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Mentoring Improves the School-to-work Transition of Disadvantaged Adolescents

A successful transition from school to professional life is pivotal for the future employment prospects of young individuals (Ryan 2001). This transition requires acquiring a professional qualification and promptly securing employment. However, approximately 18 percent of young people in Germany (aged 20–34) fail to obtain a professional degree (Bundesinstitut für Berufsbildung 2023). Those from disadvantaged backgrounds often face particularly challenging transitions, resulting in unemployment, discontinuation of professional training, and unclear career objectives. Attaining a professional qualification is imperative for success in the German labor market: individuals with a completed apprenticeship (or a similar credential) face a mere 3 percent unemployment rate, whereas those without a completed qualification encounter an unemployment rate as high as 20 percent (Bundesagentur für Arbeit 2023).

What strategies can be employed to enhance the labor-market prospects of adolescents from disadvantaged backgrounds? One promising approach is through mentoring programs that pair these adolescents with voluntary mentors, focusing on developing their individual potential and helping them to plan for the future. While the effectiveness of various early childhood support programs is well documented (e.g., Cunha et al. 2006; Almond et al. 2018; Kosse et al. 2020), the literature has paid little attention to interventions targeting the labor-market opportunities of adolescents. In our new study (Resnjanskij et al. 2024), we investigate the impact of mentoring on the labor-market prospects of adolescents.¹

THE MENTORING PROGRAM

We evaluate the effectiveness of one of the largest mentoring programs for disadvantaged adolescents in Germany. The aim of the program “Rock Your Life!” is the successful transition of adolescents from lower secondary school to an apprenticeship or upper secondary school. The program, founded 15 years ago by a group of university students, has since brought

¹ The underlying research paper, “Can Mentoring Alleviate Family Disadvantage in Adolescence? A Field Experiment to Improve Labor-Market Prospects”, is forthcoming in the *Journal of Political Economy*. This summary was first published on [VoxEU.org](https://voxeu.org).

KEY MESSAGES

- **Mentoring programs can strongly improve the transition from school to work for disadvantaged adolescents**
- **Results from our field experiment indicate that a German mentoring program markedly boosts school achievement, patience, and labor-market orientation of students from highly disadvantaged backgrounds**
- **The effects on math grades and labor-market orientation extend beyond the end of the program**
- **Three years after program start, the mentoring program substantially increases the share of disadvantaged adolescents who start an apprenticeship, a vital step for success in the German labor market**
- **The results show that substituting a lack of family support with other adults can help disadvantaged children in adolescence**

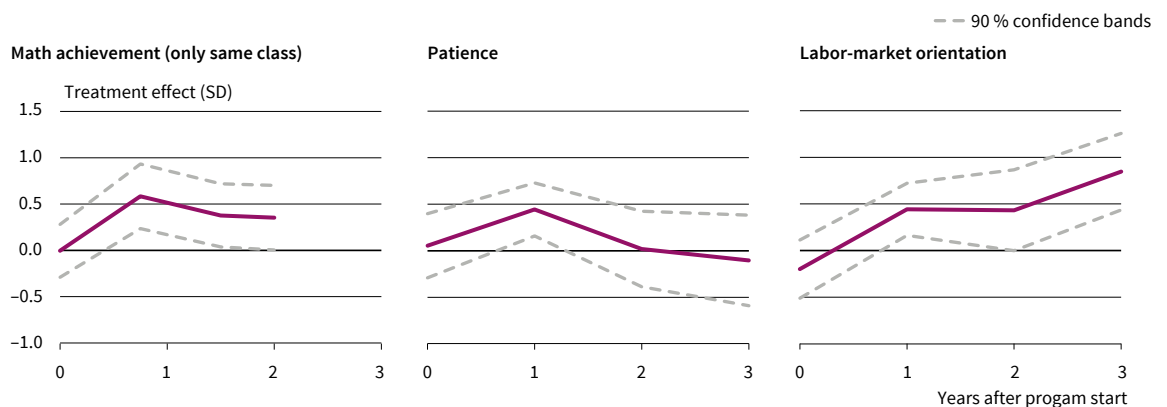
together more than 10,000 mentoring pairs at over 50 locations in five countries.

The program predominantly targets adolescents from disadvantaged backgrounds, a group that often receives only limited support from their families. It aims at students in eighth and ninth grades (on average 14 years old) who attend lowest-track secondary schools in disadvantaged neighborhoods. The volunteer mentors are university students who meet with the adolescents regularly (about once every two weeks) over a period of one to two years. They support the adolescents in coping with stressful situations at school or at home and offer them guidance for navigating the labor market.

EXPERIMENTAL EVALUATION

To investigate the effectiveness of the mentoring program, we conducted a large-scale field experiment. Our study comprises 308 adolescents in two cohorts at 19 schools in ten German cities. When the number of applicants exceeded the available program slots at a specific location, we used a lottery to determine participation. The randomized allocation into partici-

Figure 1
Effect of Mentoring on Labor-market Prospects of Low-SES Adolescents



Note: Figure shows the effects of the mentoring program on math achievement, patience, and labor-market orientation of low-SES adolescents over time. All outcome variables are standardized so that effect sizes can be interpreted in standard deviations (SD). Depicted effects are based on a regression with control variables. Source: Resnjanskij et al. (2024). © ifo Institute

pants (treatment group) and non-participants (control group) ensures that the only significant difference between the two groups is their participation in the mentoring program. Consequently, the causal effect of program participation (treatment effect) can be estimated by comparing the two groups (see Resnjanskij et al. 2024 for further information on the study’s design).

We surveyed adolescents in four rounds. The first survey was conducted before the start of the mentoring program in the local schools. With substantial efforts in administering the surveys, we successfully re-interviewed 99 percent of the adolescents either at school or via telephone one year after program start. The two-year follow-up survey was conducted partially in school, online, and by telephone, while the three-year follow-up was exclusively online and achieved an 88 percent participation rate.

Our expectation before conducting the study was that the mentoring program would be particularly effective for highly disadvantaged adolescents, due to their severe lack of family support. Using a multidimensional measure that reflects various facets of socio-economic status (SES), we classified adolescents as highly disadvantaged if one of the following conditions applies:

- Lack of educational support: neither parent has a university degree and there are few (less than 25) books at home.

- Lack of economic or time support: single-parent household and few books at home.
- Lack of language or institutional support: first-generation migrant (i. e., born abroad).

Utilizing this SES measure, we divided the sample into two approximately equal groups: highly disadvantaged (low-SES) and less disadvantaged (higher-SES) adolescents.² In this column, we focus on the effects of the mentoring program on highly disadvantaged adolescents. There are no positive program effects for adolescents from less disadvantaged backgrounds.

STRONG EFFECTS ON LABOR-MARKET PROSPECTS OF DISADVANTAGED ADOLESCENTS

We start by looking at the effect of the mentoring program on three outcome measures that are highly predictive of adolescents’ future labor-market opportunities: their math grades as a cognitive component, their future orientation as a non-cognitive component, and their labor-market orientation as a motivational component (see Resnjanskij et al. 2024 for details). One year after program start, when the participants are still in school, the math grades of the highly disadvantaged adolescents improve considerably due to

² The results are qualitatively similar if we measure SES based solely on books at home, parents’ educational background, or first-generation migration status.



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participating in the mentoring program (Figure 1). The treatment effect on math achievement is 0.58 standard deviations (corresponding to an improvement by 0.80 grade steps on the German scaling system). There are also positive short-run effects of program participation on adolescents' future orientation (patience) and their labor-market orientation, both of which increase by 0.44 standard deviations. When we combine the three components into one index of overall labor-market prospects, the one-year treatment effect amounts to 0.64 standard deviations.³

The positive effect on math grades persists until the end of lower secondary school, still amounting to 0.35 standard deviations or 0.48 grade steps (Figure 1). In contrast, the effect on patience dissipates after the first year. The positive effect on labor-market orientation not only persists but also intensifies over time, reaching 0.85 standard deviations three years after program start.

APPRENTICESHIP PARTICIPATION INCREASES BY 29 PERCENTAGE POINTS

Three years after program start, a majority (56 percent) of the adolescents, now between 16 and 19 years old, are still in school. However, a substantial portion of adolescents has already entered the labor market at this point. For them, and particularly for the highly disadvantaged in lowest-track schools, securing an apprenticeship is a critical measure of labor-market success and a primary objective of the mentoring program.⁴ While the complete transition of all participants into the labor market will unfold over several years, the initial shift from school to work, which is already observable, offers early insights into their labor-market trajectories.

Our results show that the mentoring program significantly increases the share of highly disadvantaged adolescents commencing an apprenticeship. Three years after program start, there is a notable increase of 29 percentage points in apprenticeship participation among treated adolescents. This corresponds to more than a doubling of the share observed in the control group (Figure 2).

Adolescents not engaged in an apprenticeship either continue to attend school (often in a preparatory system with unclear effectiveness), pursue other work-related activities, or are unemployed.⁵ Our findings indicate that the treatment effect on apprenticeship participation primarily stems

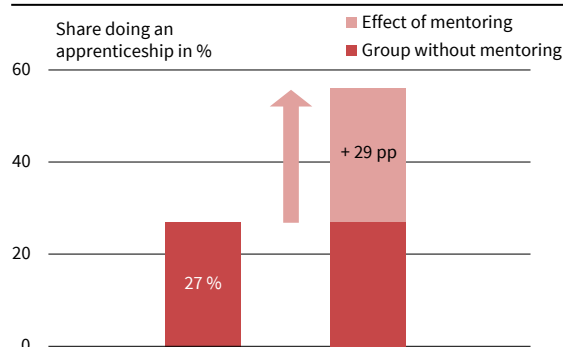
³ The program effect for the full sample, including higher-SES adolescents, is marginally significant at 0.15 standard deviations, but the point estimate in the higher-SES sample is negative and statistically not significantly different from zero.

⁴ An apprenticeship is the most promising career path for most students from low-track schools, especially for those with a non-academic family background. It offers considerable returns on the labor market (e. g., Fersterer et al. 2008; Piopiunik et al. 2017).

⁵ This category also comprises other non-school or non-work-related activities.

Figure 2

Mentoring Helps Disadvantaged Adolescents to Start an Apprenticeship



Note: Figure shows the share of low-SES adolescents who have started an apprenticeship three years after program start. Left bar: adolescents without mentoring (control group); right bar: adolescents with mentoring (treatment group). The depicted effect of the mentoring program is based on a regression with control variables.

Source: Authors' depiction based on Resnjanskij et al. (2024).

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from reductions in continued school attendance (by 21 percentage points) and unemployment (by 12 percentage points), but not in other work-related activities (increase of 3 percentage points).

The adolescents' improved school performance and labor-market orientation, discussed above, likely are primary factors contributing to the increased apprenticeship participation. Another potential explanation is the development of more realistic career expectations, especially regarding the likelihood of successfully completing a university degree. In the control group, as many as 63 percent of highly disadvantaged adolescents think they are able to complete a university degree, which contrasts sharply with the actual 10 percent completion rate in this group – which reduces even further to just 2 percent for those with a lower-track school education (own calculations based on PIAAC data (see Resnjanskij et al. 2024). Participation in the mentoring program reduces the self-assessed likelihood of university completion by 13 percentage points, suggesting more accurate expectations.⁶ This result may indicate that the mentors, who are university students themselves, provide mean-

⁶ At the same time, the mentoring program does not significantly affect the self-assessed probability of completing an apprenticeship or the expected earning returns of completing a university degree or an apprenticeship.



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ingful advice about the requirements for successful university graduation.

Program participants' more realistic expectations regarding career opportunities do not diminish their satisfaction with the current situation. In fact, treated adolescents view their current career path as more desirable, showing a 31 percentage-point increase in satisfaction with their current situation compared to the control group. Furthermore, they are also more inclined to maintain their current situation without seeking change, with a treatment effect of 22 percentage points.

However, it is important to consider whether these pronounced effects on satisfaction might be indicative of less ambitious career goals or a lack of awareness about potentially better outcomes achievable through continued education. To address these potential concerns, we predict the expected earnings based on either the adolescents' actual apprenticeship occupation or their desired occupation.⁷ Low-SES adolescents who participated in the mentoring program can expect to earn EUR 3,066 per month if they continue to work in their current apprenticeship occupation, compared to only EUR 2,746 in the control group. This gap narrows only slightly when considering desired occupations (EUR 3,406 compared to EUR 3,184). Thus, mentoring does not lead to diminished career ambitions; rather, treated adolescents aspire to higher-paying jobs. Additionally, the occupations they seek are less susceptible to automation (e.g., Autor 2022), with an automation probability of 37 percent in the treatment group compared to 43 percent in the control group. Overall, these findings suggest that the mentoring program effectively facilitates a smoother transition into the labor market for low-SES adolescents.

POLICY CONCLUSION

We show that mentoring programs can successfully improve the future employment opportunities of highly disadvantaged adolescents. Improvements in math performance and labor-market orientation extend beyond the duration of the program. We also

⁷ Using register data from the Federal Employment Agency, we calculate the median earnings that adolescents can expect if they were to work in their chosen or desired occupation.

observe positive program effects on early realizations of the labor-market transition, particularly on the share of adolescents who start an apprenticeship. Mentoring therefore appears to be a viable option for increasing the prospects of highly disadvantaged individuals – not only in childhood, but also in adolescence. In contrast, the program has no positive impact on adolescents from more advantaged backgrounds, who apparently do not lack parental support that would need to be compensated.

A key policy implication is the necessity of targeting mentoring programs specifically at highly disadvantaged adolescents to optimize their effectiveness. Cost-benefit calculations suggest that such targeted initiatives are remarkably cost-effective: rough calculations indicate a benefit-cost ratio of 18:1 for a program focused on highly disadvantaged adolescents. Moreover, considerations regarding scalability hint at the extensive potential reach of such mentoring programs.

REFERENCES

- Almond, D., J. Currie and V. Duque (2018), "Childhood Circumstances and Adult Outcomes: Act II", *Journal of Economic Literature* 56, 1360–1446.
- Autor, D. (2022). "The Labor Market Impacts of Technological Change: From Unbridled Enthusiasm to Qualified Optimism to Vast Uncertainty", *NBER Working Paper* 30074.
- Bundesagentur für Arbeit (2023), *Qualifikationsspezifische Arbeitslosenquoten*, Nürnberg.
- Bundesinstitut für Berufsbildung (Ed., 2023), *Datenreport zum Berufsbildungsbericht 2023 – Informationen und Analysen zur Entwicklung der beruflichen Bildung*, Bonn.
- Cunha, F., J. J. Heckman, L. Lochner and D. V. Masterov (2006), "Interpreting the Evidence on Life Cycle Skill Formation", in E. A. Hanushek and F. Welch, eds., *Handbook of the Economics of Education*, Vol. 1, North Holland, Amsterdam, 697–812.
- Fersterer, J., J. S. Pischke and R. Winter-Ebmer (2008), "Returns to Apprenticeship Training in Austria: Evidence from Failed Firms", *Scandinavian Journal of Economics* 110, 733–753.
- Kosse, F., T. Deckers, P. Pinger, H. Schildberg-Hörisch and A. Falk (2020), "The Formation of Prosociality: Causal Evidence on the Role of Social Environment", *Journal of Political Economy* 128, 434–467.
- Piopiunik, M., F. Kugler and L. Woessmann (2017), "Einkommenserträge von Bildungsabschlüssen im Lebensverlauf: Aktuelle Berechnungen für Deutschland", *ifo Schnelldienst* 70(7), 19–30.
- Ryan, P. (2001), "The School-to-Work Transition: A Cross-National Perspective", *Journal of Economic Literature* 39, 34–92.
- Resnjanskij, S., J. Ruhose, S. Wiederhold, L. Woessmann and K. Wedel (2024), "Can Mentoring Alleviate Family Disadvantage in Adolescence? A Field Experiment to Improve Labor-Market Prospects", *Journal of Political Economy*, Forthcoming.