OECD Education Spotlights

Directorate for Education and Skills

Aligned ambitions? How to tell (and why it is important to know) if students' occupational and education plans are aligned

By the age of 15, most students have a clear idea about both the type of job they expect to have around the age of 30 and the highest level of education they anticipate completing. Longitudinal studies find that it matters if educational ambitions align with the typical entry requirements of anticipated employment. Notably, students with high and aligned ambitions are commonly found to do better in work as young adults than peers who expect to work in a job that typically requires tertiary-level entry qualifications, but do not intend to achieve such a level of education. Across the OECD, such misalignment is common, especially among students from more disadvantaged social backgrounds.

This Policy Brief draws on evidence from the OECD Career Readiness project to explore:

- What is career alignment and misalignment?
- What difference does it make to student outcomes in employment?
- How common is it among students?
- How can guidance systems respond to career misalignment?

What is career alignment and misalignment?

Over recent years, researchers have made increasing use of large datasets to explore the relationship between forms of teenage career development and better employer prospects. Longitudinal datasets which follow the same cohort of young people from age 15 to age 25 have been especially valuable in identifying teenage career activities, experiences and attitudes that can be most strongly associated with later comparative success in employment (Covacevich et al., 2021[1]). This policy brief summarises evidence related to one aspect of student career thinking: career alignment and misalignment. First conceived by (Schneider and Stevenson, 1999[2]), the concept draws on the answers to two simple questions asked of teenagers: what type of job do you expect to have in adulthood? And what is the highest level of education you expect to complete?

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Career expectations are seen as aligned when students plan on securing levels of education that would typically allow entry into their planned occupation. Students who plan on working as a senior manager or professional and who anticipate attending university education are typically described as having *high-aligned* ambitions. By contrast, students who expect to work in non-professional employment and who expect to complete their education at the secondary level are seen as expressing *low-aligned* ambitions.

Students can be categorised as being misaligned in two ways: when their education plans are *under-aligned* or *over-aligned* with their occupational plans (Sabates, 2011[3]; Schmitt-Wilson and Faas, 2016[4]). These forms of misalignment are illustrated in bold in Figure 1. For example, a student who plans on becoming a teacher would be categorised as misaligned if their education plans were *under-aligned* (for example, expecting a secondary school diploma as their highest level of qualification) or *over-aligned* if they planned on securing qualifications at a higher level than is typically required (such as a doctorate). Studies typically compare the difference in ultimate employment outcomes between students whose career and education plans are high-aligned and those which are under-aligned.

Figure 1. Aligned and misaligned teenage educational and occupational expectations

Note: Adapted from (Sabates, 2011[3])

What impact does career misalignment have on the employment outcomes of young people?

The concept of misalignment provides teachers, career advisors and parents with insight into the rigour of teenage career exploration. It helps them to understand if a student has a realistic understanding of what they need to do to achieve a career goal. A misaligned student can be seen as expressing confusion about how the labour market operates. It might be expected that misaligned students are struggling in their career development, and a series of longitudinal studies show that there is good reason to believe that this is the case. Over the last decade, eleven studies in seven countries have analysed data from longitudinal studies about teenage alignment and misalignment around the age of 15 and later employment experiences.

Of the 11 studies, after taking account of personal characteristics that influence employment outcomes such as gender, social background and academic achievement, nine find significant evidence (in terms of adult earnings, career satisfaction, NEET status or skills match linked to teenage career alignment) of better employment outcomes being linked to alignment (see Table 1). Comparisons tend to be made between students with career plans that are high-aligned and peers with under-aligned plans in that they expect to work in a job that typically requires tertiary education, but don't plan on securing this level of education. On occasion however comparisons are made to average earnings for a cohort. Wage premiums linked alignment are considerable, often more than 10%. Impacts are detected as young as 16-18 (Yates,

2010[5]) and as old as the age of 45 (Kim, Klager and Schneider, 2019[6]), suggesting that clarity in early career plans underpins long-term career progression.

Table 1. Longitudinal studies of labour market outcomes in light of teenage career alignment/misalignment

Study	Findings
Australia. (Sikora and Saha, 2011[7]). Longitudinal Surveys of Australian Youth. 1998 cohort.	Misalignment at age 15-18 has 'detrimental' effect on employment status at 25
Australia. (Covacevich et al., 2021[1]). Longitudinal Surveys of Australia Youth. 2009 cohort.	High-aligned students at 15-16 earn 8% more at age 25/26 than average earnings.
Australia. (Chowdhury, 2023[8]). Longitudinal Surveys of Australia Youth. 2009 cohort.	Students whose career/education plans are misaligned at 15 are more likely to work in a job that is not matched to their education level at age 25.
Canada. (Covacevich et al., 2021[1]). Youth in Transition Survey. 2000 cohort.	High-aligned students at 15 earn 10% more at age 30 than under-aligned peers.
PR China. (Covacevich et al., 2021[1]). Family Panel Survey. 2010 cohort.	High-aligned students at 10-15 earn 34% more than average earnings at ages 24-30.
Germany. (Covacevich et al., 2021[1]). National Education Panel Survey. 2010 cohort.	No association between career mis/alignment at 15 and career satisfaction or NEET status at 25.
Korea. (Covacevich et al., 2021[1]) Korean Educational Longitudinal Study. 2006 cohort..	High-aligned students at 14-15 earn 4% more than average earnings at 25/26. They are 1.27 times less likely to be NEET and express higher levels of career satisfaction than under-aligned peers.
United Kingdom. (Sabates, 2011[3]). British Cohort Study. 1986 cohort.	High-aligned students at age 16 earn 13% (women) & 11% (men) more than under-aligned peers at age 34.
United Kingdom. (Yates, 2010[5]). British Cohort Study. 1986 cohort.	Under-aligned students at 16 are 3 times more likely (women) and 1.7 times more likely (men) to spend at least 6 months NEET between ages of 16-18 than peers who were high-aligned at age 16.
United States. (Schmitt-Wilson and Faas, 2016[4]). National Education Longitudinal Study. 1998 cohort.	No association between career mis/alignment at age 17-18 and income or underemployment at age 26.
United States: (Kim, Klager and Schneider, 2019[6]). National Longitudinal Survey of Youth. 1979 cohort.	High-aligned students at age 14-18 earn 4% more than under-aligned peers at ages 33-45. At age 34, high-aligned women earn 8% and men 14% more than under-aligned peers.

Note: in addition, studies looked for, but found no significant links between alignment and career satisfaction (Australia, Canada, China, Germany) and NEET status (Canada, China, Germany) (Covacevich et al., 2021[1]). Studies use a range of statistical controls to reduce the risk that the results are distorted by student characteristics which commonly relate to variation in labour market outcomes such as gender, social background, ethnicity and educational history.

It is likely that at least some of the improved employment outcomes observed relates to the fact that students expressing high educational ambitions commonly go on to achieve higher levels of qualifications which in turn relate on average to better employment outcomes (Schoon and Parsons, 2002[9]). Some studies have found that over-aligned students perform as well as their high-aligned peers in the labour market (Kim, Klager and Schneider, 2019[6]; Schmitt-Wilson and Faas, 2016[4]). However, this is not always the case (Sabates, 2011[3]) and misalignment is also seen as evidence of student confusion and poor career construction (Chowdhury, 2023[8]; Sabates, 2011[3]; Kim, Klager and Schneider, 2019[6]) with students seen as floundering through their transitions (Yates, 2010[5]). This conclusion is linked notably to the fact that misalignment, and particularly under-alignment, is strongly connected with social background.

Data from longitudinal studies (Ahearn, 2021[10]; Chowdhury, 2023[8]; Chen, Rocha-Beverly and Schneider, 2021[11]; Yates, 2010[5]) and from the OECD Programme for International Student Assessment (PISA) (Mann, Diaz and Zapata Posada, 2024[12]) show both that students whose parents are from more

disadvantaged social backgrounds are consistently more likely to express career plans that under-aligned with the level of education commonly required to secure high status employment.

How common is career misalignment and what does PISA tell us about the students who most likely to express misaligned career plans?

PISA provides a simple means of assessing teenage career under-alignment. In the assessment, students are asked two relevant questions:

- 'What kind of job do you expect to have when you are about 30 years old?' (Student responses are coded using the 2008 edition of the International Standard Classification of Occupations (ISCO) within 10 major categories (International Labor Organisation, n.d.[13])

- 'Which of the following qualifications do you expect to complete?' (Students are given country-relevant choices mapped against the International Standard Classification of Education, ranging from ISCED 2 (lower secondary education) to ISCED 8 (doctorate) (UNESCO, OECD and Eurostat, 2015[14])

In OECD analysis, students are classified as being high-aligned when they plan on working in one of three major ISCO categories (1, Managers; 2, Professionals; 3, Technicians and Associate Professionals) and expect to complete some form of tertiary education (ISCED levels 5-8). Where students state that they expect to work in an ISCO category 1-3 occupation, but do not plan on continuing in education beyond into tertiary education, they are classified as misaligned in that their planned level of education is under-aligned with the typical requirements needed to achieve their occupational expectation.

Analysis of data from the 2022 round of PISA shows that an average of 21% of students across OECD countries providing both an occupational and education plan at 15 can be classified as under-aligned. This figure varies across countries, from a high of more than 30% in Denmark, Germany, Latvia, New Zealand and Poland to less than 10% in Chile, Costa Rica, Mexico and Türkiye. This proportion has grown slightly for OECD countries since 2018 (20%) but fallen since 2015 (30%).

Looking across OECD countries, levels of such under-alignment are higher for boys (24%) rather than girls (19%), for low performers (32%) on the PISA assessments rather than high performers (14%), for rural students (26%) rather than students who live in cities (19%) and for students educated in public schools (22%) rather than private schools (17%). Most strikingly, misalignment which understates the level of education for occupations that typically demand tertiary education is concentrated among students facing greatest social disadvantage. PISA draws on data relating to parental education, occupational status and home possessions to create an index of economic, social and cultural status. Students are placed in quartiles within their countries allowing comparisons to be made, notably between the most and least socially disadvantaged quartiles. Across OECD countries, on average 33% of students from the most disadvantaged quartile can be classified as misaligned (through under-alignment) compared to 12% of the most socially advantaged (Figure 2). In every OECD country, the most disadvantaged students are more likely to be misaligned than their most advantaged students.

Figure 2. Percentage of students categorised as misaligned (under-aligned) by economic, social and cultural status. OECD countries. PISA 2022.
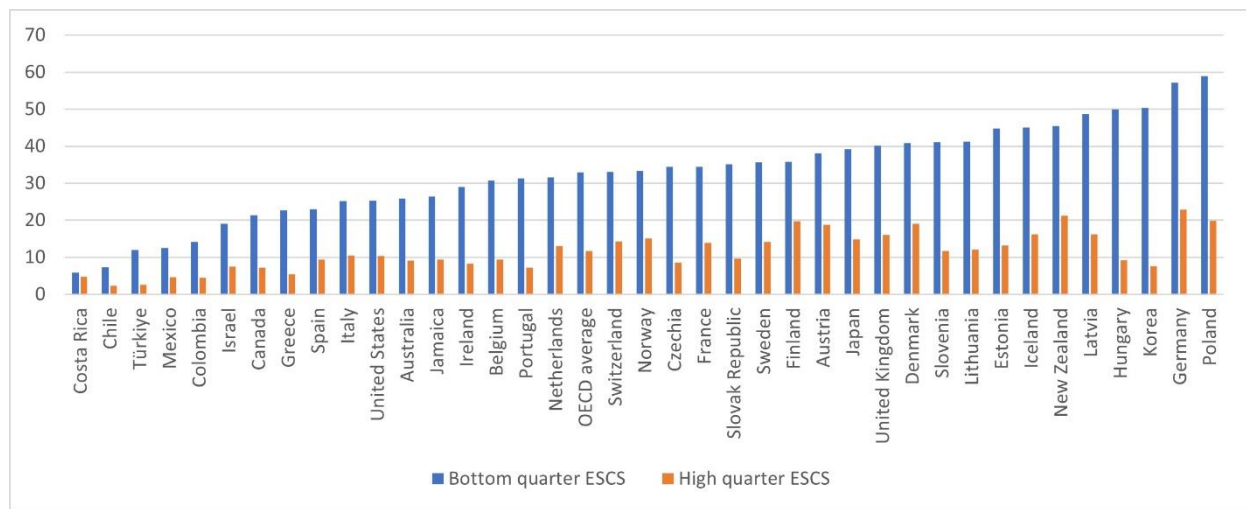
Source: *PISA database 2022.*

Breaking down the results, (Figure 2) shows that the influence of social background remains strong even after accounting for the academic performance of students. Among high achievers on the PISA academic assessments, misalignment through under-alignment is nearly three times higher among students from the most disadvantaged quartile (26%) compared to their most advantaged peers (9%). Among the lowest achievers on the PISA assessments, socially disadvantaged students are nearly twice as likely as advantaged students to be so misaligned in their career plans.

Figure 3. Percentage of students whose career ambitions are misaligned (under-aligned) by performance level and economic, social and cultural status. OECD average. PISA 2022.
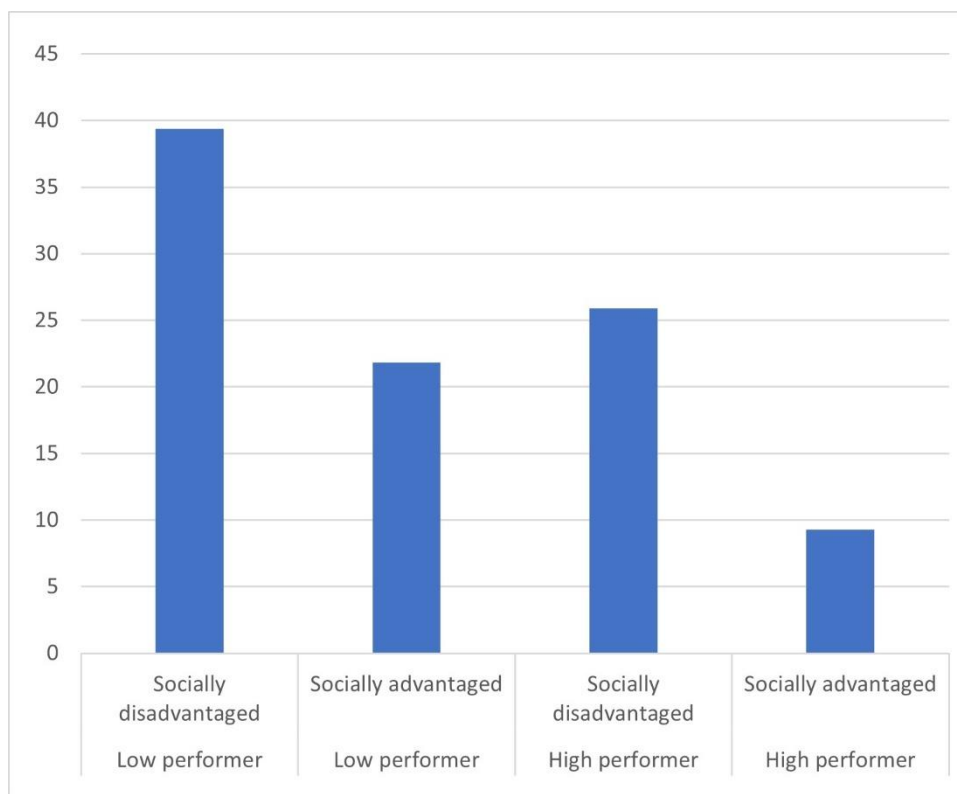
Note: Students are categorised as misaligned where they expect to work in an ISCO 1-3 occupation and expect to complete education at a level lower than ISCED 5. High performers are students who achieved above level 4 in at least one of the PISA assessments in science, mathematics and reading and above level 2 in the other two assessments Low performers are students who achieved below Level 2 proficiency in one of the OECD's PISA assessments in science, mathematics and reading
Source*: PISA database 2022.*

How can guidance systems reduce career misalignment among students?

PISA shows that growing numbers of young people expect to work in the types of careers that typically require tertiary education. The proportion of students expecting to work as a senior manager or professional for example on average across OECD countries has grown from 52% in 2000 to 63% in 2022. However, student understanding of how to access such employment remains problematic. Academic studies of misalignment commonly conclude with calls for students at greatest risk to be provided with greater access to career guidance (Chowdhury, 2023[8]; Sabates, 2011[3]; Sikora and Saha, 2011[7]; Kim, Klager and Schneider, 2019[6]). A detailed study of patterns of misalignment among more than 3 000 French secondary students find that student understanding of post-secondary educational provision and confidence in ability to pursue such tracks are strongly connected to social background (Guyon, 2021[15]). A small number of studies, drawing on more limited samples, have found that specific guidance interventions are linked to reductions in under-alignment before and after engagement in provision (Berger et al., 2019[16]; Chen, Rocha-Beverly and Schneider, 2021[11]).

PISA 2022 data, which draws on the experiences of over half a million teenagers around the world, provides an excellent tool for exploring more extensively the relationship between participation in career development activities and lower levels of under-alignment (Covacevich et al., 2021[1]). Controlling for student gender, socio-economic background (ESCS), migrant status and academic proficiency, lower

levels of misalignment (under-alignment) are found in PISA 2022 data (average for OECD countries) to be significantly related to student participation across all but one of the career development activities assessed (Mann, Diaz and Zapata Posada, 2024[12]).

Table 2. Relationship between participation in career development activities and likelihood of being misaligned (under-aligned) among all OECD students participating in PISA 2022.

Career development activity	Percentage change in odds of participants being *less* likely to be misaligned (under-aligned) in their career and educational plans than comparable students who did not participate in the activity
Job shadowing or worksite visit	4%
Job fair	18%
Speaking with a guidance counsellor in school	14%
Combination: speaking with a guidance counsellor in school + job shadowing + job fair	21%
Speaking with a guidance counsellor outside of school	30%
Speaking with a guidance (at all)	17%
Completing a questionnaire on career interests	25%
Researching careers on the Internet	38%
Touring a post-secondary institution	21%
Research post-secondary programmes on the Internet	50%
Research information on student financing	48%

Note: Control variables applied in regression analyses: gender, ESCS, academic performance, and immigrant background. All relationships are significant at a P value of 5% or less. No significant relationship is found between levels of misalignment (under-alignment) and participation in internships.
Source: PISA 2022 database. Analysis available in (Mann, Diaz and Zapata Posada, 2024[12]).

Further opportunity exists to deepen research understanding of how guidance interventions can be best timed to ensure that students from early ages have clear insight into operation of the labour market and the role of education and training in enabling access to a wide range of desirable professions. Scope exists moreover to design assessment procedures to test student career and educational alignment, as well as a range of other teenage career-related indicators of better employment outcomes (Covacevich et al., 2021[1]), to underpin strategic support for individual students within their career development.

Career mis/alignment as a simple test of career readiness

PISA shows that many students express career and education plans that are misaligned. Analysis of teenage misalignment shows that misaligned students can typically expect worse labour market outcomes than would be expected given their gender, social background and academic achievement. Penalties apply particularly when students do not plan on achieving education levels that typically allow for entry into the jobs they expect to have in adulthood. Most students now expect to work in jobs that require tertiary education, but many (especially from socially disadvantaged backgrounds) do not expect to achieve this level of education. While countries will vary in the extent to which specific careers can be entered through different educational routes, the concept of misalignment provides the guidance community with a tool that can be used with different levels of specificity to assess the career preparation of students, identifying individuals who require more support. Analysis of PISA data shows that a wide range of guidance interventions can be expected to reduce misalignment (under-alignment) among students. Opportunities exist to automate information gathering from students to make it quick and easy for guidance counsellors to assess this element of career readiness.

Career Readiness

This document was prepared by the Career Readiness team at the OECD.

The OECD Career Readiness team provides analysis and policy advice on how education systems can improve the effectiveness, efficiency and equity with which career guidance is delivered to young people in primary and secondary education.

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