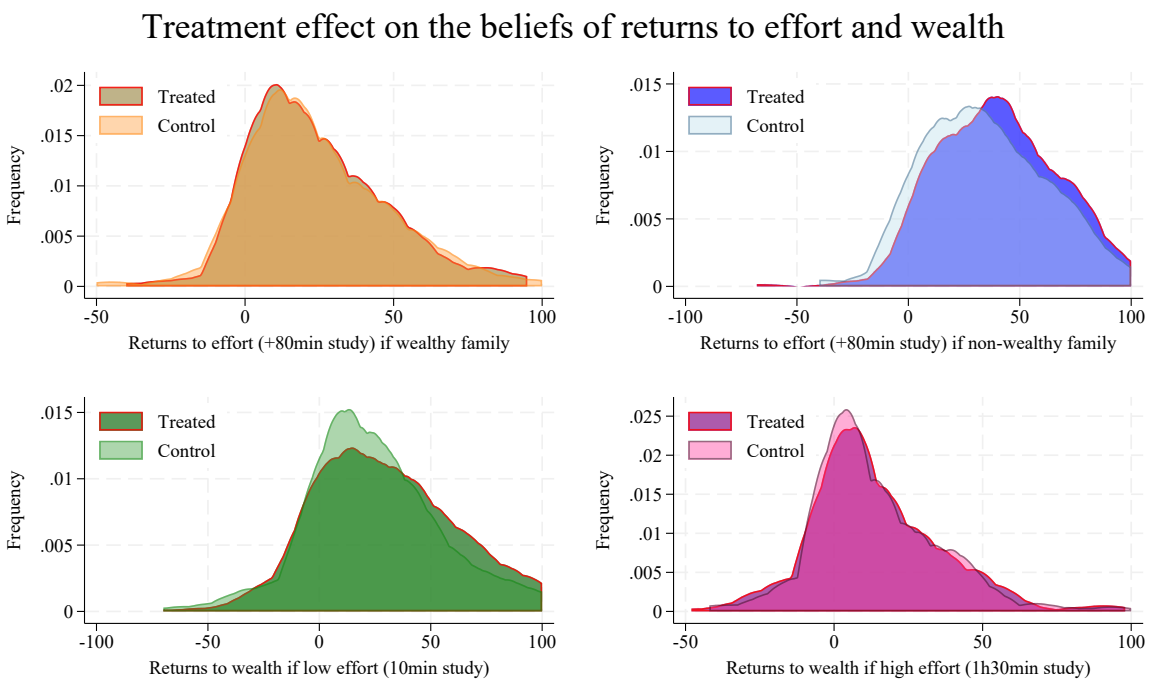
Table 3 presents the empirical analysis. ORME influences students' beliefs about the returns to effort, but only for students from less advantaged backgrounds. Specifically, while the first column suggests no treatment effect for wealthy students, the second column indicates that treated students perceive an increase in returns to effort for non-wealthy students. According to control group students, about 34 out of 100 students from less advantaged families will succeed in the labor market as adults if they put in sufficient effort at school. In contrast, students in the treatment group believe that an additional six students will achieve success. This change of six students is economically relevant, representing an increase of approximately 18 percent over the control group average. This finding suggests that, after meeting with role models, students perceiving more obstacles due to their socio-economic background are more optimistic about their chances of success. Conversely, the perceived returns to effort are minimal for wealthy students, suggesting that their career paths are often already determined, regardless of their school effort.

Figure 6 extends the analysis by examining the full distributions of beliefs rather than focusing solely on average values. The top-right panel, which illustrates the returns to effort for non-wealthy families, shows that the average treatment effect reported in Table 3 stems from a rightward shift in the entire distribution for the treatment group. For the other outcomes, the distributions for the treatment and control groups are quite similar, and in some cases (e.g., returns to effort for wealthy students in the top-left corner) they almost overlap.

The third and fourth column of Table 3 examine beliefs about the returns to wealth. These beliefs are unaffected by participation in ORME, which is unsurprising, as the role models were asked to focus their presentations on the importance of perseverance and effort, independent of an individual's socio-economic background.

In summary, the analysis of beliefs shows that the program effectively shifts students' beliefs about what can be achieved through hard work and perseverance, particularly for those from less advantaged backgrounds. It is important to note that, across all outcomes, the three empirical specifications yield very similar results. The minimal difference in point estimates between those without controls (Panel A) and those with controls (Panels B and C) supports the hypothesis that the treatment and control groups are well balanced.

Figure 6: Students' Beliefs on Return to Effort and Wealth: Distribution



Notes: This figure presents the distribution of students' beliefs about the returns to effort and wealth, divided by treatment and control groups. Each graph shows the effect of treatment on the perceived returns to different combinations of effort levels and family wealth status. The top-left graph illustrates the perceived returns to effort (+80 minutes of study) for students from wealthy families, while the top-right graph shows the same for students from non-wealthy families. The bottom-left graph displays beliefs about returns to wealth when students invest low effort (10 minutes of study), and the bottom-right graph shows beliefs about returns to wealth with high effort (1 hour and 30 minutes of study).

Table 3: Treatment Effects on Beliefs Returns to Effort and Wealth

	Returns to Effort, Wealthy Family	Returns to Effort, Non-Wealthy Family	Returns to Wealth, Low Effort	Returns to Wealth, High Effort	Diff in Returns
Panel A: No Controls					
ORME treatment	1.550	6.026**	4.690	0.215	4.475
	(2.244)	(2.839)	(2.934)	(1.980)	(3.039)
Panel B: Controls					
ORME treatment	1.237	5.461*	4.342	0.118	4.224
	(2.216)	(2.815)	(3.016)	(1.988)	(3.075)
Panel C: Full Set of Controls					
ORME treatment	1.181	6.294**	5.164	0.0509	5.114
	(2.318)	(2.833)	(3.117)	(1.916)	(3.030)
Control Group Mean	23.19	34.13	24.47	13.53	10.94
Obs	478	478	478	478	478

Notes: This table shows the treatment effects of the ORME program on students' beliefs regarding the returns to effort and wealth, differentiated by family wealth status and levels of effort. Panel A reports results without controls. Panel B includes a set of basic controls such as the sex and education levels of the parents. Panel C incorporates a full set of controls, adding variables like parents' occupations and a self-esteem index. Missing information is imputed. All specifications are estimated using linear probability models and include school fixed effects. The "ORME treatment" variable indicates whether a student was exposed to the ORME program. The "Control Group Mean" at the bottom of the table shows the average value of each outcome variable for students in the control group. Robust standard errors clustered at the classroom level are shown in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Aspirations, effort, and grit. We explore whether meeting a role model and the resulting changes in students' beliefs about returns to effort are reflected in their aspirations, effort, and grit. One challenge for students living in regions like the one studied is that they often aspire to goals they perceive as unattainable. In theory, meeting role models could shift this perception and better align students' aspirations with their expectations for the future.

We assess the potential increase in alignment between aspirations and expectations induced by ORME using two questions asked in both in the baseline and endline surveys: "What would you like to do when you grow up?" and "What do you think you will actually do when you grow up?" For our analysis, we define the outcome variable as an indicator equal to one if the two answers are the same, and zero if they differ. This approach avoids any subjective assessment of students' responses. Instead, we focus on whether students become more optimistic about achieving their desired goals, regardless of what those goals are.

The first column of Table 4 presents the analysis. ORME has a positive and significant effect on the alignment between students' aspirations and expectations. In the model without controls, the treatment effect amounts to a 12 pp increase in the probability of alignment. This increase is relative to a control group mean of approximately 40 percent, representing a sizeable 28 percent increase. As in previous analyses, the effect remains consistent across specifications; for example, in the model with full set of controls, the treatment effect is 10.9 pp, corresponding to a 25 percent increase.

School effort is also positively impacted by the intervention. We use the question, "Think about yesterday, how much time did you spend studying or doing homework (excluding time spent at school)?" to create an indicator variable that equals one if the student reported at least one hour of study time the previous day, and zero otherwise. The second column of Table 4 shows that ORME has a positive treatment effect of about 12.5 pp. Relative to the control group mean of 49 percent, this represents a 25 percent increase. While the effect remains consistent across empirical specifications, it is slightly less statistically significant in the models with control variables.

Finally, we assess whether ORME impacts grit, using the short scale developed by Duckworth and Quinn (2009). In our sample, the grit index ranges between 0.32 and 1 (SD=0.13). The analysis in the third column of the table shows no significant effect of ORME on grit. This is unsurprising, as grit, as measured by this scale, is unlikely

Table 4: Treatment Effects on Aspirations, School Effort, and Grit

	Aspire=Expect	Effort	Grit
Panel A: No Controls			
ORME treatment	0.120**	0.125**	0.010
	(0.051)	(0.060)	(0.014)
Panel B: Controls			
ORME treatment	0.112**	0.105*	0.006
	(0.054)	(0.060)	(0.013)
Panel C: Full Set of Controls			
ORME treatment	0.109**	0.099	0.003
	(0.051)	(0.059)	(0.009)
Control Group Mean	0.423	0.490	0.713
Obs	478	478	478

Notes: This table shows the treatment effects of the ORME program on students' aspirations, school effort and grit. "Aspire=Expect" is an indicator variable that equals 1 if the answers to "What would you like to do when you grow up?" and "What do you think you will actually do when you grow up?" are the same, and zero if they differ. "Effort" is a dummy variable equal to 1 if the student reported at least one hour of study time the previous day, and zero otherwise. "Grit" is an index constructed using the short scale developed by Duckworth and Quinn (2009) and ranges from 0 (not at all gritty) to 1 (extremely gritty). Panel A reports results without controls. Panel B includes a set of basic controls such as the sex and education levels of the parents. Panel C incorporates a full set of controls, adding variables like parents' occupations, self-esteem index, and the baseline analogue of the outcome variable when available. Missing information is imputed. All specifications are estimated using linear probability models and include school fixed effects. The "ORME treatment" variable indicates whether a student was exposed to the ORME program. The "Control Group Mean" at the bottom of the table shows the average value of each outcome variable for students in the control group. Robust standard errors clustered at the classroom level are shown in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

to change at the individual level over a short time frame. In a way, the absence of a treatment effect on grit serves as a validation test for our measures of beliefs, alignment between aspirations and expectations, and effort. Despite all being self-reported that could be subject to social-desirability bias, only some show treatment effects, while grit–a trait expected to remain stable–remains unchanged.[16]

Tracking preference and choice. In both the baseline and endline surveys, we ask students about their intentions regarding future educational choices. Given the importance of tracking in the Italian education system (see Section 2), selecting a particular educational path can have long-lasting individual consequences. Meetings with role models may influence students' educational preferences for various reasons. Role models can provide new information about potential career paths and how to pursue them. For instance, in one meeting, the role model emphasized several times that his entire career developed within the public education system, suggesting minimal economic costs for his family. Additionally, role models can serve as sources of inspiration, encouraging students to revise their preferences as they feel more confident in achieving goals that once seemed unattainable.

We classify students' intentions regarding tracking by constructing an indicator which takes the value of one for students intending to enroll in upper secondary education, specifically in the academic oriented track.[17] While completing this track is not a formal requirement for university enrollment (as explained in Section 2), it is widely perceived as the path that best equips students with the knowledge needed for a university career.

The first column of Table 5 shows the analysis of students' tracking intentions, expressed six months after the intervention when students began their final year of middle school. Although none of the coefficients are statistically significant at conventional levels, all point estimates are positive and relatively large. In the model without controls, the treatment effect is approximately 4.5 pp, representing a 6 percent increase compared to the control group mean of 76.5 percent. The effect is sightly smaller in the models with

[16]The analysis of administrative records below further supports the idea that social desirability bias is minimal in this context. Additionally, it is important to note that all outcomes were measured at least six months after the intervention, following a summer break of approximately three months during which students were not in school.

[17]We classify the following school tracks as part of the academic-oriented track: scientific lyceum, classical lyceum, artistic lyceum, linguistic lyceum, musical and choreutic lyceum, and human sciences lyceum. For more information, visit the MIUR website: https://www..gov.it/scuola-secondaria-di-secondo-grado

controls.

Table 5: Treatment Effects on Tracking

	Aspire to Academic Track	Enrolled in Academic Track
Panel A: No Controls		
ORME treatment	0.045	0.083
	(0.044)	(0.060)
Panel B: Controls		
ORME treatment	0.024	0.060
	(0.037)	(0.051)
Panel C: Full Set of Controls		
ORME treatment	0.034	0.067
	(0.036)	(0.049)
Control Group Mean	0.765	0.714
Obs	478	469

Notes: This table shows the treatment effects of the ORME program on students' school aspirations and choices. "Aspire to Academic Track" is an indicator variable that equals 1 if the student aspires to enroll in an academically oriented track. "Enrolled in Academic Track" is a dummy variable equal to 1 if the student is enrolled in an academic track Panel A reports results without controls. Panel B includes a set of basic controls such as the sex and education levels of the parents. Panel C incorporates a full set of controls, adding variables like parents' occupations, self-esteem index, and the baseline analogue of the outcome variable when available. Missing information is imputed. All specifications are estimated using linear probability models and include school fixed effects. The "ORME treatment" variable indicates whether a student was exposed to the ORME program. The "Control Group Mean" at the bottom of the table shows the average value of each outcome variable for students in the control group. Robust standard errors clustered at the classroom level are shown in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

First, as with tracking preferences, all point estimates are positive, large, and consistent across specifications, though statistically insignificant at conventional levels. Second, the comparison between students' stated intentions and their actual tracking choices reveals remarkably similar estimates. This similarity between self-reported intentions and actual administrative data suggests that students' responses are unlikely to be significantly influenced by social desirability bias.

In summary, the analysis of tracking intentions and choices is not precise enough to draw definitive conclusions. However, the effect sizes and consistency across specifications and data sources suggest a possible positive treatment effect of ORME, potentially encouraging

some students to pursue the more academic-oriented and challenging school track.

Standardized test scores. To assess whether the reported increase in effort translates into actual school engagement, we analyze the intervention's treatment effect on standardized test scores obtained through INVALSI. Participation in the INVALSI test is mandatory for admission to the middle school final exam, which is a prerequisite for completing the school cycle. The test results are categorized into levels that indicate the extent to which a student can apply the skills, knowledge, and abilities acquired throughout their education. For both Italian and mathematics, there are five competence levels, while English is assessed using three levels aligned with the Common European Framework of Reference for Languages (CEFR).

The levels for the standardized tests in Italian and mathematics are defined as follows:

- **Level 1:** Very weak result, corresponding to the learning goals expected at the end of primary school (Grade 5).
- **Level 2:** Weak result, not in line with the learning goals set for the end of lower secondary school (Grade 8).
- **Level 3:** Adequate result.
- **Level 4:** Good result.
- **Level 5:** Very good result.

For English, the levels are:

- **Pre-A1:** Very weak result, below the expected standard for exiting primary school (Grade 5).
- **A1:** Result not in line with national guidelines.
- **A2:** Level of competence required by national guidelines.

We define outcomes as indicator variables based on the knowledge levels described above. For Italian and mathematics, the indicator variable takes a value of one if the student achieves at least Level 3, indicating an adequate level of competence. For English, the indicator variable takes a value of one if the students achieves Level A2.

Table 6 reports the impact of ORME on standardized test scores, broken down by subject. As mentioned in Section 1, standardized test data is available for only four out of the five schools due to a leadership change in one school. Therefore, we consider this analysis suggestive of the potential impact of ORME on school performance. Given these considerations, ORME shows some treatment effects on students' performance: students exposed to ORME are 9 percentage points (+13 percent) more likely to achieve a sufficient level on the Italian language test compared to the control group. This result remains robust across different empirical specifications. Conversely, no significant effects are observed on mathematics or English scores. Overall, the program appears to have positively influenced performance in Italian, while leaving performance in mathematics and English unchanged.

Table 6: Treatment Effects on Standardized Test Scores

	Mathematics	Italian	Eng Reading	Eng Listening
Panel A: No Controls				
ORME treatment	0.006	0.090*	0.004	-0.072
	(0.059)	(0.045)	(0.041)	(0.052)
Panel B: Controls				
ORME treatment	0.007	0.087**	0.004	-0.069
	(0.054)	(0.039)	(0.040)	(0.049)
Panel C: Full Set of Controls				
ORME treatment	0.024	0.094**	0.010	-0.063
	(0.057)	(0.042)	(0.042)	(0.047)
Control Mean	0.651	0.691	0.863	0.709
Obs	352	352	352	352

Notes: This table shows the treatment effects of the ORME program on students' standardized test scores. The outcomes variables are coded as dummy indicators. For Italian and mathematics, a value of 1 is assigned if a student achieves at least Level 3, indicating an adequate level of competence. In the case of English, a value of 1 is assigned for students at Level A2. Panel A reports results without controls. Panel B includes a set of basic controls such as the sex and education levels of the parents. Panel C incorporates a full set of controls, adding variables like parents' occupations and a self-esteem index. Missing information is imputed. All specifications are estimated using linear probability models and include school fixed effects. The "ORME treatment" variable indicates whether a student was exposed to the ORME program. The "Control Group Mean" at the bottom of the table shows the average value of each outcome variable for students in the control group. Robust standard errors clustered at the classroom level are shown in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

5 Scalability of the ORME Intervention

The ability to scale an intervention is crucial for achieving a broader social impact. In this section, following List (2022), we discuss the factors that may hinder the potential of scaling.

False positives: A common concern in scaling interventions is that initial results may be due to chance and might not replicate in subsequent program rollouts. In our framework, several elements mitigate this risk. First, we preregistered our main outcomes before data collection (RCT ID #AEARCTR-0007567), ensuring that our analysis follows pre-specified, theory-driven criteria rather than post hoc findings.[18] Additionally, we combined self-reported measures from in-class surveys with administrative data to enhance the reliability of our results. Self-reported outcomes, such as students' beliefs, aspirations, effort, and school tracking preferences, are cross-validated with objective data, including standardized test scores and official school enrollment records, reducing the risk of false positives. Finally, a small pilot with similar results was conducted in a different set of schools during the previous school year.

Audience representativeness: Another potential challenge to scalability is the representativeness of the initial sample, specifically whether the program would have similar effects in other contexts. Although only five schools participated in ORME, they are broadly representative of schools (and their variability) within the Campania region. Section 3.2 provides details on the school selection process.

1. *Socio-economic status*: The schools participating in ORME are located in economically fragile areas, which tend to have higher proportions of students from lower-income households but remain broadly representative of the region's overall conditions. For example, the provinces where these five schools are situated—Napoli, Avellino, and Caserta—experience significant challenges with youth unemployment, which exceeds the national average of 22.7 percent but aligns with the regional average of 40 percent (ISTAT, 2024).

2. *Educational facilities and resources*: The website *"Scuola in Chiaro"* provides information on various aspects, including the number of classes, students, school person-

[18] In the registration, we mention two meetings with role models for each treated class. Due to the intervention taking place at the end of the school year, we limited it to a single meeting.

nel, and school facilities.[19] According to the data available on the platform, the five participating schools have, on average, a similar number of students and comparable levels of school resources as the typical school in Campania.

3. *Geographical infrastructure and resources*: Schools, particularly in densely populated areas, may face constraints related to infrastructure and resources. To assess this, we compared the municipalities where the schools part of the project are located using ISTAT's Municipal Fragility Index (MFI).[20] We find that, in this case as well, our sample effectively represents the existing local variability among schools. On the one hand, Naples and Caserta exhibit higher fragility compared to the Campania average. Factors such as dense population, high unemployment, and concentrated poverty contribute to elevated fragility levels, making these areas more vulnerable than many others in Campania (ISTAT, 2021). Avellino, on the other hand, aligns more closely with the regional baseline.

Overall, the schools participating in ORME reflect the diversity of schools in Campania. As outlined in Section 2, Campania consistently underperforms compared to other regions in Italy and Europe across several socio-economic indicators. However, ORME is specifically designed for implementation in high-risk areas, which are common across many countries, highlighting the potential for programs like ORME to be scaled more broadly. Additionally, ORME was designed to select role models who share similar socio-economic and geographic backgrounds with the students, making the program highly adaptable to various audiences and school environments.

Unscalable ingredients: Many school programs struggle to maintain high-quality standards when scaled up, as key inputs like teaching quality or materials can be challenging to replicate on a larger scale. ORME addresses this challenge by using standardized online meetings guided by pre-set guidelines for the role models' presentations. While role models have the freedom to personalize their presentations, they are asked to cover essential topics

[19] *Scuola in Chiaro* is a project launched in Italy in 2011 by MIUR (Ministry of Education, University, and Research) aimed at providing the public with comprehensive and organized information about Italian schools at all levels. For further information, visit http://cercalatuascuola.istruzione.it/cercalatuascuola/

[20] The Municipal Fragility Index (MFI) from ISTAT provides a framework to assess the socio-economic and environmental vulnerabilities of Italian municipalities. This composite index includes indicators covering socio-demographic characteristics, economic productivity, environmental conditions, and local infrastructure. For more information, visit https://www.istat.it/en/press-release/municipal-fragility-index-ifc/

highlighted by role model theory (Morgenroth et al., 2015), including their territorial origin, educational journey, current occupation, and challenges they have faced. This approach ensures consistency in content quality across all sessions. Additionally, since the program is delivered online, logistical constraints, such as geographic location or scheduling, minimally impact the quality of interactions or the likelihood of sessions taking place.

A potential challenge arises, however, if a school lacks internet access. Although internet connectivity is not universal, it is becoming increasingly common, with digitalization efforts advancing steadily. In Italy, for instance, initiatives like the *Connected Schools Plan* by the Ministry of Economic Development aim to provide internet access to every school, with completion targeted by 2023.[21] At the international level, the United Nations has set a goal to connect every school to the internet by 2030 (International Telecommunication Union, 2024). Thus, this potential barrier is gradually being addressed through ongoing efforts to improve equal access to the internet.

Cost traps: While many programs become less cost-effective as they scale, ORME maintains its efficiency through its use of digital platforms. Online meetings, which can accommodate multiple classes simultaneously, allow the program to scale without a significant increase in resources or time. Unlike in-person mentoring programs, which are costly and challenging to expand, ORME's digital format ensures economic feasibility in scaling. The program requires minimal school time (one-hour sessions), and each session can reach a large number of students, maximizing its impact without additional costs.

Negative spillovers: Negative spillovers can pose challenges to scaling interventions like ORME. While the program positively impacts school aspirations and tracking choices, it raises concerns about potential general equilibrium effects. Although there are no formal capacity limits on the total number of students admitted to each school in Italy, constraints on teaching quality and physical classroom space could potentially offset ORME's positive effects. The analysis of tracking choices, though not precise enough for definitive conclusions, indicates a positive trend toward more challenging high school tracks. Importantly, ORME does not aim to direct all students toward more demanding academic paths. Instead, it seeks to empower those who aspire to these tracks by removing barriers that may undermine their confidence in succeeding in such environments. Overall, while the

[21] The Ministry of Economic Development in Italy developed the *Connected Schools Plan* to ensure internet access across all schools. Despite some delays, this remains a primary goal. For further information, visit https://bandaultralarga.italia.it/scuole-voucher/progetto-scuole/

effects on tracking choices remain uncertain, the program positively influences students' perceptions of effort-related success, improves the alignment between their aspirations and expectations, and enhances school engagement. These positive outcomes benefit not only students but also parents and teachers, regardless of the students' eventual educational paths.

6 Conclusion

We designed and implemented ORME, an innovative, cost-effective, and scalable online mentoring program aimed at enhancing students' aspirations and beliefs. ORME seeks to inspire students by connecting them with successful individuals whom they perceive as similar to themselves, both geographically and socio-economically. We tested ORME's effectiveness in middle schools in Campania, Italy—a region where students often lack awareness of, or miss out on, opportunities to pursue specific educational and career paths.

ORME enhances students' perceptions of the returns to effort, strengthens the alignment between their career aspirations and their confidence to achieve them, and increases their school effort. While these effects are most evident in beliefs and self-reported outcomes, administrative data also suggest potential positive impacts on school tracking choices and standardized test performance.

As our intervention was recently implemented, only short-term findings are available. For example, it remains uncertain how changes in tracking choices may translate into future academic and non-academic success. Nevertheless, ORME has shown improvements in students' beliefs about the returns to effort, school engagement, and self-confidence in reaching personal goals. Based on these early findings, future research should examine whether the treatment effects persist over time and explore whether these changes contribute to outcomes such as labor market success and broader life satisfaction.

While some questions about the long-term effects remain unanswered in this study, our research raises important considerations regarding the content and approach of educational curricula. Should school curricula incorporate soft-skills training and aspiration-building programs alongside traditional subjects? Our findings indicate that early exposure to relatable role models can significantly shape students' beliefs and motivations, suggesting

that structured role model initiatives could effectively complement conventional teaching. Such approaches may be especially valuable in less advantaged areas, where aspirations are often limited by socio-economic constraints.

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A Appendix

Table A1: Descriptive Statistics

	Mean	SD	Min	Max
Educational Aspirations and Ambitions				
Academic track	0.81	0.39	0.00	1.00
Technical track	0.12	0.33	0.00	1.00
Vocational track	0.04	0.21	0.00	1.00
Not sure track	0.02	0.14	0.00	1.00
Baseline Child Characteristics				
Female	0.51	0.50	0.00	1.00
Index Self-Esteem	0.71	0.19	0.20	1.00
Index Grit	0.71	0.14	0.30	1.00
Index Locus of Control	0.73	0.11	0.23	1.00
Baseline Household Characteristics				
Migrant background	0.06	0.24	0.00	1.00
Only child	0.15	0.36	0.00	1.00
Number of siblings: One	0.59	0.49	0.00	1.00
Child lives with single parent	0.09	0.29	0.00	1.00
Mother works	0.78	0.41	0.00	1.00
Mother's education: University	0.50	0.50	0.00	1.00
Father's education: University	0.36	0.48	0.00	1.00

Notes: This table shows the descriptive statistics in the baseline sample. SD stands for Standard Deviation.

Table A2: Summary Statistics Outcome Variables

	Mean	SD	Min	Max
Aspire to Academic track	0.79	0.41	0.00	1.00
Enrolled Academic Track	0.70	0.46	0.00	1.00
Index Grit	0.72	0.13	0.32	1.00
Aspire=Expect	0.49	0.50	0.00	1.00
Effort	0.55	0.50	0.00	1.00
Returns to Effort, Non-Wealthy Family	37.17	28.28	-68.00	100.00
Returns to Effort, Wealthy Family	23.85	24.47	-90.00	100.00
Returns to Wealth, High Effort	13.76	21.87	-48.00	100.00
Returns to Wealth, Low Effort	27.08	31.01	-70.00	100.00

Notes: This table shows the summary statistics for the outcome variables. SD stands for Standard Deviation.

Table A3: Attrition and Treatment Arm

	(1) Child observed in baseline	(2) Child observed in endline
ORME treatment	0.072	-0.003
	(0.080)	(0.043)
Obs	645	645
R-Squared	0.080	0.063
School FE	YES	YES

Notes: This table reports the coefficients from a linear probability model. The dependent variable is an indicator variable for having completed the baseline (column 1) and endline survey (column2). 'ORME treatment' is an indicator variable for being exposed to the ORME program. Clustered (classroom) standard errors in parentheses. ***, ** and * denote significance at the 1, 5 and 10 percent level, respectively.

B Questionnaire

B.1 Students' questionnaire

We report the survey administered at baseline.

Hello!

We would like to ask you a small favor: could you answer the following questions? The survey is anonymous and will only take a few minutes. Please read the instructions carefully and be sure of your answers before moving on.

According to the ethical code of the Italian Psychological Association, you can withdraw your participation in the study at any time without any consequences. In addition, in accordance with the law (http://www.camera.it/parlam/leggi/deleghe/Testi/03196dl.htm), the data collected will be stored anonymously, treated according to current laws, and the research results will be used anonymously and for scientific purposes only.

Thank you very much for your participation and collaboration!

Questions

Q1. What is your favorite sport? You can select up to three options:

- ☐ Swimming
- ☐ Volleyball
- ☐ Basketball
- ☐ Football
- ☐ Dance
- ☐ Martial arts
- ☐ Rugby

☐ Gymnastics

☐ Boxing

☐ I don't like any sports

Q2. Do you play a musical instrument?

☐ No

☐ Yes, which one? _____

Q3. Are most of your friends boys, girls, or a mix of both?

☐ Mostly boys

☐ Mostly girls

☐ Half and half

Q4. What are your favorite subjects in school? You can select up to three:

☐ Math

☐ Science

☐ Italian

☐ Foreign languages

☐ History and geography

☐ Art

☐ Technology

Q5. Who is the person you look up to the most? _____

Q6. What would you like to do when you grow up? _____

Q7. What do you think you will actually be when you grow up? _____

Q8. Do you already know which high school you will choose?

☐ Yes, I'm sure or almost sure

☐ I still have some doubts

☐ I don't know yet

Q9. If you had to choose now, which high school would you pick?

☐ Academic high school (Liceo)

☐ Technical institute

☐ Professional institute

☐ Other, which one? _____

Q10. What school track would you choose in high school? _____

Q11. How do you think you will finish your education?

☐ I will leave school as soon as I can

☐ I will finish high school, but I don't think I will continue

☐ I will finish high school and go to university

☐ I will finish high school and go to an art, music, or dance academy

Socio-Emotional Skills and Individual Traits.

Q12. **Self-esteem** (adapted from Rosenberg (1965)). For each of the following statements, give a score from 0 to 5 indicating whether you agree or disagree with the statement.

1. On the whole, I am satised with myself
2. I feel that I have a number of good qualities
3. I am able to do things as well as most other people

Q13. **Grit** (following Duckworth and Quinn (2009) and adapted by Carlana and La Ferrara (2024)). For each of the following statements, give a score from 0 to 5 indicating whether you agree or disagree with the statement.

1. I prefer homework that requires more effort, even if I make many mistakes.
2. Setbacks discourage me.
3. If I think I will lose in a game, I do not want to continue playing.
4. If I set a goal and see that it's harder than I thought I easily lose interest.
5. When I receive a bad result on a test I spend less time on this subject and focus on other subjects that I'm actually good at.
6. I work hard in homework.

7. I prefer easy homework where I can easily answer all questions correctly.
8. If I'm having difficulty in a homework, it is a waste of time to keep trying. I move on to things which I am better at doing.

Q14. **Locus of Control** (adapted from Rotter (1966)). For each of the following statements, give a score from 1 to 5 indicating whether you agree or disagree with the statement.

1. Many of the bad things in people's lives are partly due to bad luck.
2. Relying on luck has turned out to be better for me than deciding to follow a certain plan.
3. If a student is well-prepared, they rarely get a negative result.
4. When I make plans, I am almost certain I can achieve them.
5. When I get what I want, it is usually because I worked hard to obtain it.
6. Some people have fewer opportunities because they come from less wealthy families.
7. When I see a wealthy person in my city, I think they deserve it.

Considering the following professions.

Q15. According to you, out of 100 engineers in Italy, how many are women?

☐ Less than 20

☐ Between 20 and 40

☐ Between 40 and 60

☐ Between 60 and 80

☐ More than 80

Q16. According to you, out of 100 shop assistants in Italy, how many are women?

☐ Less than 20

☐ Between 20 and 40

☐ Between 40 and 60

☐ Between 60 and 80

☐ More than 80

Q17. According to you, out of 100 journalists in Italy, how many are women?

- ☐ Less than 20
- ☐ Between 20 and 40
- ☐ Between 40 and 60
- ☐ Between 60 and 80
- ☐ More than 80

We will now show you a statement and ask you to indicate how much you agree with it. You can respond using the provided scale where 1 means "not at all agree" and 5 means "very much agree." There are no right or wrong answers, so please respond honestly.

Q18. Women are more suited to do household chores than men.

Q19. Would you move to another city for study or work? You can express your preference using the provided scale for each statement, where 0 means "for no reason" and 10 means "for sure."

Socio-demographic information

Q20. Would you indicate your gender?

- ☐ Male
- ☐ Female
- ☐ Other
- ☐ I would prefer not to say

Q21. What month were you born in?

Q22. What year were you born in?

Q23. What language or dialect is spoken at home?

- ☐ Italian
- ☐ Campanian dialect
- ☐ Another dialect

☐ Another language

Q24. Who do you live with at home?

☐ Mom and dad

☐ Only dad

☐ Only mom

☐ Mom and her new partner

☐ Dad and his new partner

☐ Other: _____

Q25. Do you have sisters?

☐ No

☐ One

☐ Two or more

Q26. Do you have brothers?

☐ No

☐ One

☐ Two or more

Q27. What education did your mom complete?

☐ Middle school or less

☐ High school

☐ University

☐ I don't know

Q28. What education did your dad complete?

☐ Middle school or less

☐ High school

☐ University

☐ I don't know

Q29. Does your mom currently work?

- ☐ Yes
- ☐ Occasionally
- ☐ No

Q30. What is your mom's most recent profession?

- ☐ Stay-at-home
- ☐ Self-employed (shops, small businesses, artisan workshops)
- ☐ Entrepreneur
- ☐ Freelancer (doctor, dentist, lawyer, notary, architect, accountant...)
- ☐ Manager (bank manager, university professor...)
- ☐ Employee (teacher, nurse, army/police)
- ☐ Factory worker/manual laborer
- ☐ I don't know

Q31. Does your dad currently work?

- ☐ Yes
- ☐ Occasionally
- ☐ No

Q32. What is your dad's most recent profession?

- ☐ Stay-at-home
- ☐ Self-employed (shops, small businesses, artisan workshops)
- ☐ Entrepreneur
- ☐ Freelancer (doctor, dentist, lawyer, notary, architect, accountant...)
- ☐ Manager (bank manager, university professor...)
- ☐ Employee (teacher, nurse, army/police)
- ☐ Factory worker/manual laborer
- ☐ I don't know

Q33. Do you have a computer or tablet at home?

- ☐ Yes
- ☐ No

Q34. If yes, how many computers do you have at home?

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4 or more

Q35. If yes, how many tablets do you have at home?

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4 or more