



# Executive Summary

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**The measurement of individual competencies followed by a longitudinal survey can lead to significant policy insights in understanding the choices made at different ages and the impact these decisions have on consequent education and labour market outcomes.**

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In 2000, Canada launched the Youth in Transition Survey (YITS) in conjunction with the OECD Programme for International Student Assessment (PISA). Since then, the 30 000 Canadian students that participated in PISA 2000 have been interviewed every two years to collect information about their experiences in education and the labour market. The enhanced assessment of individual competencies, the quality of antecedent data and the ability to better adjust for background factors, improve analytical power. The availability of outcome variables later on in time maximises the capacity to explain the increase or decrease in results relative to explanatory factors. YITS will be completed in 2010 and in 2009 participants were re-assessed using the same tools as in PISA 2000. *Pathways to Success* showcases some of the advantages of a PISA longitudinal component by highlighting some key findings emerging from the PISA 2000/YITS data up to the 2006 round.

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**The Canadian example has demonstrated the value of linking PISA to a longitudinal follow-up and can be a model for other OECD countries that are contemplating a strategy to seek a better understanding of the social and economic impact of competencies acquired by the school going population.**

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The analysis and insights emerging from YITS up to 2006 are of interest for Canada and PISA countries. The availability of such a large sample coupled with the student, school and parent questionnaires as well as the student assessment resulted in a rich source of information. Its geographical diversity, the heterogeneity of its student population and the institutional variance across educational systems through provinces allows for a varied and complex set of circumstances that may mirror those found in many other PISA participating countries and economies.

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**Canada measured up favourably in terms of the equity of educational outcomes and the excellence of student achievement across an array of student socio-economic and background characteristics.**

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Canadian performance in PISA 2000 showed that it is possible to succeed in providing both excellence and equity in complex and heterogeneous circumstances. PISA 2000 also proved useful in Canada to identify remaining challenges. Given the diversity of the Canadian education systems, Canada's experience provides insights that may be of interest to other countries. For all of these reasons, the results discussed in this report are relevant for a global audience.

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**High levels of competencies at age 15 are associated with linear pathways and higher educational attainment – notably a university education – but the Canadian evidence on nonlinear pathways (those shifting between education and work) show that many paths are available for youth to pursue a successful academic and professional career.**

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The analysis of youth pathways through education and work is one of the critical advantages of longitudinal studies. For Canada, YITS shows that most youth follow linear pathways (proceed straight to post-secondary education from secondary school). Combining PISA and YITS, the evidence shows that in Canada educational attainment was associated with higher performance in PISA 2000. All students in university or college in 2006 (at age 21) had PISA scores well above the OECD average of 500 score points. The vast majority of university students in 2006 were top performers in PISA 2000 (scoring at Levels 4 and 5). Sizable proportions of university (14%) and college students (35%) worked before pursuing their post-secondary education degrees. Those at work in 2006 formed the most heterogeneous group of respondents in terms of their PISA 2000 scores. The degree of variation in the scores is evidence that high proficiency as measured by PISA is not a prerequisite for entry into post-secondary education and that students can continue to gain competencies through further education.

Generally speaking, students who completed secondary school at an older than average age, regardless of whether they attended post-secondary education or not, had fared worse in terms of their achievement on PISA in 2000. Also, students proceeding directly to work from school had low PISA scores. This may be indicative of the negative association between disruptions to schooling or grade repetition on both achievement and later outcomes. Linear pathways to post-secondary education were associated with higher reading scores which suggest that policies to promote post-secondary education attendance could include initiatives to promote smooth transitions to post-secondary education.

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**Higher achievement in PISA plays a role in predicting transition from and to education, work and inactivity. Notably, high PISA scores made a substantial contribution to completion of secondary school and participation in at least some post-secondary education even after taking other student background characteristics into account.**

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The results also show that there is a strong association between reading proficiency and educational attainment in longitudinal multivariate analyses, after adjusting for background factors, indicating that strong competencies could overcome effects of disadvantages. Students in the bottom quartile of PISA reading scores were much more likely to drop out of secondary school and less likely to have completed a year beyond grade 12 than those in the top quartile. High achievers were more likely to still be in education at age 21 and also less likely to be in work. If they did work, they were more likely to return to education later. Among men, higher reading and mathematical proficiency had a positive association with transitions to education and lower proficiency, to work. Among women, lower mathematics proficiency had a negative relationship with transitions to work and low maternal education had a negative relationship as well. Years of schooling, that is higher educational attainment, was the other background characteristic that was consistently associated with higher likelihood of continuing in education and a lower likelihood of transitioning to work or inactivity. Other background characteristic, such as parental income, did not help predict transitions.

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**Access to and persistence in post-secondary education and choice of field of study at university are strongly related with higher PISA achievement and some student background characteristics.**

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Access and persistence in post-secondary education, and the appropriate field of study in university are all important outcomes for educational policy design and implementation. But these outcomes are underpinned by complex processes. An advantage of longitudinal data is that they can inform such policies. The nuanced findings and robust evidence discussed in this report confirms the significant value of the longitudinal analyses of pathways available through PISA and YITS.



Longitudinal multivariate analyses from PISA and YITS show the importance of the competencies measured by PISA and other student background characteristics for access to and persistence in post-secondary education and university course choice. For example, students at the top PISA level of reading proficiency (Level 5) were twenty times more likely to access university than those at or below Level 1. Student background characteristics also play an important role in these three areas. A strong intergenerational transmission effect remains present: students with university-educated parents were 4.5 times more likely to attend university, even after adjusting for a range of other background characteristics. Furthermore, participation in university was more sensitive to background characteristics than participation in college. Also, almost two-thirds of students from high income households attended university compared with one-third from the lowest income group. 61% of youth born outside of Canada attended university compared to 43% of Canadian-born youth. Female respondents were more likely to access university. However, gender differences with respect to choice of field of study were marked in some cases. For example, males were five times more likely to choose a pure science than females.

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**At age 21, there is some evidence for the relationship between competencies as measured by PISA and labour market outcomes but most likely it is still premature and any potential impact is likely to strengthen later on in the careers of YITS participants.**

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PISA competencies at age 15 predicted to some extent labour market outcomes at age 21. It is, however, too early to draw firm conclusions since at age 21, youth are barely launching their work careers. Nonetheless, by age 21, women with high reading scores earned 12% more than those with low scores. The relationship was weaker for men. Overall, gender-based earning disparities were evident at age 21, since men earned 23% more than women.

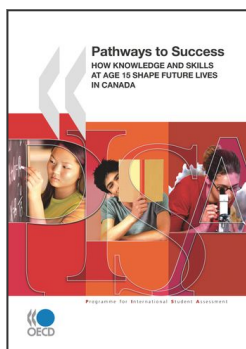
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**In short, combining of a reliable measure of student performance with a longitudinal follow-up lives up to expectations by providing invaluable information for policy makers.**

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This Executive Summary provides an overview of the two objectives of the report: to provide evidence from longitudinal analyses related to the PISA 2000 cohort that can be of value to participating countries and to emphasise the importance of integrating PISA measures of competence with longitudinal surveys for policy making. The report provides results from Canada which integrated PISA and a longitudinal follow up, which can be sensitively generalised to other countries. Furthermore, the value of linking the PISA test of competence with longitudinal data is evident from the generated policy relevant evidence to:

- Track the diversity of traditional and emerging pathways and their impact on higher education as well as labour market pathways based on early measures of competence.
- Monitor participation in higher education by different groups of young people and factors affecting the choice of discipline and type of higher education.
- Identify the factors that influence access to different education and labour market options and whether these pathways were completed, interrupted or unachieved.



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