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Conclusion

Abstract

This report examined a range of evidence from the Canadian experience with PISA and YITS and evaluated the value of combining international assessments of competences in real-life activities with longitudinal follow up data as tools for developing evidence for policy making. It demonstrates the significant long term investment in the linkage of data on individuals over several points in time in relation to their early competencies, as well as their choices, aspirations and behaviours, can have a major pay-off in understanding educational and labour market outcomes in young adulthood. Replicating this experience at an international level could only increase the advantages and benefits of such an effort.

SYNERGIES BETWEEN PISA AND YITS

The demand for internationally comparable evidence by government decision makers has increased the appetite for solid assessments of competencies gained through schooling and a better understanding of the future outcomes that might be expected from various levels of competencies. This is important for the choice of successful government policies based on reliable measures of the returns to public investments in education.

This report had two major objectives. The first goal was to examine a range of evidence from the Canadian experience with the longitudinal Youth in Transition Survey that was integrated with the OECD PISA assessment. The second goal was to evaluate the value of combining international assessments of competence in real life activities with longitudinal follow up data as tools for developing evidence for policy making based on the findings from the first objective.

OVERVIEW OF EVIDENCE FROM LONGITUDINAL ANALYSES

Canada was an interesting laboratory for the test of the first objective. In order to conduct analysis at the national and provincial educational system level, 30 000 15-year-olds participated in PISA in 2000. In addition, for more accurate information regarding parent education, occupation and income, parents of these children were also interviewed. These same 30 000 children, whose competencies were measured through PISA were interviewed every two years from age 15 to 25 through the longitudinal Youth in Transition Survey.

These results of the long run longitudinal analyses of the pathways of a representative cohort of children born in 1984, whose competencies were measured in the penultimate year of compulsory schooling and who made choices through the ages of 17 to 21 that impacted their educational and labour market outcomes, provide an overview of the type of predictive evidence related to the outputs of education that can inform policymaking by governments of OECD member countries.

In 2000, Canadian 15-year-olds performed well compared to other countries indicating that high quality education was being provided despite the complexity and diversity of the educational systems. Almost three quarters of all 15-year-olds scored at Level 3 or higher on the PISA 2000 reading assessment. Though there were variations in the performance within Canada, performance variation between schools as well as between socio-economic groups was comparatively low.

Canadian youth had 48 pathway options to further education and work. About three quarters of the students took a linear pathway to university and also had the highest PISA scores at age 15. Regardless of the pathway, those in university scored at a PISA Level of 4 or 5 and those in college scored at Level of 3 or 4. Indeed, all students in university or college in 2006 at age 21 had PISA scores well above the OECD average of 500. The pathways to college were more diverse, often with spells of work. A significant number of youth followed indirect pathways, shifting between education and work. Half of the youth that were working in 2006 sought employment directly after secondary education and had lower average PISA scores. The dispersion of reading scores among youth who were working in 2006 was much wider than both the university- and college-going youth.

There was a strong correlation between reading skills and educational attainment in longitudinal multivariate analyses. Higher achievement made a substantial contribution to completion of secondary school and participation in at least some post-secondary education. Students in the bottom quartile of PISA reading scores were much more likely to drop out of high schools or to have completed a grade beyond grade 12 than those in the top quartile. High achievers were more likely to be still in education at age 21 and less likely to work. If they did work, they were more likely to return to education later. Among men, higher reading and mathematical proficiency had a positive relationship with transitions to education and lower proficiency to work. However, among women, lower mathematics proficiency was associated with more frequent transitions to work and low mothers education had a negative association as well. Interestingly, parents' education did not have an apparent association.

Though students may access post-secondary education, success is dependent on persistence and course choice. How much of these outcomes are affected by competencies compared to background characteristics, since education is intended to provide equal life chances? Higher PISA proficiencies were strongly related to access, persistence and course choice at university. Students at the top PISA level were 20 times more likely than those at or below Level 1 to access university. There remains a strong intergenerational transmission effect on access through parent's education because students with university educated parents were 4.5 times more likely to attend university. Participation in university was more sensitive to background characteristics than college. Almost two thirds of students from high income households attended university compared with a third from the lowest income group. Surprisingly, 61% of youth born outside of Canada attended university compared to 43% of Canadian born youth. Therefore, it followed that almost two thirds of youth speaking a language other than English or French attended university. Women were more likely to access university but men were five times more likely to choose a pure science course than women.

PISA competencies at age 15 predicted labour market outcomes as well, though it is probably too early to draw conclusion since at age 21, youth are barely launching their work careers. By age 21, women with high reading scores earned 12% more than those with low scores. The relationship was weaker for men. However, gender based earning disparities persist since men earned 23% more than women.

This overview of results shows that the combining of a reliable measure of student performance with a longitudinal follow-up lives up to expectations by providing invaluable information for policy makers. Through the wider dissemination of these results, they may be sensitively generalised to other countries. Furthermore, this strategy generated policy relevant evidence to:

- Compare Canadian student performance to other countries participating in PISA and to examine the life chances of high and low performers.
- Track the diversity of traditional and emerging pathways and their impact on higher education as well 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.

The strategy also confirms the value of assessing competencies in relation to application in real life situations because of the strong predictive impact of such measured proficiencies on later educational and labour market outcomes. The importance of regular and long run waves of data collection in a longitudinal survey provided invaluable information on changing patterns of pathways to education and work with multiple transitions. This monitoring of pathways is important for policies directed to second chance education as well as for education that is work-based.

THE IMPORTANCE OF INTEGRATING PISA WITH LONGITUDINAL SURVEYS FOR EFFECTIVE POLICY MAKING

The measurement of individual competencies by PISA followed by a longitudinal survey in order to understand choices made at different ages and the consequent education and labour market outcomes offer significant new policy insights. The Canadian experience has shown that the significant long term investment in the linkage of data on individuals over several points in time in relation to their early competencies as well as their choices, aspirations and behaviours had a major pay-off in understanding educational and labour market outcomes in young adulthood. The improved quality of antecedent data and the ability to better adjust for background factors improve analytical power. The Canadian example has demonstrated that the value of PISA linked to longitudinal follow up 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 at school and provide insights on the causal nature of these relationships. There may be additional benefits for a joint enterprise, where not only the developmental costs are shared but where there are spin-off benefits from joint and cross-national analyses.