

Effects of educational choices in pre-primary education and school system on the PIAAC key skills

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Analyses in this paper show how educational choices and educational attainment determine the level of skill proficiency. Among younger adults (16 to 40 years old), the difference in numeracy proficiency between people with compulsory education at the most and those with tertiary education is around 42 score points (when accounting for other relevant variables). This extent of this gap represents almost one PIAAC proficiency level. Further relevant factors in connection with PIAAC key skills are the cultural capital of the parental home, the language, and the use of key skills in everyday life and at work.

Early childhood education and care (measured in years at kindergarten) has no statistically significant influence on the PIAAC key skills of the 16 to 40 year olds. However, there is a positive correlation between the length of kindergarten attendance and the first educational choice in the Austrian school system: People with longer kindergarten attendance are more likely to attend the lower level of academic secondary school (i.e. at age 10 to 14) than others.

Another research question deals with potential differences in PIAAC skill proficiency among persons with completed lower secondary school and lower level of academic secondary school; the bivariate analysis shows a difference in literacy and numeracy proficiency of around 30 score points. When accounting for other important characteristics such as educational attainment, the difference is cut in half to around 15 score points, but remains significant.

In a next step the question was raised whether there are performance differences between the three main types of vocational education and training (apprenticeship, intermediate technical and vocational schools 'BMS' and higher technical and vocational colleges 'BHS'). According to bivariate analyses, persons with BHS qualifications demonstrate higher literacy skills than individuals with BMS degree. The last-mentioned group in return shows higher proficiency in literacy skills than workers with an apprenticeship qualification. However, there is no statistically significant difference between BMS graduates and people having completed apprenticeship in their proficiency in the numeracy domain.

Literature constantly points out the important role of the BHS in the Austrian school system (e.g. reduction of social and regional inequalities through the wide mix of students). The particular role of BHS especially for people who have completed lower secondary school is also reflected in our analyses. Graduates from BHS demonstrate a very high level of proficiency in both national and international contexts; only persons who have completed the lower level of academic secondary school and have obtained a tertiary degree are on a statistically significantly higher level of proficiency than people with a BHS degree. Moreover, the PIAAC data show that graduates from BHS attain the same level of proficiency regardless of whether they completed lower secondary-level school or a lower level of academic secondary school. In order to exclude potential selection effects, it will be necessary, however, to conduct skill measurement studies by means of longitudinal surveys.

Keywords: literacy, numeracy, formal education, kindergarten, lower secondary school, vocational education and training