



Department
for Education

Survey of Adult Skills 2023 (PIAAC): Young people thematic report

Research report

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**Authors: Rachel Classick, Lisa Kuhn,
Juan Manuel del Pozo Segura, Jose Liht
and Rebecca Wheeler**



Government
Social Research

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Executive summary

Introduction

The 2023 OECD Survey of Adult Skills found great improvement in the skills of young people in England compared to 2012 (Wheater *et al.*, 2024).

There have been two cycles of the survey, Cycle 1 in 2012 and Cycle 2 in 2023. In 2012, 16–24-year-olds in England were among the lowest performers internationally in literacy and numeracy. Unlike most other countries who took part where younger adults (aged 16–24) outperformed older adults (aged 55–65), England's youngest adults scored similarly to the oldest adults (Wheater *et al.*, 2013).

This report compares the youngest cohorts in 2012 and 2023 to explore factors behind their skills gains and tracks the 2012 cohort over time. It addresses 4 research questions:

1. What are the differences in characteristics between young people in 2012 and 2023?
2. How have skills changed by different characteristics?
3. What factors are associated with low skills for adults aged 16–24 in 2023; and how have factors associated with low skills of young people changed since 2012?
4. How have skills changed for the birth cohort aged 16–24 in 2012 and 27–35 in 2023?

Throughout this report we refer to 'young people' and 'birth cohort'. Young people are adults aged 16–24 years old in 2012 and 2023. Birth cohort describes two groups of adults, young adults aged 16–24 in 2012, and adults aged 27–35 in 2023. As no longitudinal data was available, this is a proxy to identify trends.

What are the differences in characteristics between young people in 2012 and 2023?

Compared with 2012, 16–24-year-olds in 2023 were more likely to:

- be qualified to upper secondary level or above
- have parents with a tertiary level qualification or above
- be employed
- have a job classified as 'skilled'.

Some characteristics were similar between young people in 2012 and 2023. The proportion of young people who were men or women, by region, and by socio-economic status (measured by number of books in the home aged 14, as a proxy) was unchanged.

When all adults (aged 16–65) are considered, there was a significant increase in the proportion of adults born outside the UK and with a first language other than English. For adults aged 16–24, these differences were notable, but not statistically significant.

How have skills changed by different characteristics?

Whilst women aged 16–24 in 2023 had significantly better skills in both literacy and numeracy compared to 2012, men only had significantly better skills in numeracy.

Most young people have an upper secondary level qualification, and significant increases in skill since 2012 was only seen for numeracy. The gap between adults with the lowest and highest qualifications does not appear to have increased.

There is no indication of widening gaps between young people with or without English as a first language or with different immigration backgrounds.

The literacy and numeracy skills of unemployed young people have not significantly improved since 2012, unlike their employed or out of the labour force peers.

What factors are associated with low skills for adults aged 16–24; and how have these changed since 2012?

Level of education was the only variable significantly associated with low proficiency in both numeracy and literacy and across both cycles.

The association between numeracy and having a higher education qualification has increased over time but decreased for literacy.

For the most part, in 2023, the background characteristics considered were less strongly associated with literacy and numeracy skills than in 2012.

How have skills changed for the birth cohort aged 16–24 in 2012?

We predicted that adults in England aged 16–24 in 2012 would rapidly gain skills in their 20s. This was previously found for the youngest adults in England who participated in a comparison of adults skills in 1996 – compared with the same cohort 16 years later in Cycle 1 of the Survey of Adult Skills in 2012 (Wheater *et al.*, 2013). In this analysis we compare the results of 16–24-year-olds in 2012 with the same birth cohort aged 27–35 years old in 2023 to understand whether changes in skills are consistent, or if any particular groups have been left behind, and how these adults compare with their international peers. Literacy and numeracy scores for this birth cohort increased significantly and improved more than their counterparts in other countries, on average.

However, these adults remain well below some of the top-performing countries such as Finland, Japan and Estonia.

Improvements were seen for both low and high achievers in this birth cohort and the gap between them have remained unchanged. There has also been a large decrease in the proportion of low-skilled adults.

Men and women made consistent gains in literacy and numeracy skills. However, the gap in numeracy skills has remained, with men continuing to have higher numeracy skills than women, on average.

With regards to highest qualification, all groups have made progress, but some have made more than others. The gap in literacy and numeracy skills between adults tertiary level qualifications and those with lower qualifications is substantial and has increased.

A greater proportion of 27–35-year-olds are employed and employed adults had higher literacy and numeracy skills than employed adults in 16–24-year-olds in 2012.

Young people from this birth cohort in skilled occupations made greater gains than those working in other types of occupation.

Introduction

The 2023 OECD Survey of Adult Skills found considerable improvement in the skills of young people in England since the previous survey in 2012 (Wheater *et al.*, 2024).

There have been two cycles of the survey, 2012 (Cycle 1) and 2023 (Cycle 2). In 2012, 16–24-year-olds in England were among the lowest performers internationally in literacy and numeracy. Further, whereas the youngest adults (aged 16–24) performed better than the oldest (aged 55–65) in most countries, the youngest adults in England performed similarly to the oldest adults (Wheater *et al.*, 2013).

In the last 10 years, there have been significant policy reforms to improve English and maths attainment in secondary and further education (FE). These include raising the participation age to 18 and making maths and English a requirement of post-16 courses for those who did not attain National Qualifications Framework (NQF) Level 2 in English and maths at age 16. Further details on policy reform affecting school and FE sectors are included in the 2023 national report (Wheater *et al.*, 2024).

This thematic analysis report compares the youngest adults in 2012 (Cycle 1) and 2023 (Cycle 2) to identify if there are any key differences between them which may have contributed to their skills gain. We also track the birth cohort from 2012 to understand the drivers for their skills gain. This report aims to answer 4 research questions:

1. What are the differences in characteristics between young people in 2012 and 2023?
2. How have skills changed by different characteristics?
3. What factors are associated with low skills for adults aged 16–24 in 2023; and how have factors associated with low skills of young people changed since 2012?
4. How have skills changed for the birth cohort aged 16–24 in 2012 and 27–35 in 2023?

Throughout this report we refer to ‘young people’ and ‘birth cohort’. Young people are adults aged 16–24 years old in 2012 and 2023. Birth cohort describes two groups of adults, young adults aged 16–24 in 2012, and adults aged 27–35 in 2023. As no longitudinal data was available, this is a proxy to identify trends.

What are the differences in characteristics between young people in 2012 and 2023?

Key findings

Compared with 2012, 16–24-year-olds in 2023 were more likely to:

- be qualified to upper secondary level or above
- have a parent with a tertiary level qualification or above
- be employed
- have a job classified as 'skilled'.

The proportions of young people by gender, region, and socio-economic status (measured by number of books in the home aged 14, as a proxy) were unchanged.

When all adults (aged 16–65) are considered, there was a significant increase in the proportion of adults born outside the UK and with a first language other than English. For adults aged 16–24, these differences were notable, but not statistically significant.

When interpreting differences in skills, it is important to understand not only how outcomes have changed by different characteristics, but also the extent to which outcomes for 16–24-year-olds between 2012 and 2023 might be attributable to changes in population characteristics.

There were no differences by gender, region or books in the home for young people in 2012 and in 2023

In 2023, around half of young people lived in the South of England (49%) at the time of the survey, followed by the North (31%) and the Midlands (20%). This pattern was comparable to 2012 and reflects the England population as a whole (sample was weighted to reflect population characteristics).

One indicator for socio-economic status is the number of books in the home aged 14. This was similar over the two cycles.

As might be expected, the proportion of men and women was unchanged between 2012 and 2023.

Changes in immigration background and having a first language other than English were not significant for the 16–24 age group

There was a statistically significant increase in the proportion of adults aged 16–65 who were born outside the UK in 2023 compared with 2012 (a 7-percentage point increase) (Wheater *et al.*, 2024). For the youngest age group, there was a 3-percentage point (and non-significant) increase in the proportion of young people who were born outside of the UK (13% in 2012 compared with 16% in 2023).

The immigration background of young people was similar in 2012 and 2023. The majority of young people were born in the UK to UK-born parents (75% in 2023 compared with 80% in 2012). This 5% decrease was non-significant, although it is a notable decrease in a 10-year period. It means there is a greater proportion of young people whose parents (or just one parent) were not born in the UK. 9% of young people were born outside of the UK to parents also born outside of the UK (compared with 7% in 2012), and 17% of young people were born in the UK to at least one parent born outside of the UK (compared with 14% in 2012).

In 2023, a significantly smaller proportion of adults aged 16–65 said that English was a first language compared with 2012 (8 percentage point decrease) (Wheater *et al.*, 2024), but there was no significant difference in the youngest age group. English was the first language for 86% of 16–24-year-olds in 2023, compared with 90% in 2012.

Young people in 2023 were more likely to have at least an upper secondary qualification than those in 2012

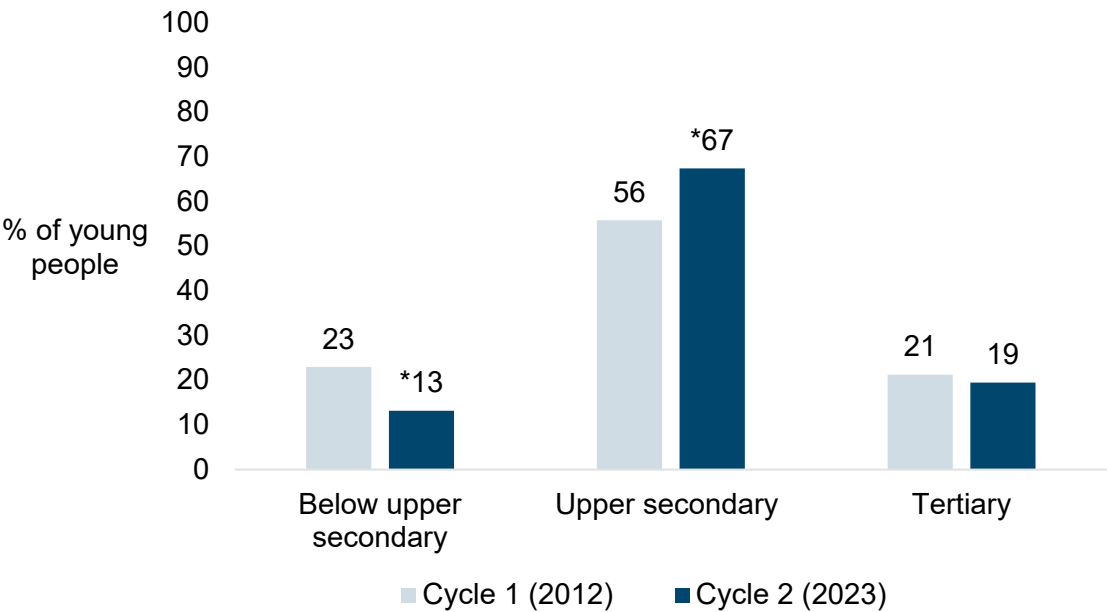
Qualifications are split into three broad categories: ‘below upper secondary’, ‘upper secondary’ and ‘tertiary’. Examples of young people in the below upper secondary group include those with no formal qualifications and those with lower-level qualifications such as Entry Level qualifications, Basic Skills qualifications or fewer than five GCSEs (classified as ISCED 1, 2 and 3 short). Young people with upper secondary qualifications include those with five or more GCSEs, BTEC Level 2 or 3 qualifications, and A levels (ISCED 3 and 4). Young people with tertiary level qualifications include those with a degree or BTEC Level 4 or higher (ISCED 5, 6, 7 and 8).

As shown in Figure 1, there was a significantly lower proportion of young people with a below upper secondary qualification in 2023 (13%) compared with 2012 (23%). Significantly more young people had an upper secondary qualification in 2023 (67%) compared to 2012 (56%).

About 20% of young people in 2023 had a tertiary level qualification, which has remained stable since 2012. Note that this excludes young people who might be undertaking a tertiary level qualification at the time the data was collected.

These improvements align with raising the participation age in education (mentioned in the Introduction) which requires young people to remain in education, employment, or training until their 18th birthday. This came into effect in 2015.

Figure 1 Highest qualification for young people in 2012 and 2023



Asterisk (*) indicate a Cycle 2 proportion which is statistically significantly different at the 5% level from Cycle 1.

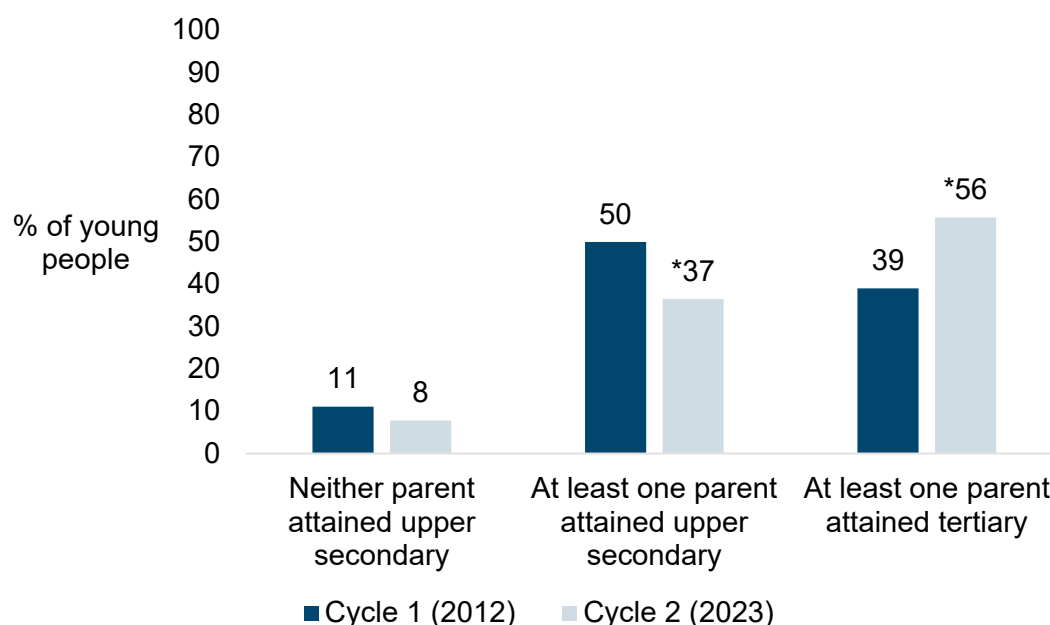
Source: OECD, PIAAC 2023 England database

Young people in 2023 were more likely to have a parent with a tertiary level qualification

Young people in 2023 had more highly qualified parents. As shown in Figure 2, the proportion of young people whose parents had low levels of education (below upper secondary level) fell between cycles, 11% in 2012 and 8% in 2023, albeit this change was not significant. In 1972, the school leaving age was increased to 16 (Agnew, 1972). It is likely that more parents of young people in 2023 experienced this change than parents to young people in 2012.

In 2023, there was a significantly smaller proportion of young people whose parents had upper secondary qualifications (37% compared with 50% in 2012). Conversely, there was a significantly higher proportion of young people whose parents had tertiary qualifications (56% compared with 39% in 2012). Other research using PIAAC data found that adults in 2023 with graduate parents were more likely to be the highest earners, compared with those with non-graduate parents (Brooks *et al.*, 2025).

Figure 2 Young people's parents' highest level of qualification in 2012 and 2023



Asterisk (*) indicate a Cycle 2 proportion which is statistically significantly different at the 5% level from Cycle 1.

Source: OECD, PIAAC 2023 England database

The number of people staying in full time education until the age of 24 has generally increased over the last 3 decades (ONS, 2016). In 1999, the then prime minister, Tony Blair, called for half of young people to go into higher education (BBC, 1999). Whilst the timing of this does not explain a general increase in higher education for the oldest parents, it might explain an increase for the younger parents of 16–24-year-olds in 2023.

There was an increase in tertiary level qualifications for both mothers and fathers. These are shown in Table 1.

Table 1 Qualification level of young people's mothers and fathers in 2012 and 2023

Parent	Cycle	Less than upper secondary level	Upper secondary level	Tertiary level
Mother	Cycle 1 (2012)	19%	52%	29%
Mother	Cycle 2 (2023)	13%	47%	*40%
Father	Cycle 1 (2012)	20%	51%	28%
Father	Cycle 2 (2023)	18%	42%	*40%

Asterisk (*) indicate a Cycle 2 proportion which is statistically significantly different at the 5% level from Cycle 1.

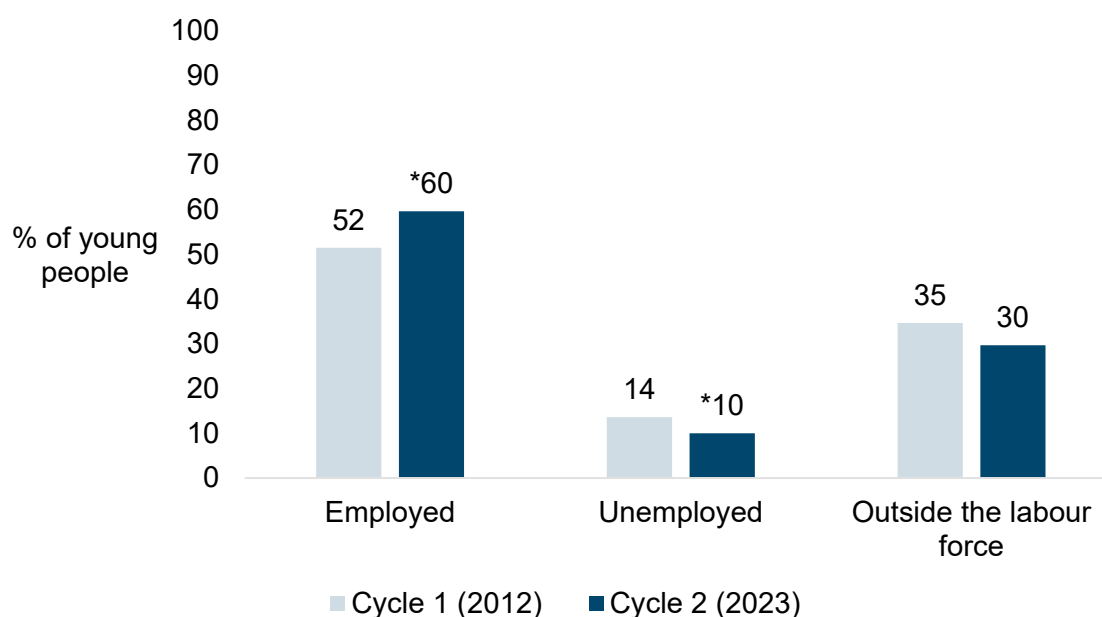
Source: OECD, PIAAC 2023 England database

More young people were employed in 2023, and fewer unemployed, compared with young people in 2012

In 2023, 60% of 16–24-year-olds were employed at the time of the survey, with a further 30% outside the labour force and 10% unemployed. The vast majority (86%) of those outside the labour force were students.

As shown in Figure 3, significantly more young people were employed and significantly fewer unemployed in 2023 compared to 2012. The proportion outside of the labour force has not changed significantly. Given the age span of the group, you may expect more young people to have been outside of the labour force (and a student). For both cycles, around a fifth of young people in the employed group were also students (19% in 2012 and 22% in 2023) – but listed employment as their principal activity.

Figure 3 The employment status of young people in 2012 and 2023



Asterisk (*) indicate a Cycle 2 proportion which is statistically significantly different at the 5% level from Cycle 1.

Source: OECD, PIAAC 2023 England database

Both cycles fell after a similar amount of time after a major economic downturn. The young people in 2012 were in the aftermath of the 2008 financial crisis (Edmonds, Jarrett and Woodhouse, 2010). For the young people in 2023, they had experienced economic downturn due to the Covid-19 pandemic (Harari and Keep, 2021). It is possible that young people in 2023 had greater drivers to work (that is, the impact of austerity, the rising cost of living, increase in university costs), or that the labour economy recovered somewhat better after the latter major event (the Covid-19 pandemic).

There were some changes in occupation type and areas of industry between cycles

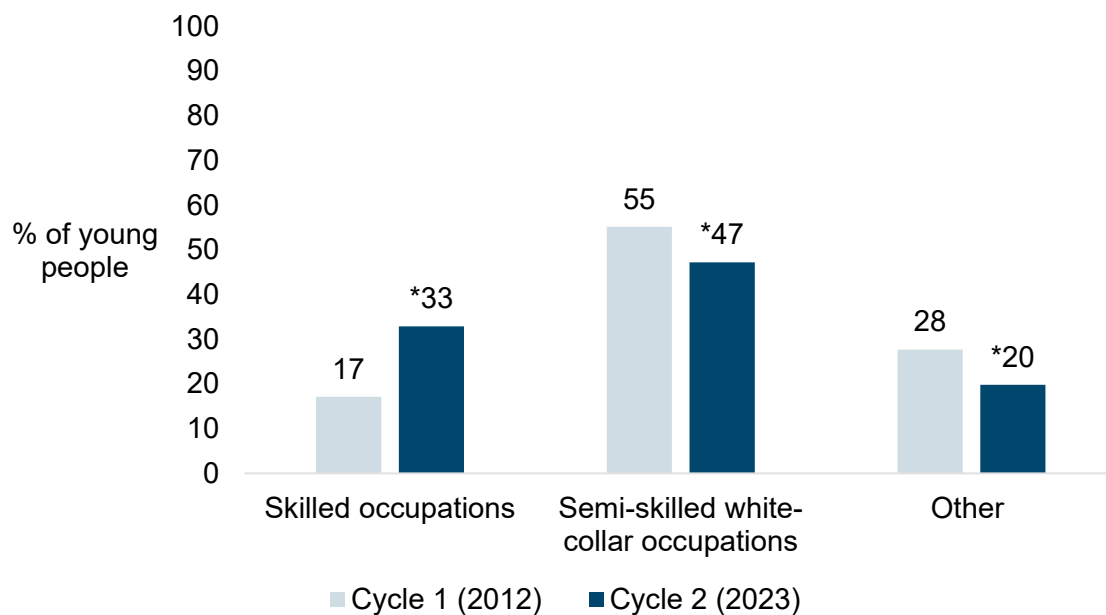
Figure 4 shows the proportion of young people in different occupation types in 2012 and 2023¹. Around 50% of young people worked in semi-skilled white-collar occupations, which was the most common destination in both cycles. However, since 2012, there has been a large increase in young people working in skilled occupations and decrease in semi-skilled occupations². For example, the proportion of young people working within skilled occupations has doubled (from 17% in 2012, to 33% in 2023), and the proportion of those working in semi-skilled white-collar occupations has decreased from 55% to

¹ Semi-skilled white-collar occupations include Clerical Support Workers and Service and Sales Workers. Skilled occupations include Managers, Professionals, and Technicians and Associate Professionals.

² It should be noted that this question is presented to everyone in 2012 and 2023, irrespective of their current employment status. This means, caution should be taken in interpretation as responses could be referring to a young person's previous job if currently unemployed.

47%, whilst remaining the most common occupation type for young people in the workforce.

Figure 4 Occupation type for young people in 2012 and 2023



Asterisk (*) indicate a Cycle 2 proportion which is statistically significantly different at the 5% level from Cycle 1.

Source: OECD, PIAAC 2023 England database

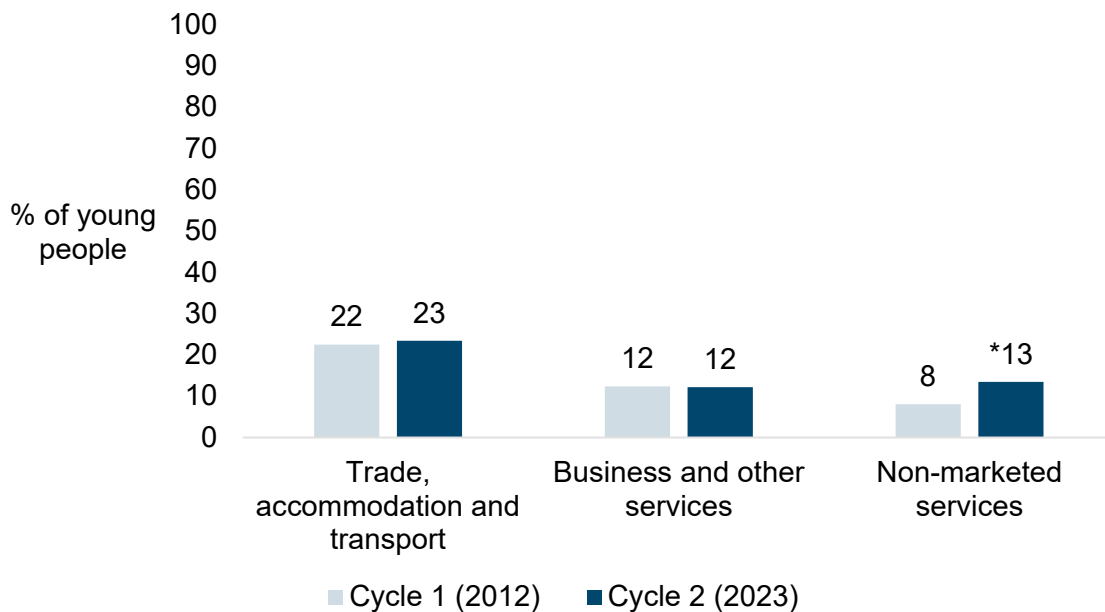
Due to suppression rules, the data for Semi-skilled blue-collar occupations and Elementary occupations have been collapsed to an 'other' category to avoid disclosure with Cycle 2 data. One-fifth (20%) of young adults were in other occupations, significantly less compared with 2012 (28%).

There could be a number of reasons for this change over time. For example, an increase in the availability of skilled occupations (and fewer semi-skilled jobs) in 2023. Or, young people may be more aspirational than before, due to their parents being more highly educated.

A significant increase in skilled occupations has also been reported for working adults that are categorised as having low skills (that means they score at Level 1 or below in literacy and numeracy at the time of the survey) (Kuhn *et al.*, forthcoming) as well as for all adults aged 16–65 in the PIAAC 2023 sample (Wheater *et al.*, 2024). It is possible that this finding for young people reflects the increase in occupation types reported amongst adults as a whole.

In terms of areas of industry³, as shown in Figure 5, there was a significant increase in the proportion of young people working in non-marketed services since 2012, however, numbers are still relatively small. There has been little change in the proportions of young people working in the areas of business and other services, as well as trade, accommodation and transport. Industries with low cell counts include primary sector and utilities as well as manufacturing and construction and therefore, these have not been reported here.

Figure 5 Industry area for young people in 2012 and 2023



Asterisk (*) indicate a Cycle 2 proportion which is statistically significantly different at the 5% level from Cycle 1.

Source: OECD, PIAAC 2023 England database

Generally, young people's habits in reading, writing, numeracy and ICT were similar across cycles

We explored the extent to which the use of literacy, numeracy and ICT skills in everyday life has changed over time using questions repeated from 2012 and 2023. Key findings are:

- Young people in 2023 were more likely to 'never' read newspapers or magazines⁴ than young people in 2012 (18% and 8% respectively).

³ Due to small cell numbers, the industry variable was recoded to match the SIC 07. 'Trade, accommodation and transport' includes wholesale and retail trade; transport and storage; accommodation and food. 'Business and other services' includes media, information technology; finance and insurance; real estate; professional services; support services; arts and entertainment; and other services. 'Non-marketed services' includes public admin and defence; education; health and social work.

⁴ The 2023 questionnaire prompted respondents to consider reading on computers, tablets or other electronic displays

- Fewer young people in 2023 reported 'never' writing letters, memos or emails than young people in 2012 (6% and 12% respectively).
- It was more common for young people in 2023 to use ICT for online banking or ecommerce (with 41% responding 'every day' in 2023 compared to 12% in 2012).

How have skills changed by different characteristics?

Key findings

- Whilst women aged 16–24 in 2023 had significantly better skills in both literacy and numeracy compared to 2012, men only had significantly better skills in numeracy.
- Most young people have an upper secondary level qualification, significant increases in skill since 2012 was only seen for numeracy. The gap between adults with the lowest and highest qualifications does not appear to have increased.
- There is no indication of widening gaps between young people with or without English as a first language or with different immigration backgrounds.
- The literacy and numeracy skills of unemployed young people have not significantly improved since 2012, unlike their employed or out of the labour force peers.

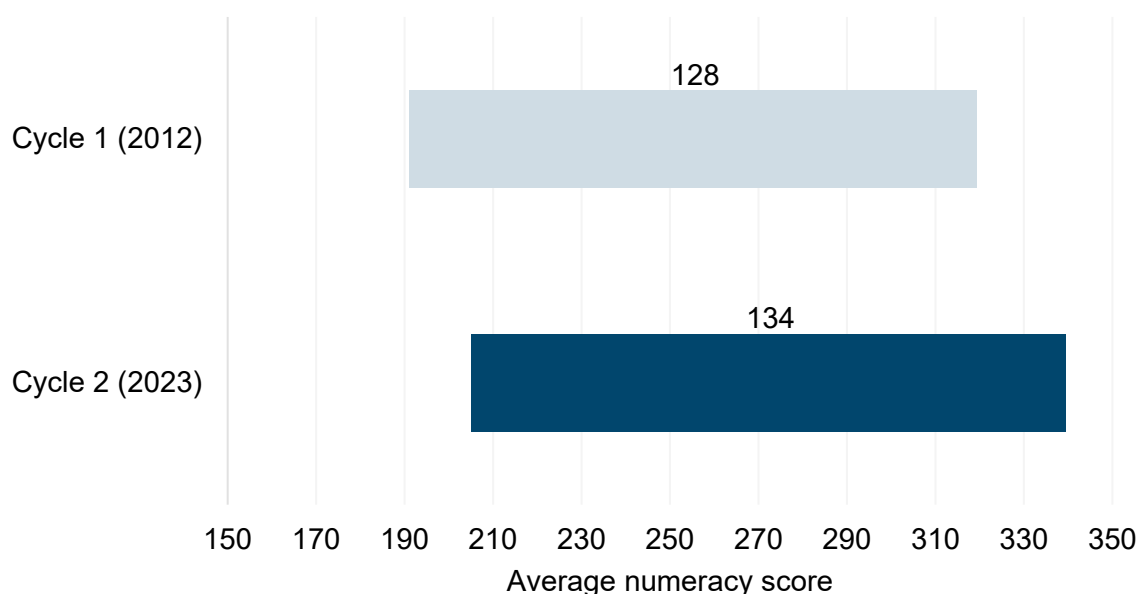
The 2023 Survey of Adult Skills found considerable improvement in the skills of young people in England since the previous survey in 2012 (Wheater *et al.*, 2024). In this section, we explore how skills have changed for 16–24-year-olds by different characteristics to explore whether gains in young people's skills have been consistent, or if there are indications of sub-groups within the population of young people who have been left behind.

Young people aged 16–24 in 2023 scored, on average, 279 in literacy. This was a significant improvement of 14 points compared to the average literacy score for young people in 2012 (265). For numeracy, young people also achieved significantly higher scores on average, by 19 points, in 2023 than those in 2012 (276 and 256 respectively).

For both literacy and numeracy, skill gaps between the highest and lowest young achievers have not changed significantly since 2012

When we look at the gap between the highest and lowest achievers aged 16–24 in numeracy in England (that is, the gap between the 10th and 90th percentile), there is evidence that improvements have been greatest for the highest performing adults (at the 90th percentile). In contrast, while the lowest performing adults (that is, those at the 10th percentile) have also seen improvements, this was not significant. Consequently, as shown in Figure 6, the gap in numeracy scores between the highest and lowest performing adults has increased over time (128 in 2012 compared to 134 in 2023), but this change is not statistically significant.

Figure 6 Gap between the highest (90th) and lowest (10th) performing adults in numeracy



Source: OECD, PIAAC 2023 England database

For literacy, there were similar gains between cycles for young people, and these were not significant. This resulted in a similar skills gap in 2023 (116) as in 2012 (118).

In 2012, around a quarter of young people had low skills in numeracy. In 2023, this has dropped to 16%

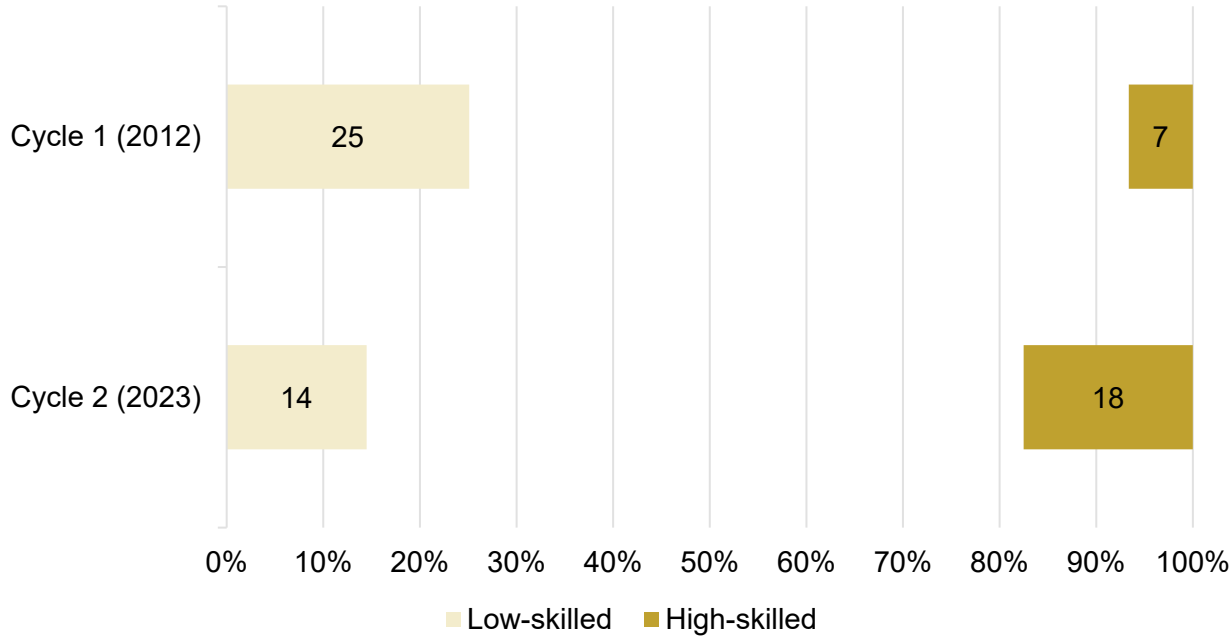
Adults with low proficiency in literacy and numeracy were those whose scores placed them at PIAAC Level 1 or below⁵. Adults achieving Level 1 or below in literacy struggle to complete tasks involving longer texts with distracting information. Adults achieving Level 1 or below in numeracy struggle to complete mathematical tasks with distracting information or conduct multi-step mathematical processes. In contrast, adults achieving a Level 4 or 5 are considered be high skilled. In numeracy, these adults can use and apply problem solving strategies to access, analyse, reason, and critically reflect on and evaluate a broad range of mathematical information that is often presented in unfamiliar contexts. In literacy, these adults can read long and dense texts presented on multiple pages in order to complete tasks that involved access, understanding, evaluation and reflection about the text(s) contents and sources across multiple processing cycles.

As shown in Figure 7, there has been a 11-percentage point decrease in the proportion of low-skilled young people in numeracy between 2012 and 2023. Additionally, there has

⁵ See the OECD report for a full description of the PIAAC literacy and numeracy levels. The literacy and numeracy proficiency levels in the Survey of Adult Skills are not equivalent to England's National Qualification Framework (NQF) levels in literacy and numeracy. A comparison between PIAAC levels in Cycle 1 and NQF levels was carried out in the Cycle 1 national report (Wheater *et al.*, 2013) and a calibration is available in Appendix G, Table G1 of that report.

been a 11-percentage point increase in young people who were high-skilled between the two cycles.

Figure 7 Percentage of low and high skilled young people in numeracy in 2012 and 2023



Source: OECD, PIAAC 2023 England database

There has been a larger decrease in young people with low skills in numeracy than literacy (numeracy decreased by 11-percentage points, literacy by 8-percentage points). However, the proportion of adults with low skills in numeracy was larger than literacy in 2012 (25% and 19% respectively). Young people have made greater gains compared to all adults. As found in the additional analysis specifically looking at low skills (Kuhn *et al.*, forthcoming) there was a small increase in the proportion of adults considered low-skilled in literacy (1%) across all adults and a small decrease in the proportion of low-skilled adults in numeracy (3%, after taking into account the rounding of figures). For young people the proportion with low skills in literacy has almost halved compared to 2012, and also reduced for numeracy.

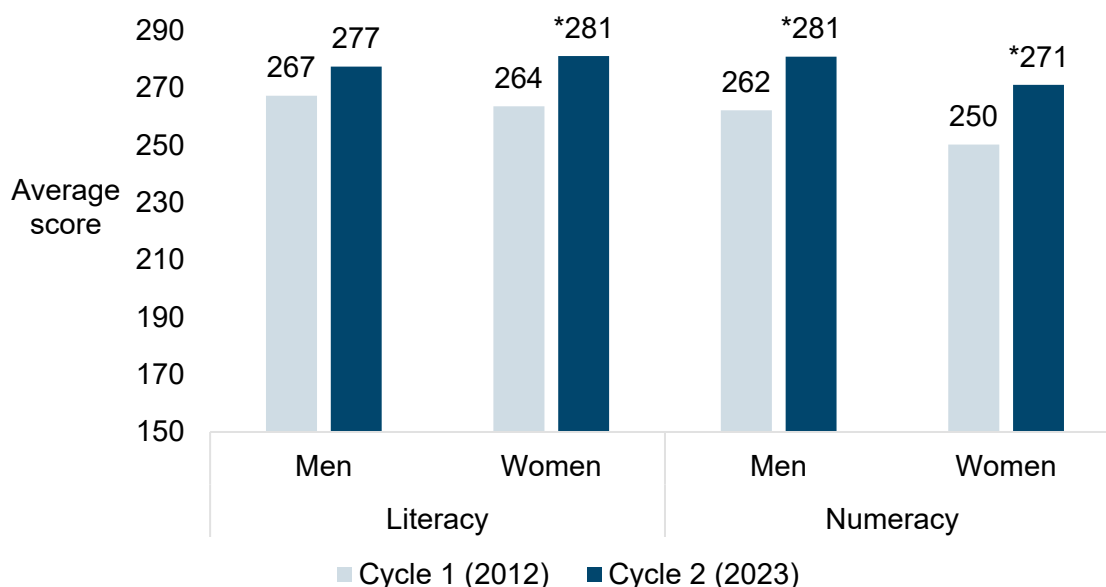
Men aged 16–24 in 2023 did not have significantly better literacy skills than those in 2012

Women in the youngest cohort had significantly better average literacy skills in 2023 compared with 2012, whilst men aged 16–24 have not improved significantly. As shown in Figure 8, women aged 16–24 scored, on average, 281 in literacy in 2023, 18 points⁶

⁶ after taking into account the rounding of figures

more than 2012, which is a statistically significant difference. Men aged 16–24 average literacy scores also improved, but the 10-point difference in scores between 2012 and 2023 was not statistically significantly different. However, the difference in scores between young men and women was small in both cycles (between 3 and 4 points).

Figure 8 Scores by gender for young people in 2012 and 2023



Asterisk (*) indicate a Cycle 2 score which is statistically significantly different at the 5% level from Cycle 1.

Source: OECD, PIAAC 2023 England database

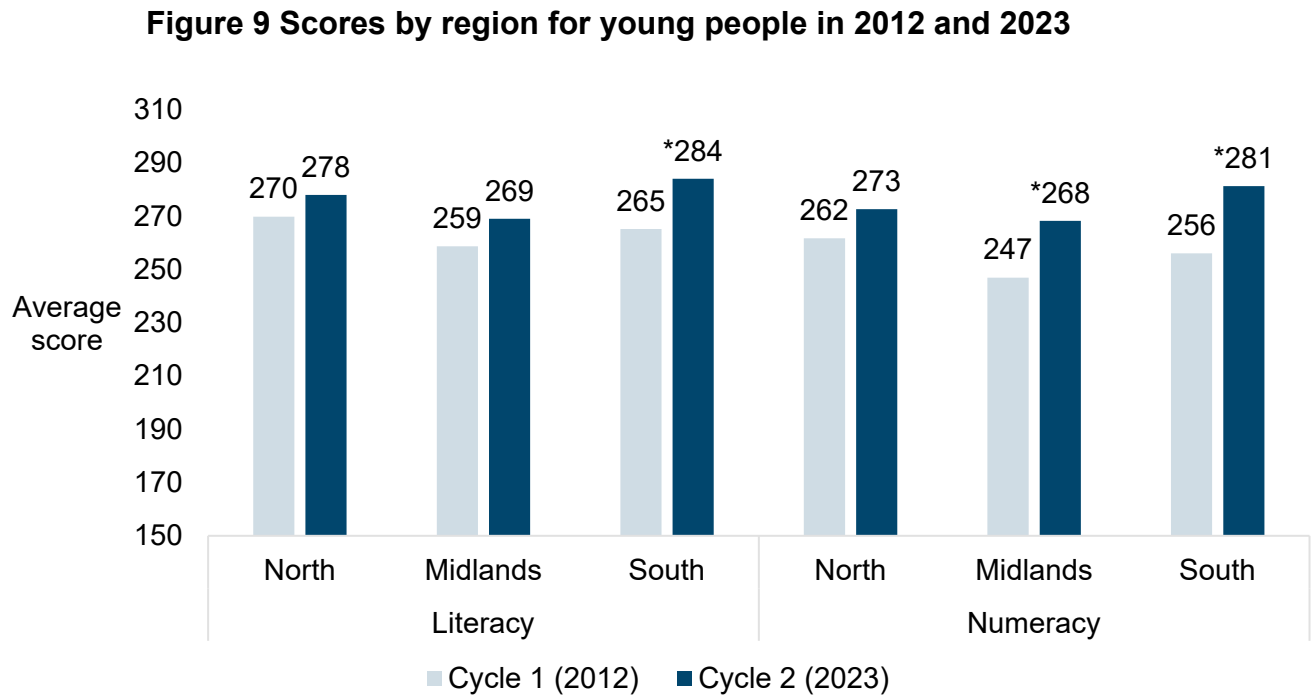
Women and men in the youngest cohort had large improvements in numeracy skills compared with 2012, by 21 and 19 points respectively. In 2023, women aged 16–24 scored, on average, 281 in literacy and 271 in numeracy. The gap in numeracy between men and women in 2023 decreased to 10 points from 12 in 2012 and was not significant in 2023. This is contrary to the pattern for all adults, where the gender gap for numeracy increased from 14 points to 16 points between 2012 and 2023 (Wheater *et al.*, 2024) and so could provide some evidence of the numeracy gender gap decreasing for the youngest cohort.

Young people in the South of England improved significantly in both literacy and numeracy, but this was not seen for young people in the North

The analysis of adults aged 16–65 found no significant differences between the literacy and numeracy scores in each of the 9 regions of England between 2012 and 2023 (Wheater *et al.*, 2024). Due to sample size limitations, we compared changes in young people's scores by 3 broader regions⁷. Unlike the whole population, young people in the

⁷ The three collapsed regions are the South (London, Eastern, South East and South West), Midlands (East Midlands, West Midlands) and the North (including North East, North West (including Merseyside), Yorkshire and the Humberside).

South scored significantly better in 2023 than in 2012 in both literacy (an increase of 19 points) and numeracy (an increase of 25 points). This is shown in Figure 9.



Asterisk (*) indicate a Cycle 2 score which is statistically significantly different at the 5% level from Cycle 1.

Source: OECD, PIAAC 2023 England database

Whilst there was a significant improvement in numeracy for young people in the Midlands (of 21 points), the 10-point change for literacy was not significant. For young people in the North, there was no significant change between cycles in either literacy or numeracy scores.

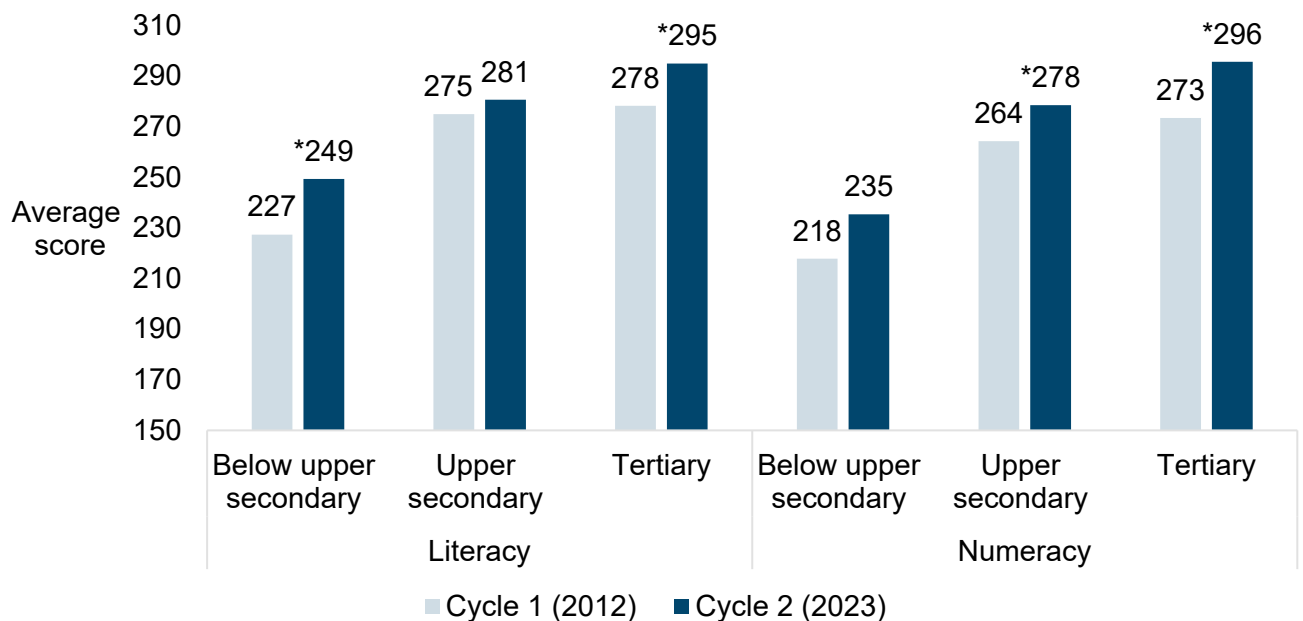
Skills of the highest and lowest qualified young people have increased, but a large gap remains

Further analysis of the 2012 cycle indicated that around one in ten university graduates had low skills in numeracy and literacy (Kuczera, Field and Windisch, 2016). Furthermore, low skills were found to be more common with shorter postsecondary qualifications. Further analysis exploring low skills (Kuhn *et al.*, forthcoming) found, when looking at both 2012 and 2023 data for all adults (16–65), more low-skilled adults tended to have higher educational qualifications in 2023 compared to 2012.

Outcomes for young people with different levels of qualifications are complicated to unpick. Policy changes since 2012 (particularly raising the school participation age) mean that more young people achieve upper secondary level qualifications and are on pathways to achieve higher levels of qualifications (see the significant increase in young people achieving upper secondary qualifications in Figure 2).

As shown in Figure 10, young people with tertiary level qualifications scored significantly better in both literacy and numeracy in 2023 than those in 2012. A significant increase in literacy scores was also seen for young people with below upper secondary level qualifications. Therefore, despite an increase in scores for young people qualified to a below upper secondary school level, a large skills gap remains compared to those qualified to a higher level (46 points in literacy and 60 points⁸ in numeracy).

Figure 10 Scores by qualification level for young people in 2012 and 2023



Asterisk (*) indicate a Cycle 2 score which is statistically significantly different at the 5% level from Cycle 1.

Source: OECD, PIAAC 2023 England database

For young people with upper secondary level qualifications, a significant increase was only seen in numeracy.

These findings should be considered alongside the change in proportion (and thus, profile) of young people with below upper secondary and upper secondary qualifications (see Figure 1) between cycles. There seems to be a positive story here for young people with the lowest skills, where the size of the population of young people with below upper secondary qualifications has reduced and there is no evidence that young people in this group have fallen further behind their peers in 2012. In fact, they may have made greater improvements, masked by the change in profile of the group of below upper secondary young people, with more young people (and likely, comparatively, higher-skilled) having upper secondary qualifications in 2023 than was the case in 2012. As a result, the group of young people with an upper secondary level qualification in 2023 is broader than 2012 and this group has not seen similar large gains in skills compared with the other two groups. For literacy, the gap between young people with an upper secondary qualification

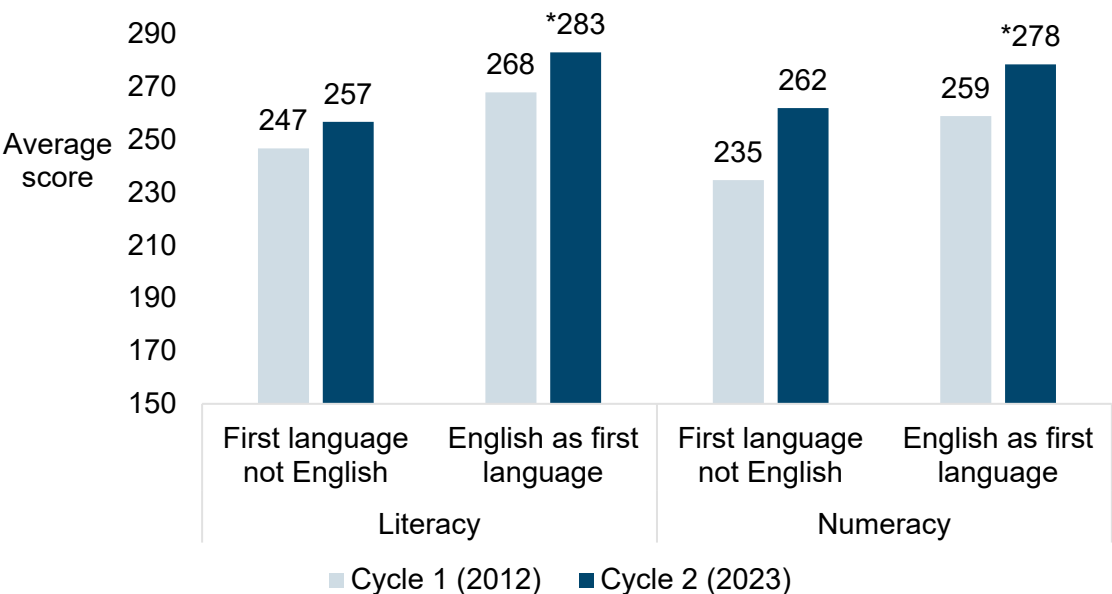
⁸ after taking into account the rounding of figures

and with a tertiary qualification was 3 points in 2012 and has increased to 14 points in 2023. Similarly, the gap for numeracy was 9 points in 2012 and has increased to 17 points in 2023. As this group now accounts for two-thirds (67%) of 16–24-year-olds, this does raise concern about how skills of this group are best supported.

There is no indication of widening gaps between young people with or without English as a first language or with different immigration backgrounds

As shown in Figure 11, there was a significant increase in both literacy and numeracy scores for young people who learnt English as a first language, with increases of 15 points and 20 points respectively. For young people with English as a first language, both literacy and numeracy scores increased (by 10 points in literacy and 27 points in numeracy). However, these increases were not significant, likely due to a low number of young people in this category, and therefore there is a lower chance of detecting a significant result.

Figure 11 Scores by first language for young people in 2012 and 2023



Asterisk (*) indicate a Cycle 2 score which is statistically significantly different at the 5% level from Cycle 1.

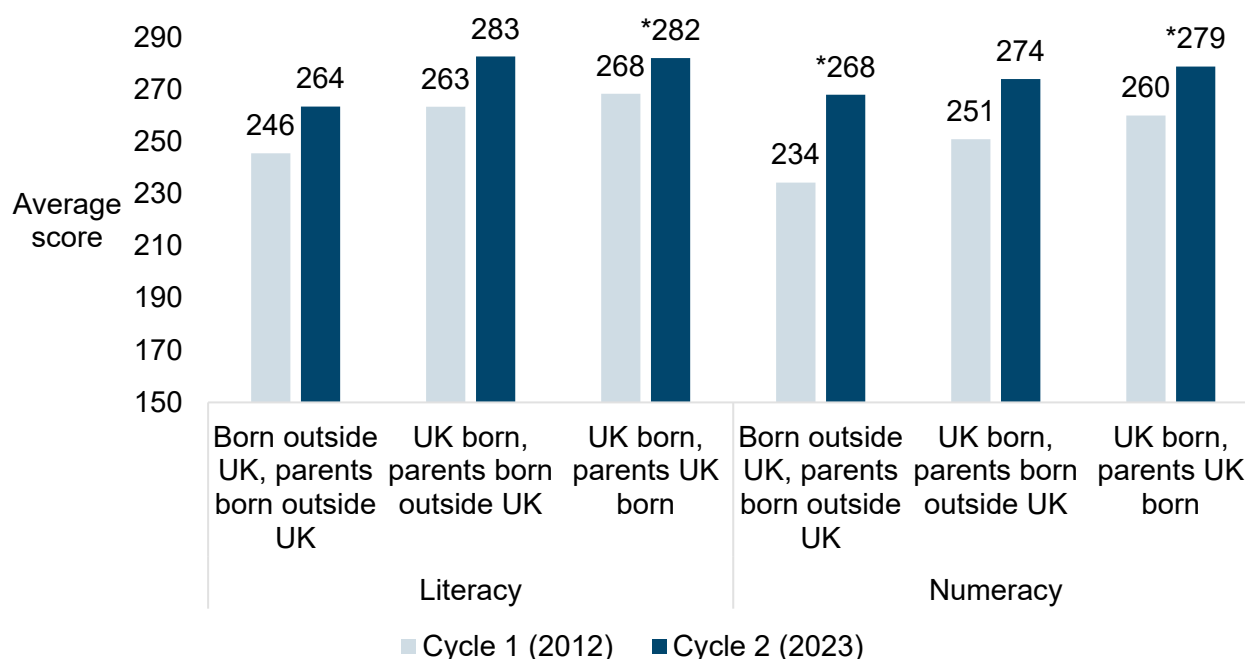
Source: OECD, PIAAC 2023 England database

Young people who were born in the UK, to parents also born in the UK did significantly better in 2023 than their peers in 2012, as shown in Figure 12. This was true for both literacy (with a 14-point increase) and numeracy (with a 19-point increase). Young people not born in the UK to parents also not born in the UK also saw a significant increase in numeracy, from 234 in 2012 to 268 in 2023 (an increase of 34 score points).

Whilst young people born in the UK to parents not born in the UK did see an increase in score in both literacy and numeracy, this change was not significant. This is likely due to

a low number of young people in this category, and therefore there is a lower chance of detecting a significant result.

Figure 12 Scores by immigration background for young people in 2012 and 2023



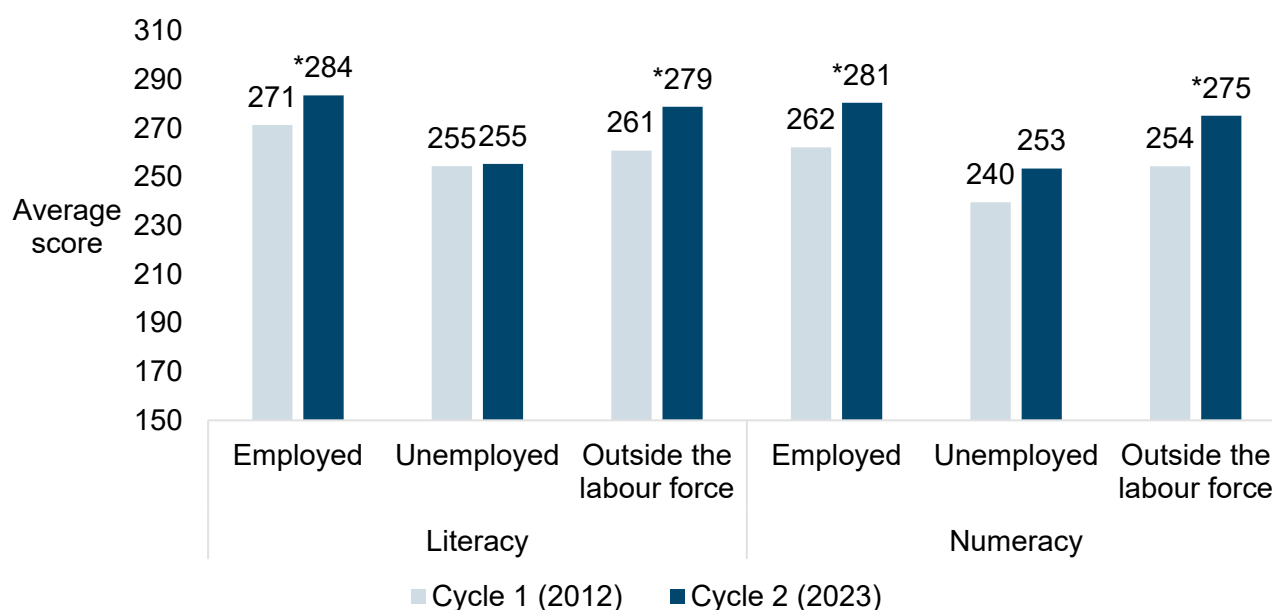
Asterisk (*) indicate a Cycle 2 score which is statistically significantly different at the 5% level from Cycle 1.

Source: OECD, PIAAC 2023 England database

Unemployed young people's literacy and numeracy skills did not improve, unlike those employed and outside of the labour force

As shown in Figure 3, there was a significant increase in the proportion of young people who were employed and a decrease in the proportion unemployed between 2012 and 2023. In 2023, young people who were employed and those outside of the labour force (the majority being students) did significantly better than their peers in 2012. For example, as shown in Figure 13, employed young people scored, on average, 262 in numeracy in 2012 and 281 in 2023, a significant increase of 18 points. The average score for young people who were unemployed did not change significantly between cycles for either literacy or numeracy.

Figure 13 Scores by employment status for young people in 2012 and 2023



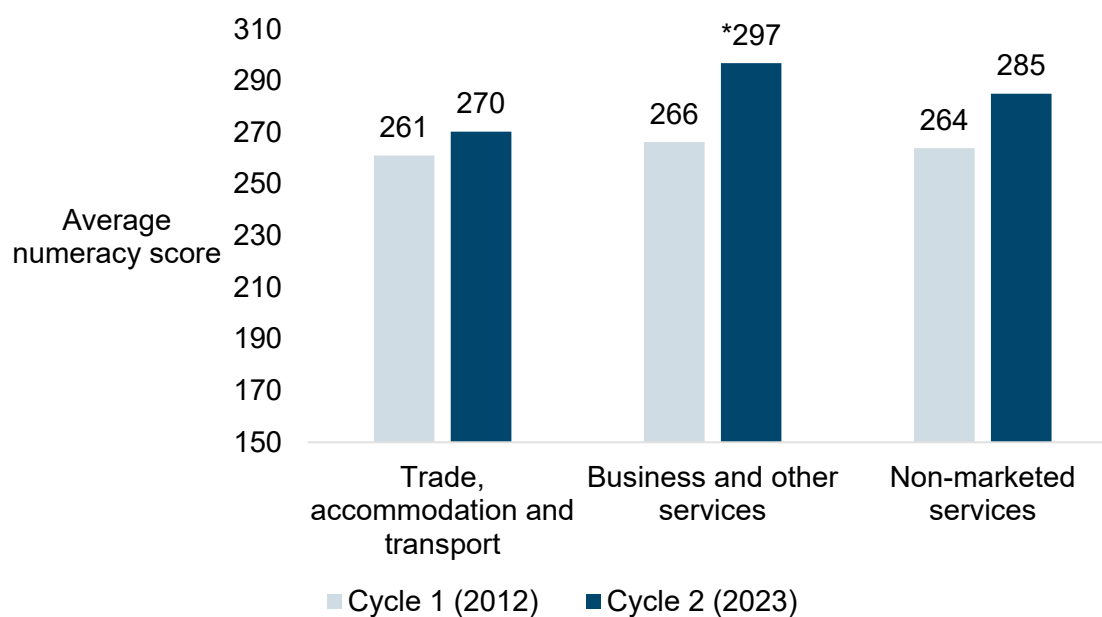
Asterisk (*) indicate a Cycle 2 score which is statistically significantly different at the 5% level from Cycle 1.

Source: OECD, PIAAC 2023 England database

There was a significant increase in scores for young people working in business and other services

As shown in Figure 14, there was a significant increase in literacy and numeracy scores for young people working in business and other services, for example, from 266 in numeracy in 2012 to 297 in 2023 (an increase of 31 points). There was no significant change in score for young people working in trade, accommodation and transport and non-marketed services between cycles.

Figure 14 Numeracy scores by industry area for young people in 2012 and 2023



Asterisk (*) indicate a Cycle 2 score which is statistically significantly different at the 5% level from Cycle 1.

Source: OECD, PIAAC 2023 England database

As noted previously, the cell counts for other industry areas are too low for reporting.

What factors are associated with low skills for adults aged 16–24; and how have these changed since 2012?

Key findings

- Level of education was the only variable significantly associated with low proficiency in both numeracy and literacy and across both cycles.
- The association between numeracy and having a higher education qualification has increased over time but decreased for literacy.
- For the most part, the background characteristics considered were less strongly associated with literacy and numeracy skills in 2023 than in 2012.

A regression analysis was conducted to identify which characteristics were associated with low proficiency for young people in England, while controlling for other characteristics. A similar analysis was included in England's national report (Wheater *et al.*, 2024) and looked at all adults, rather than just young people.

For this analysis, proficiency was collapsed into a binary variable of low versus not low. This was done separately for literacy and numeracy, and for 2012 (Cycle 1) and 2023 (Cycle 2). Low proficiency was defined as PIAAC Level 1 or below.

The following variables were included in the analysis:

- Gender
- First language
- Born in the UK or not
- Books in the home at age 14 years
- Highest level of education (young person)
- Highest level of education (mother)
- Highest level of education (father)
- Region (South, Midlands and North)

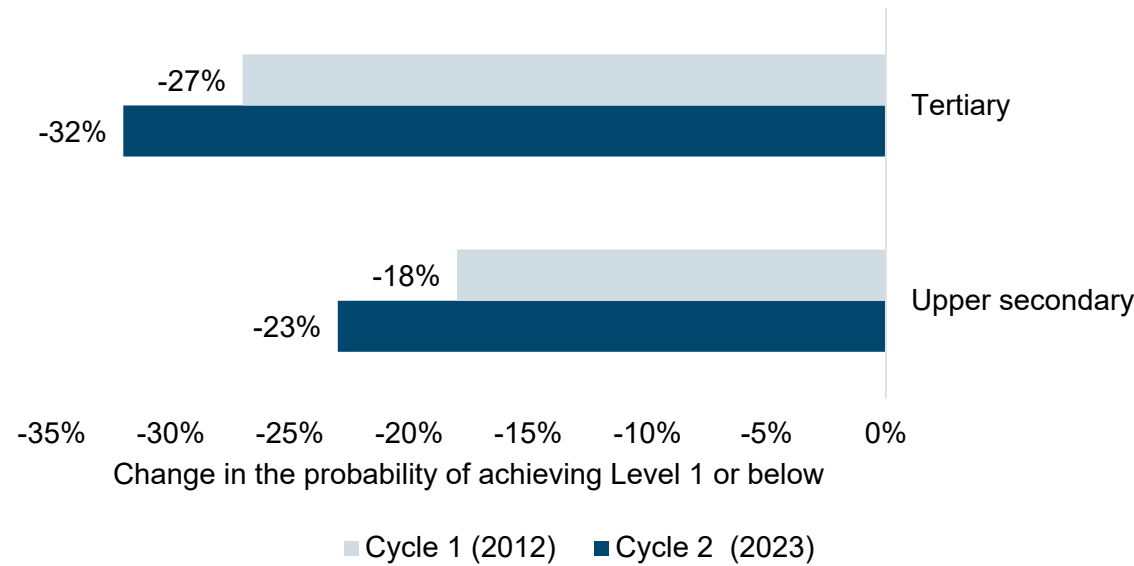
Age was also included as a variable in the analysis to account for the differences in our younger-young people (16–19-year-olds) and our older-young people (20–24-year-olds).

Whilst our models control for differences in a range of factors related to low proficiency, there are likely to be other unmeasured yet important individual characteristics that may be driving the associations that we present.

The association between numeracy and having a higher education qualification has increased over time, but decreased with literacy

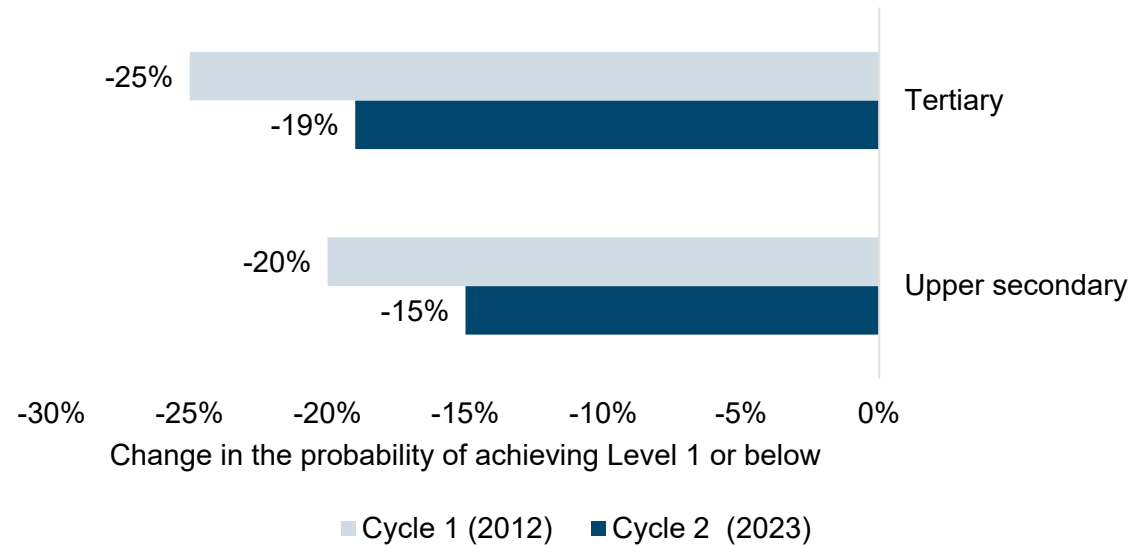
Level of education was the only variable significantly associated with low proficiency in both numeracy and literacy and across both cycles, shown in Figure 15 and Figure 16. For this analysis, below upper secondary qualification is our comparison group.

Figure 15 Change in the probability of achieving Level 1 or below in numeracy, by education level, for young people in 2012 and 2023



Source: OECD, PIAAC 2023 England database

Figure 16 Change in the probability of achieving Level 1 or below in literacy, by education level, for young people in 2012 and 2023



Source: OECD, PIAAC 2023 England database

Figure 15 and Figure 16 show that, in 2023, young people with a tertiary qualification were less likely to have low proficiency in numeracy (by 32%) and literacy (by 19%) compared to those with below upper secondary qualification. Similarly, those with an upper secondary qualification were less likely to have low proficiency in numeracy (by 23%) and in literacy (by 15%) compared with those with a below upper secondary qualification.

Therefore, while the level of qualification is associated with the probability of having low proficiency, it is associated to a greater extent with numeracy than literacy.

It is important to remember that these models do not consider endogeneity. For example, we do not know whether it is being qualified to a higher level that could lead to higher literacy scores, or if it is higher literacy scores that could lead to being qualified to a higher level.

Between cycles, the effect size for level of qualification increased for numeracy, as shown in Figure 15. In 2012, having a tertiary qualification decreased the likelihood of low proficiency by 27%. In 2023, the probability was 32%. A similar change is seen for upper secondary qualifications, with an increase in the effect size between cycles.

This is a different pattern than for literacy, where the effect sizes of higher levels of qualification have decreased between cycles, as shown in Figure 16.

Mother's highest qualification was no longer associated with proficiency in literacy and numeracy

Between 2012 and 2023 there has been a significant increase in the proportion of young people's mothers educated to tertiary level (29% in 2012 and 40% in 2023). In 2012, young people whose mothers had a tertiary qualification were less likely to have low proficiency in literacy (by 20%) and numeracy (by 19%) than those whose mothers had a below secondary qualification, both of which were statistically significant differences. However, mother's education was not significantly associated with proficiency in either literacy or numeracy in 2023.

In 2012, young people with more than 101 books were less likely (by 19%) to have low numeracy proficiency than young people with 0 to 25 books. Conversely, significant associations were not found for literacy for 2012 or in either domain for 2023.

Some characteristics had an effect size of 10% or more, although their associations were non-significant

Education level was the only variable with significant associations in 2023 in our logistic regression. This is likely to be due to the small sample size when just focusing on young people, which lowers the chance of detecting significant results. However, we considered characteristics with a comparatively large effect size to be important, whilst being mindful

that there is a possibility that these non-significant results would not hold if a different sample was selected/larger sample was available.

Table 2 Characteristics with an effect size of 10% or more

Characteristic	Comparison group	Cycle 1 (2012) Literacy	Cycle 1 (2012) Numeracy	Cycle 2 (2023) Literacy	Cycle 2 (2023) Numeracy
Born outside of the UK	Born in the UK	11%	12%	11%	Less than 10%
More than 101 books at age 14	None to 25 books at age 14	12%	19%	Less than 10%	Less than 10%
Mother's education level: upper secondary	Mother's education level: below upper secondary	11%	11%	Less than 10%	Less than 10%
Mother's education level: tertiary	Mother's education level: below upper secondary	20%	19%	14%	16%
Father's education level: upper secondary	Father's education level: below upper secondary	Less than 10%	11%	Less than 10%	Less than 10%
Father's education level: tertiary	Father's education level: below upper secondary	Less than 10%	12%	Less than 10%	Less than 10%
Father's education level: unknown	Father's education level: below upper secondary	Less than 10%	Less than 10%	11%	17%

Source: OECD, PIAAC 2023 England database

As show in Table 2, young people born outside of the UK were more likely to have low proficiency in 2012 in literacy (by 11%) and numeracy (by 12%) and in 2023 in just literacy (by 11%). The effect size was smaller in numeracy in 2023 than in 2012, falling to below 10%.

As well as mother's education, father's education was also important for young people's proficiency. However, the association was not consistently observed across domains and/or cycles. All the variables, and their effect sizes, can be found in Appendix A.

With all other things equal, the association of characteristics such as age, gender, and socio-economic background with literacy and numeracy have declined since 2012. This suggests that background has less of an association with outcomes in 2023 than it did in 2012, albeit the associations observed are not statistically significant.

How have skills changed for the birth cohort aged 16–24 in 2012?

Key findings

- Literacy and numeracy scores for this birth cohort increased significantly and improved more than their counterparts in other countries, on average. However, these adults remain well below some of the top-performing countries such as Finland, Japan and Estonia.
- Literacy and numeracy skills significantly improved for both low and high achievers and the gaps between them have remained unchanged. There has been a large decrease in the proportion of low-skilled adults.
- Men and women made consistent gains in literacy and numeracy skills. However, the gap in numeracy skills has remained, with men continuing to have higher numeracy skills than women, on average.
- With regards to highest qualification, all groups have made progress, but some have made more than others. The gap in literacy and numeracy skills between adults with tertiary level qualifications and those with lower qualifications is substantial and has increased.
- A greater proportion of 27–35-year-olds are employed and employed adults had higher literacy and numeracy skills than employed adults in 16–24-year-olds in 2012.
- Young people in skilled occupations made greater gains than those working in other types of occupation.

A key question from the 2012 Survey of Adult Skills findings was how young people's skills would develop during post-secondary education and as they entered the workforce.

We predicted that adults in England aged 16–24 in 2012 would rapidly gain skills in their 20s. This was previously found for the youngest adults in England who participated in a comparison of adults skills in 1996 – compared with the same cohort 16 years later in Cycle 1 of the Survey of Adult Skills in 2012 (Wheater *et al.*, 2013). In this analysis we compare the results of 16–24-year-olds in 2012 with the same birth cohort aged 27–35 years old in 2023 to understand whether changes in skills are consistent, or if any particular groups have been left behind, and how these adults compare with their international peers.

To understand the changing skills of this birth cohort without findings confounded by migration, adults who were born outside of the UK and had lived in the UK for less than 10 years were excluded from the 27–35-year-old cohort. To note, this excluded group was a small group of adults. They did significantly less well, on average, in literacy than the 27–35-year-olds born in the UK or who moved to the UK over 10 years ago (with an average score of 262 compared to 288 respectively). Numeracy skills were not significantly different (274 for the excluded adults compared to 281).

Literacy and numeracy scores for this birth cohort have increased significantly

Adults aged 27–35 years made large and significant gains in literacy and numeracy skills compared with adults aged 16–24 in 2012.

Table 3 Average literacy and numeracy scores in England for 16–24-year-olds in 2012 compared with 27–35-year-olds in 2023

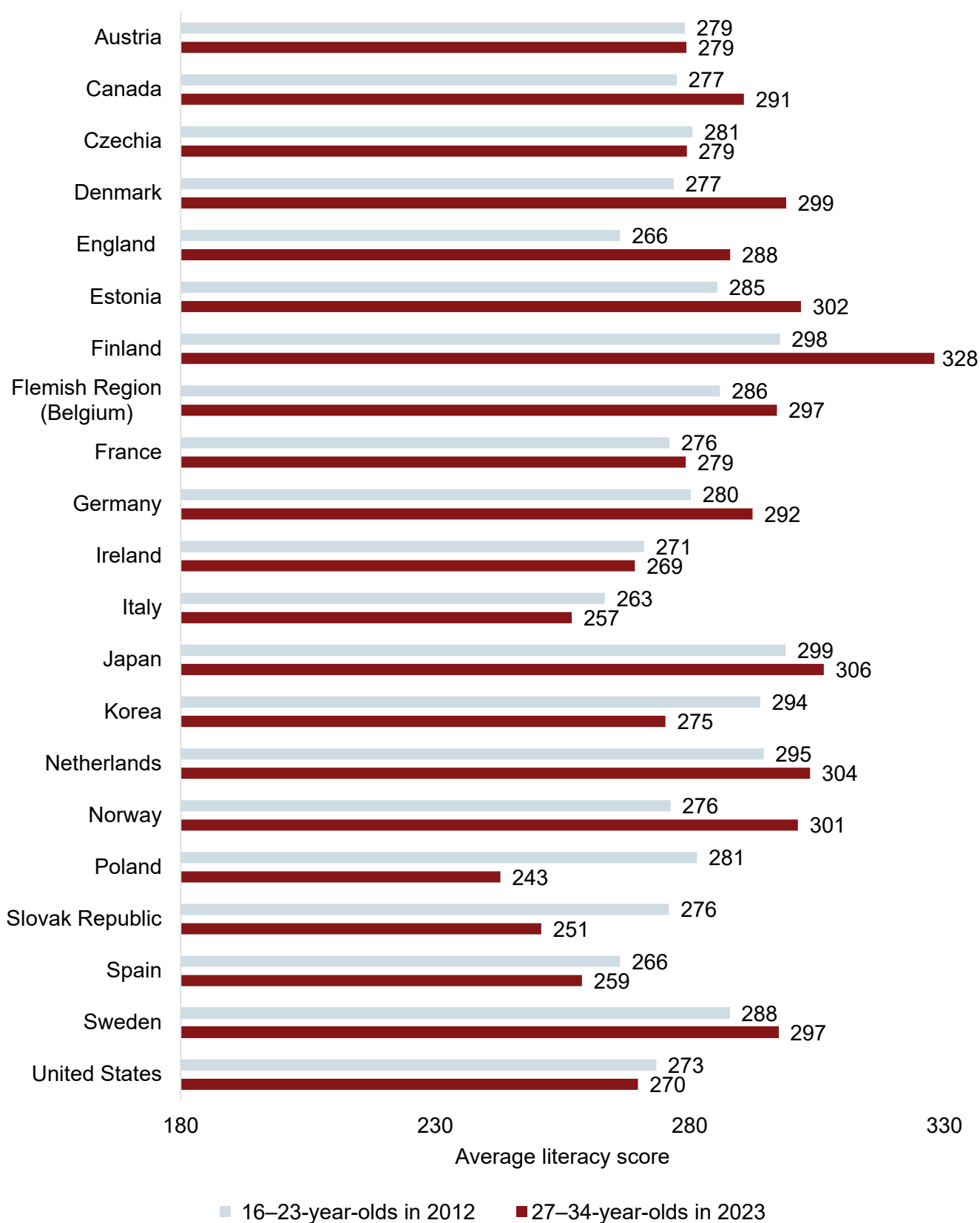
Domain	16–24-year-olds (in 2012)	27–35-year-olds (in 2023)	Difference
Literacy	265	289	*24
Numeracy	256	282	*26

Asterisk (*) indicate the difference is statistically significant at the 5% level.

Source: OECD, PIAAC 2023 England database

Due to the way the data for other participating countries has been suppressed, we are unable to carry out the exact same analysis internationally. Figure 17 and Figure 18 present similar analysis by OECD comparing adults aged 16–23 in 2012 with those aged 27–34 in 2023.

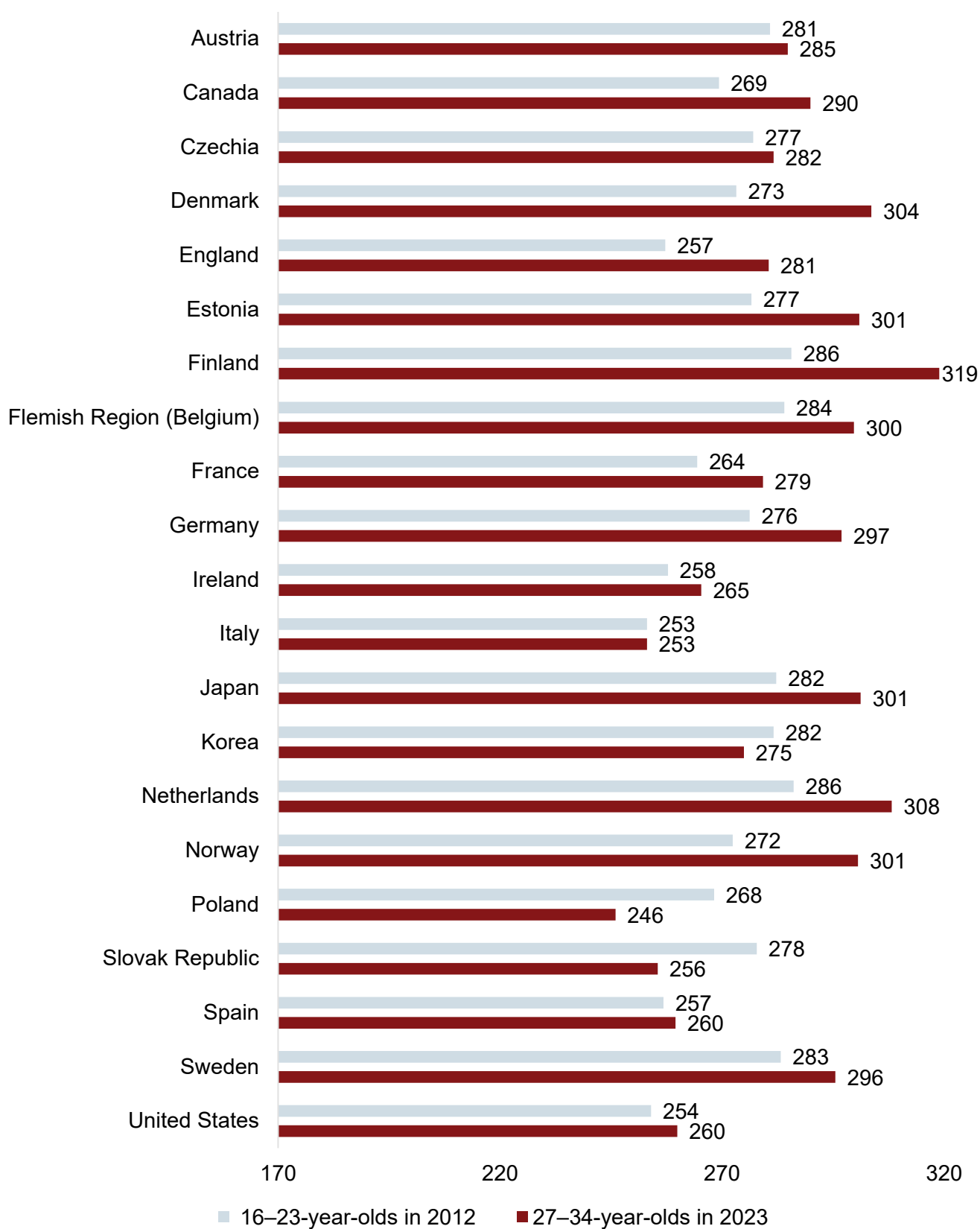
Figure 17 Average literacy scores across countries for 16–23-year-olds in 2012 compared with 27–34-year-olds in 2023



Caution is required in interpreting Poland's results. See the Note for Poland in the Reader's Companion (OECD, 2024).

Source: Table A.3.10 (L). (OECD, 2024)

Figure 18 Average numeracy scores across countries for 16–23-year-olds in 2012 compared with 27–34-year-olds in 2023



Caution is required in interpreting Poland's results. See the Note for Poland in the Reader's Companion (OECD, 2024).

Source: Table A.3.10 (N). (OECD, 2024)

The youngest cohort in England had not only significantly improved their skills over the 11-year period but had improved more than their counterparts in many other countries, on average.

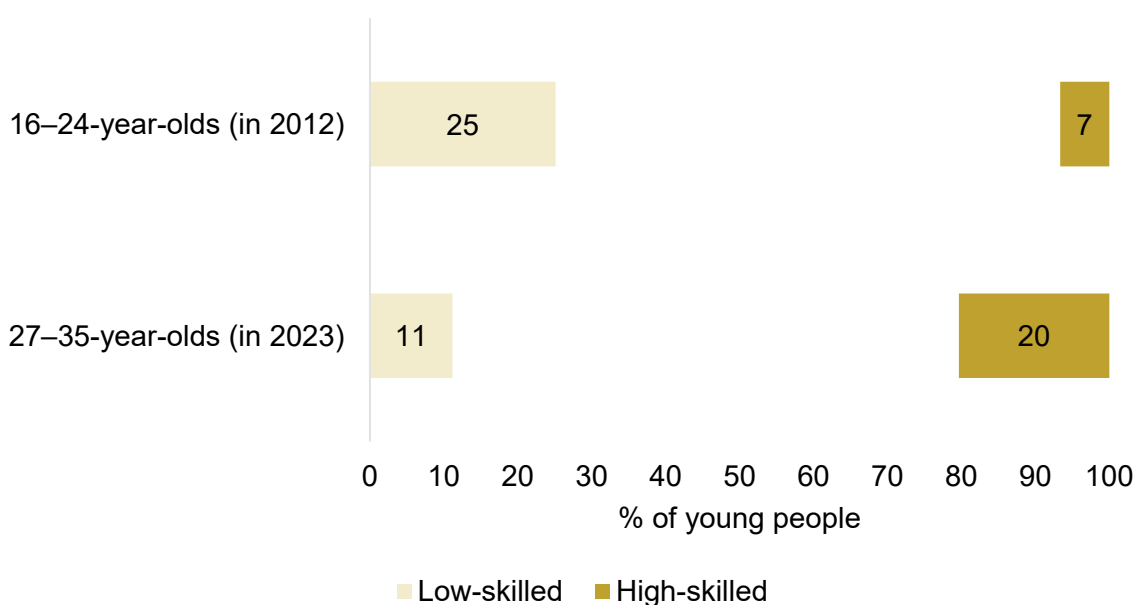
However, young adults in England aged 27–34 in 2023 had lower skills, on average, in both literacy and numeracy compared with top-performing nations such as Finland, Japan, Netherlands, Estonia, Norway, Denmark, Sweden and Flemish (Belgium region).

In literacy, 16–23-year-olds in England were among the lowest performers in 2012 but adults aged 27–34 in 2023 significantly outperformed adults in 10 countries (namely, Czechia, Austria, France, Korea, United States, Ireland, Spain, Italy, Slovak Republic and Poland). Similarly in numeracy, 16–23-year-olds were among the lowest performers in 2012 and did not significantly outperform any country. However, England's 27–34-year-olds outperformed adults in six countries in 2023 (namely Ireland, United States, Spain, Slovak Republic, Italy and Poland).

There has been a large decrease in young people considered low-skilled for both literacy and numeracy

As noted previously, adults with low proficiency in literacy and numeracy were those whose scores placed them at PIAAC Level 1 or below and those with high proficiency with scores at Level 4 or 5. Figure 19 shows the proportion of low- and high-skilled adults over the two cycles.

Figure 19 Percentage of low and high skilled 16–24-year-olds in numeracy 2012 compared with 27–35-year-olds in 2023



Source: OECD, PIAAC 2023 England database

In 2012, one-quarter (25%) of adults aged 16–24 had low skills in numeracy. This proportion decreased to 11% for the 27–35-year-olds in 2023. A decrease was also seen for literacy. Additionally, one-fifth of 27–35-year-olds were considered highly skilled in both literacy and numeracy (21% and 20% respectively) in 2023, an increase from 7% of 16–24-year-olds in 2012.

Improvements in literacy and numeracy skills were seen for both the lowest and highest performing adults

Also, the spread of performance can be examined by looking at the distribution of scores and the difference between low and high achievers (at the 10th and 90th percentiles). Table 4 shows that both low achievers (score at the 10th percentile) and high achievers (score at the 90th percentile) significantly improved for this cohort between 2012 and 2023.

Table 4 Scores at the 10th and 90th percentiles for 16–24-year-olds in 2012- and 27–35-year-olds in 2023

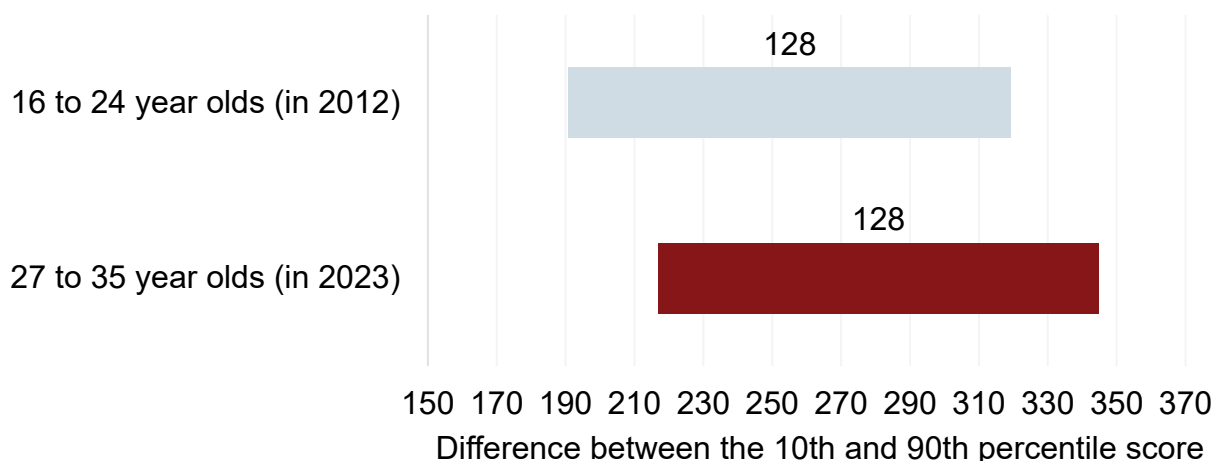
Score	Domain	16–24-year-olds (in 2012)	27–35-year-olds (in 2023)	Difference
Score at the 10 th percentile	Literacy	205	230	*26
Score at the 90 th percentile	Literacy	322	346	*24
Score at the 10 th percentile	Numeracy	191	217	*26
Score at the 90 th percentile	Numeracy	319	345	*26

Asterisk (*) indicate the difference is statistically significant at the 5% level.

Source: OECD, PIAAC 2023 England database

This also means the gap between highest and lowest achievers has remained stable for this birth cohort and not widened further as the young people got older. This is demonstrated with numeracy in Figure 20.

Figure 20 Gap between the highest and lowest performing 16–24-year-olds in 2012 and 27–35-year-olds in 2023 in numeracy



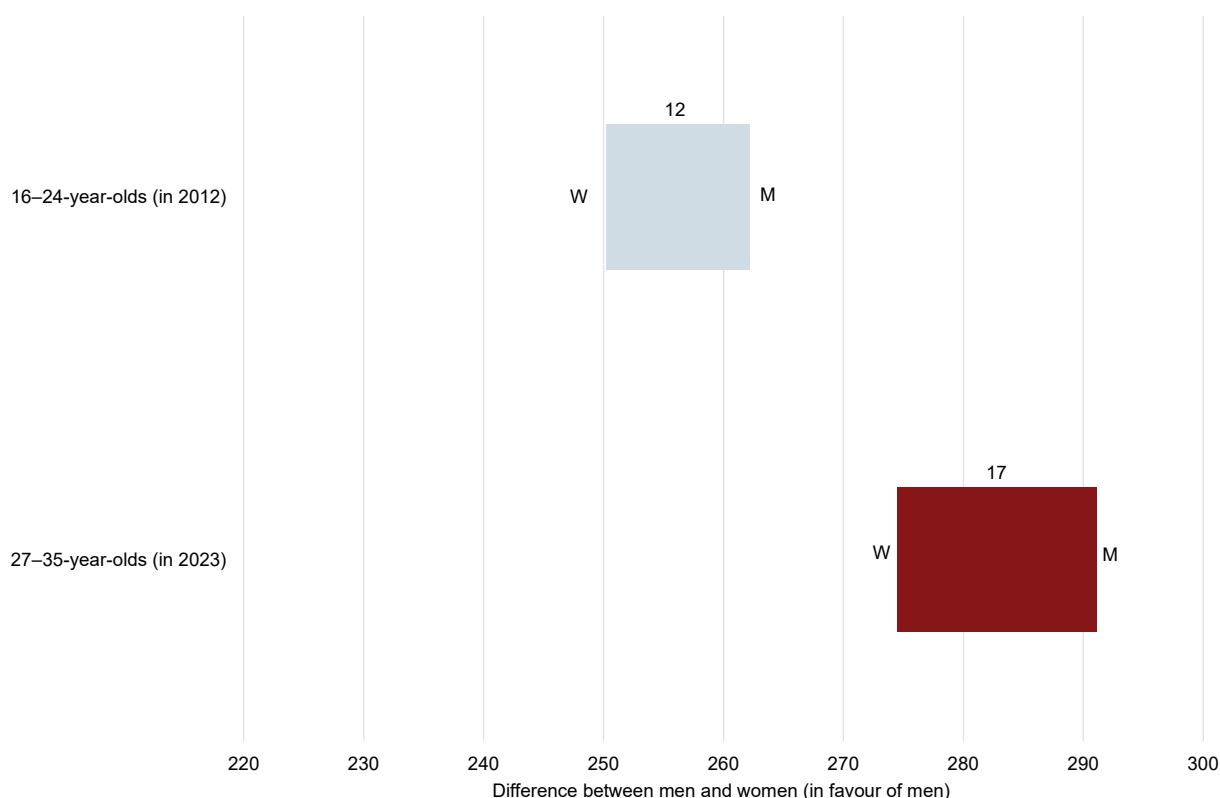
Source: OECD, PIAAC 2023 England database

Men and women aged 27–35 in 2023 had significantly higher scores in literacy and numeracy than men and women aged 16–24 in 2012

If we compare the difference in scores between men and women aged 16–24 in 2012 and between men and women aged 27–35 in 2023, improvements are seen for both men and women, and as such, there is no evidence that either men or women have made bigger gains in literacy or numeracy.

However, there is a persistent, significant, gender gap with this birth cohort in numeracy. As shown in Figure 21, the gender gap of 12 points in 2012 has increased to 17 points for the 27–35-year-old age group. This increase was not significant.

Figure 21 Gender gap in numeracy for 16–24-year-olds in 2012 and 27–35-year-olds in 2023



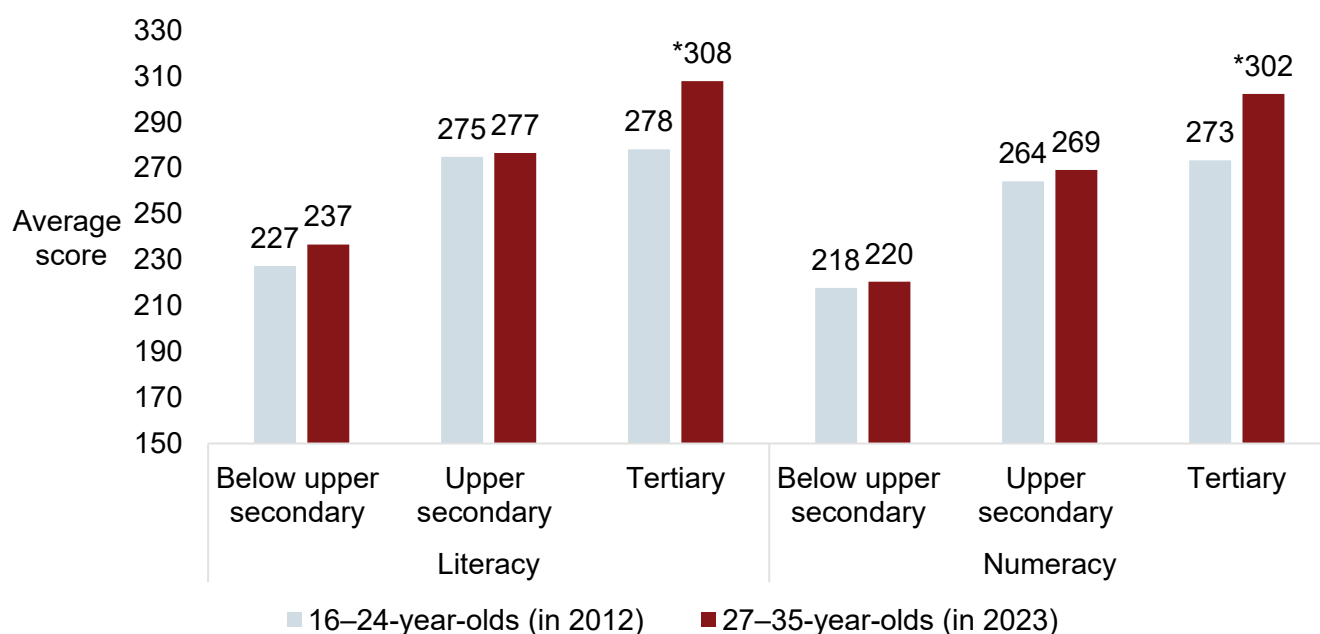
Source: OECD, PIAAC 2023 England database

The gap between adults with below secondary qualifications and those with either upper secondary or tertiary level qualifications is substantial

The gap between high and low qualified adults is complicated to unpick as, inherently, the opportunity to study higher levels of education increases with age. The youngest age group in 2012 contained young people still in school and working towards upper secondary qualifications. By the very nature of being older, the cohort in 2023 (aged 27–35 years) has had greater opportunity to complete secondary-level and post-secondary-level qualifications, including post-16 technical and vocational routes. This is reflected by the increase in those completing tertiary qualifications, from 31% for 16–24-year-olds to 51% of 27–35-year-olds.

Figure 22 shows a significant increase in the literacy and numeracy skills of adults who have completed a tertiary qualification. However, there is no significant change in skills for adults in this birth cohort qualified to upper secondary or below upper secondary level. This suggests that literacy and numeracy skills are less likely to improve once you leave education.

Figure 22 Average scores, by qualification level, for 16–24-year-olds in 2012 and 27–35-year-olds in 2023



Asterisk (*) indicate a Cycle 2 score which is statistically significantly different at the 5% level from Cycle 1.

Source: OECD, PIAAC 2023 England database

The gap in literacy and numeracy skills between adults with a tertiary qualification compared with adults with lower-level qualifications has increased. For adults who were 27–35 in 2023, there was an 82-point difference in numeracy skill between young people qualified to a below upper secondary level and adults qualified to a tertiary level. The difference in literacy between the two groups was 71 points.

More adults aged 27–35 were employed compared to 16–24-year-olds in 2012

The vast majority of 27–35-year-olds were employed in 2023 (83%), and this was significantly more than 16–24-year-olds in 2012 (52%). This would be expected, given the opportunity for employment increases with age/the end of formal education.

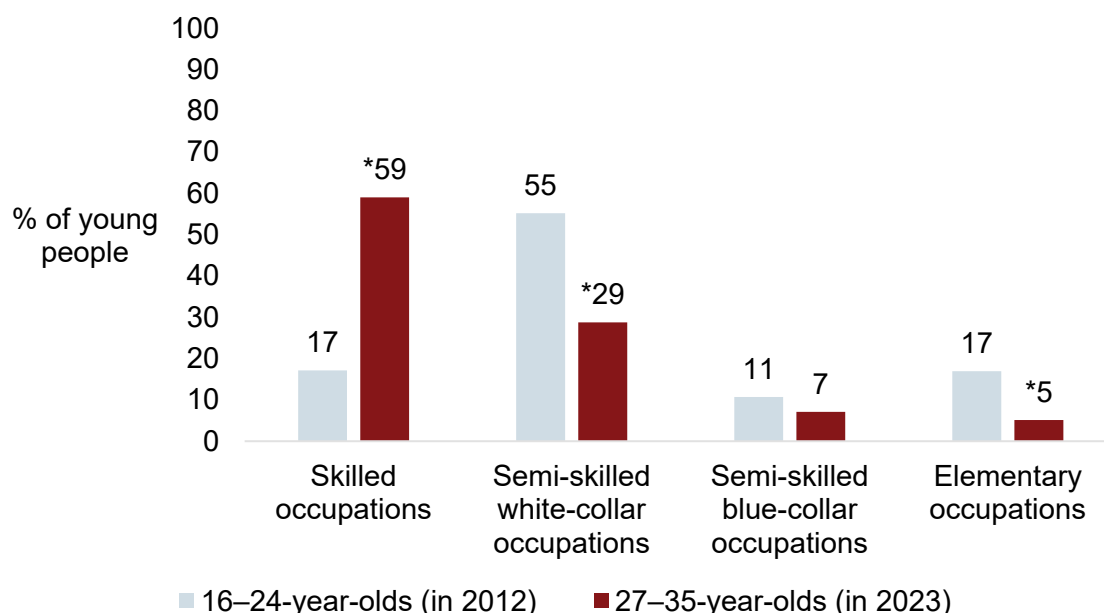
The score for employed adults in this birth cohort has increased. Adults aged 27–35 in 2023 scored 24 points⁹ higher in literacy than adults aged 16–24 in 2012 (296 and 271 respectively) and 27 points higher in numeracy (289 in 2023 and 262 in 2012).

⁹ after taking into account the rounding of figures

There has been a significant increase in those working in skilled occupations, as well as an increase in skill, continuing an already existent gap

There has been a significant increase in the proportion of this cohort working in a skilled occupation¹⁰. In 2012, 17% of 16–24-year-olds were working in skilled occupations which more than tripled to 59% of 27–35-year-olds in 2023 (an increase of 42 percentage points). This meant that skilled occupations became the most common occupation type for this birth cohort, overtaking semi-skilled white-collar occupations which was the most popular in 2012 (55%). Decreases were seen across semi-skilled white collar, semi-skilled blue-collar and elementary occupations between 2012 and 2023 as shown in Figure 23.

Figure 23 Percentage of 16–24-year-olds in 2012 and 27–35-year-olds in 2023 by occupation area



Asterisk (*) indicate a Cycle 2 proportion which is statistically significantly different from Cycle 1.

Source: OECD, PIAAC 2023 England database

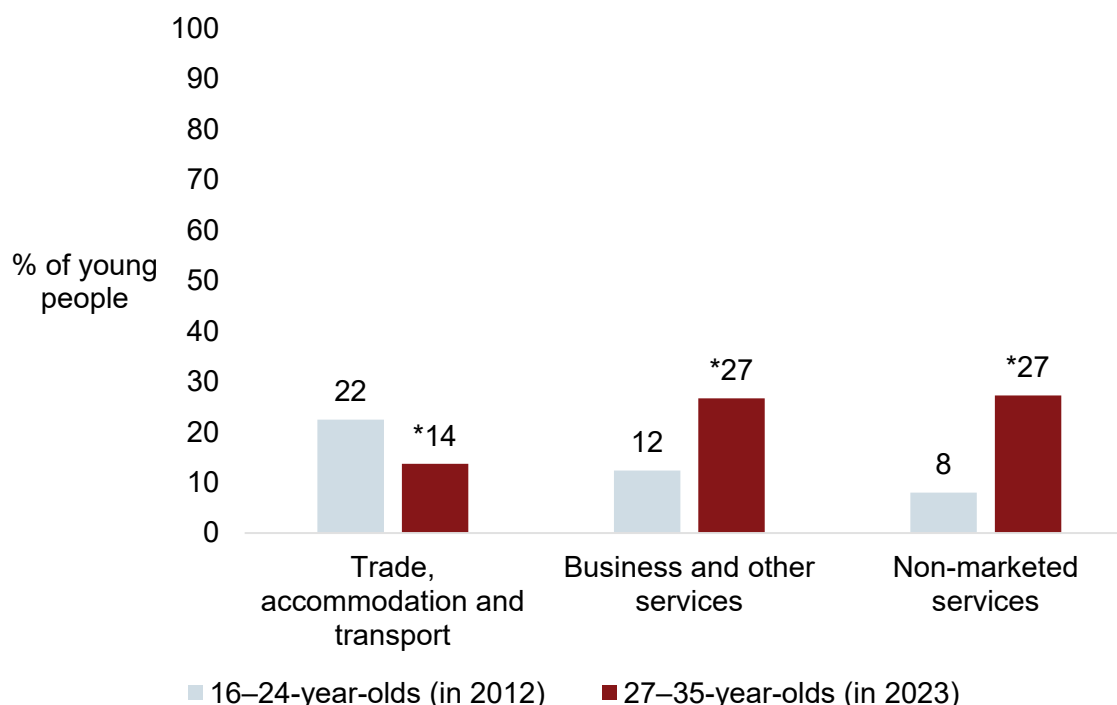
Those in skilled occupations at age 27–34 scored significantly higher than those in skilled occupations at age 16–24. This was true for both literacy (308 in 2023 and 290 in 2012) and numeracy (303 in 2023 and 284 in 2012). Significant changes were not observed for adults working in the 3 remaining occupation areas which has led to a widening of the skills gaps between those in skilled occupations and the other occupation areas.

As shown in Figure 24, when analysing industry sectors, between 2012 and 2023, there has been a significant decrease in the proportion of this birth cohort working in trade,

¹⁰ Some caution is advised in interpretation. This variable includes the occupation type of either young people's current or last job.

accommodation and transport (9%) and a significant increase in those working in business and other services, and non-marketed services (27% for each).

Figure 24 Percentage of 16–24-year-olds in 2012 and 27–35-year-olds in 2023 by industry area



Asterisk (*) indicate a Cycle 2 proportion which is statistically significantly different from Cycle 1.

Source: OECD, PIAAC 2023 England database

Adults aged 27–35 in 2023 who were working in business and other services and adults working in non-marketed services also scored significantly higher than 16–24-year-olds in 2012 working in the same sectors.

27–34-year-olds in 2023 were more likely to use a computer or digital device for online banking, and to read letters, emails and memos than 16–24-year-olds in 2012

This analysis also explored the extent to which the use of literacy, numeracy and Information and Communications Technology (ICT) skills in everyday life has changed for this birth cohort. Some of these changes reflect the growth in the ubiquity of technology now, compared to 2012 as well as the fact this cohort has aged. Key findings from this analysis include:

- 27–34-year-olds in 2023 were more likely to use ICT for online banking or ecommerce ‘every day’ than 16–24-year-olds in 2012 (58% and 12% respectively). This reflects a wider increase in ICT for this purpose seen for all adults between the two cycles (Wheater *et al.*, 2024).

- There was also an increase in the proportion of adults who read letters, memos or emails 'every day' (72% in 2023 compared to 62% in 2012). Again, this might reflect the increase in use of technology between the cycles.
- The frequency of reading financial statements for this birth cohort has increased over time, with an increase of 11% in adults reading them 'every day' (21% in 2023 and 10% in 2012).
- Over a fifth of 27–34-year-olds read books 'every day' (22%) and this was similar to the proportion of 16–24-year-olds in 2012 (23%). Conversely, a smaller proportion 'never' read books, increasing significantly between cycles (18% of 27–34-year-olds and 24% of 16–24-year-olds).

Conclusion

Young people aged 16–24 in 2012 and 2023

Across key population demographics (such as gender, region, books in the home at age 14) young people in 2012 were similar to young people in 2023. However, there were some differences observed between the two groups of young people. Young people in 2023 (and their parents) were educated to a higher level than young people in 2012. For young people, this reflects the policy change to raise the school leaving age to 18 between the two cycles of the Survey of Adult Skills.

There were also differences in characteristics related to the workforce between the two cycles. An increase in employment and a decrease in unemployment was seen between 2012 and 2023. Additionally, there has been an increase in young people working in skilled occupations between cycles. Young people working in skilled occupations tend to have higher average scores, as noted for all adults who took part in the survey (Wheater *et al.*, 2024).

In terms of skills, whilst women aged 16–24 in 2023 had significantly better literacy and numeracy skills than in 2012, men had not made significant improvements in literacy skills, although there were significant improvements in numeracy for men.

There seems to be a positive story for young people with the lowest skills with regards to education level. The size of the population of young people with below upper secondary qualifications has reduced, but there is no evidence that young people in this group have fallen further behind their peers in 2012. In fact, they may have made greater improvements, masked by the change in profile of the group of below upper secondary young people, with more young people (and likely, comparatively, higher-skilled) having upper secondary qualifications in 2023 than was the case in 2012. However, as a result, the group of young people with an upper secondary level qualification in 2023 is broader than 2012 and this group has not seen similar large gains in skills compared with the other 2 groups (below upper secondary and tertiary). As this group now accounts for 67% of 16–24-year-olds, this does raise concern about how skills of this group are best supported.

A lower level of education was significantly associated with the probability of being low-skilled for young people. This was true even when holding other factors constant such as gender, immigration status etc. This indicates the importance of education in the development of literacy and numeracy skills. It also suggests that there are greater skill gains for those within education, more so than perhaps skills gained outside of education. Other research using PIAAC data has pointed to the power of higher education in terms of social mobility (Brooks *et al.*, 2025).

Whilst there were some regional variations in how much young people have improved between cycles, region was not significantly associated with the probability of being low-

skilled. Similarly, improvements were seen for young people who learnt English as a first language, but not for those who learnt a language other than English as their first language. However, this variable was not significantly associated with the probability of being low-skilled when other factors were considered.

With all other things equal, the association of characteristics such as age, gender, and socio-economic background with literacy and numeracy have declined since 2012. This suggests that background has less of an association with outcomes in 2023 than it did in 2012.

Adults aged 16–24 in 2012 and 27–35 in 2023

There has been a large improvement in skills of the birth cohort aged 16–24 in 2012 11 years on compared with other countries. Improvement in literacy and numeracy skills were seen for both the lowest and highest performing adults. Therefore, these adults rapidly improved their literacy and numeracy skills in post-compulsory education and early work.

Whilst both men and women have improved over time, there continues to be a gap for this birth cohort in terms of numeracy skills, with males having higher skills in numeracy.

There were more 27–35-year-olds qualified to a tertiary level in 2023 than there were in 2012 when this group was aged 16–24. This is to be expected, as the qualification opportunities increase with age. Young people across all qualification levels have made progress, but some have made more than others. While this is a positive finding for adults below secondary levels of qualifications, the gap between this group and those with either upper secondary or tertiary level qualifications is still substantial.

More 27–35-year-olds were employed and working in skilled occupations than young people aged 16–24 in 2012, and their literacy and numeracy skills were significantly better. For adults working in skilled occupations, there was a significant increase in literacy and numeracy skills between 16–24-year-olds and 27–35-year-olds, widening an already present skills gap between skilled occupations and other areas.

Finally, whilst this cohort have made significant progress in literacy and numeracy skill relative to other countries between 2012 and 2023, these adults remain well below some of the top-performing countries such as Finland, Japan and Estonia.

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Appendix A – Logistic regression results

Table A.1 Literacy, Cycle 1

Variable	Comparison variable	Probability	P value (significance)
Aged 20–24	Aged 16–19	-3%	0.374
Male	Female	0%	0.922
Native (first) language: not English	Native (first) language: English	0%	0.994
Born outside of the UK	Born in the UK	11%	0.156
Books in the home at age 14: 26 to 100	Books in the home at age 14: None to 25	-5%	0.265
Books in the home at age 14: 101 or more	Books in the home at age 14: None to 25	-12%	0.061
Education level: Upper secondary	Education level: Below upper secondary	-20%	0
Education level: Tertiary	Education level: Below upper secondary	-25%	0.002
Mother's education level: Upper secondary	Mothers' education level: Below upper secondary	-11%	0.179
Mother's education level: Tertiary	Mothers' education level: Below upper secondary	-20%	0.039
Mother's education level: Not available	Mothers' education level: Below upper secondary	-3%	0.747
Father's education level: Upper secondary	Father's education level: Below upper secondary	-6%	0.263
Father's education level: Tertiary	Father's education level: Below upper secondary	-3%	0.703
Father's education level: Not available	Father's education level: Below upper secondary	-2%	0.768
Region: Midlands	Region: North	-2%	0.693
Region: South	Region: North	-1%	0.868
Region: Not available	Region: North	-1%	0.898

Source: OECD, PIAAC 2023 England database

Table A.2 Numeracy, Cycle 1

Variable	Comparison variable	Probability	P value (significance)
Aged 20–24	Aged 16–19	-4%	0.321
Male	Female	-5%	0.165
Native (first) language: not English	Native (first) language: English	3%	0.792
Born outside of the UK	Born in the UK	12%	0.165
Books in the home at age 14: 26 to 100	Books in the home at age 14: None to 25	-9%	0.055
Books in the home at age 14: 101 or more	Books in the home at age 14: None to 25	-19%	0.001
Education level: Upper secondary	Education level: Below upper secondary	-18%	0.001
Education level: Tertiary	Education level: Below upper secondary	-27%	0
Mother's education level: Upper secondary	Mothers' education level: Below upper secondary	-11%	0.139
Mother's education level: Tertiary	Mothers' education level: Below upper secondary	-19%	0.033
Mother's education level: Not available	Mothers' education level: Below upper secondary	1%	0.874
Father's education level: Upper secondary	Father's education level: Below upper secondary	-11%	0.067
Father's education level: Tertiary	Father's education level: Below upper secondary	-12%	0.173
Father's education level: Not available	Father's education level: Below upper secondary	-6%	0.403
Region: Midlands	Region: North	3%	0.559
Region: South	Region: North	1%	0.799
Region: Not available	Region: North	1%	0.928

Source: OECD, PIAAC 2023 England database

Table A.3 Literacy, Cycle 2

Variable	Comparison variable	Probability	P value (significance)
Aged 20–24	Aged 16–19	5%	0.164
Male	Female	2%	0.589
Native (first) language: not English	Native (first) language: English	9%	0.213
Born outside of the UK	Born in the UK	11%	0.152
Books in the home at age 14: 26 to 100	Books in the home at age 14: None to 25	-6%	0.183
Books in the home at age 14: 101 or more	Books in the home at age 14: None to 25	0%	0.999
Education level: Upper secondary	Education level: Below upper secondary	-15%	0.019
Education level: Tertiary	Education level: Below upper secondary	-19%	0.021
Mother's education level: Upper secondary	Mothers' education level: Below upper secondary	-7%	0.399
Mother's education level: Tertiary	Mothers' education level: Below upper secondary	-14%	0.069
Mother's education level: Not available	Mothers' education level: Below upper secondary	7%	0.53
Father's education level: Upper secondary	Father's education level: Below upper secondary	2%	0.731
Father's education level: Tertiary	Father's education level: Below upper secondary	1%	0.89
Father's education level: Not available	Father's education level: Below upper secondary	11%	0.144
Region: Midlands	Region: North	8%	0.283
Region: South	Region: North	1%	0.873
Region: Not available	Region: North	-1%	0.929

Source: OECD, PIAAC 2023 England database

Table A.4 Numeracy, Cycle 2

Variable	Comparison variable	Probability	P value (significance)
Aged 20–24	Aged 16–19	7%	0.14
Male	Female	0%	0.916
Native (first) language: not English	Native (first) language: English	8%	0.334
Born outside of the UK	Born in the UK	7%	0.391
Books in the home at age 14: 26 to 100	Books in the home at age 14: None to 25	-5%	0.316
Books in the home at age 14: 101 or more	Books in the home at age 14: None to 25	-1%	0.836
Education level: Upper secondary	Education level: Below upper secondary	-23%	0.008
Education level: Tertiary	Education level: Below upper secondary	-32%	0.002
Mother's education level: Upper secondary	Mothers' education level: Below upper secondary	-9%	0.332
Mother's education level: Tertiary	Mothers' education level: Below upper secondary	-16%	0.103
Mother's education level: Not available	Mothers' education level: Below upper secondary	7%	0.531
Father's education level: Upper secondary	Father's education level: Below upper secondary	3%	0.615
Father's education level: Tertiary	Father's education level: Below upper secondary	1%	0.86
Father's education level: Not available	Father's education level: Below upper secondary	17%	0.091
Region: Midlands	Region: North	9%	0.165
Region: South	Region: North	3%	0.57
Region: Not available	Region: North	2%	0.734

Source: OECD, PIAAC 2023 England database



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