

How important are general skills for vocationally educated?

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An interesting puzzle

- Vocationally educated have a smoother transition to the labour market than their generally educated peers (Ryan 2001; Van der Velden & Wolbers, 2003; Levels et al. 2014)
- This advantage seems to reverse later in life (Hanushek et al. 2016), although the evidence is not conclusive (Forster et al. 2016)
- General skills become more and more important (CEDEFOP, 2015; OECD, 2010), so is the smooth transition of vocational educated career-proof?

The empirical problem

- General skills seem important but no conclusive evidence yet
- This is because a strong association between general skills and wages does not imply causality
- This holds even stronger for vocationally educated as occupation-specific skills are more important for their productivity
- We use the 'effective skill' concept to identify the effect of general skills for the vocational educated

The effective skill concept

- Why would skills matter if they are not used?
- Van der Velden & Bijlsma (2019) introduce concept of effective skills: defined as product of skill proficiency and skill use.
- Basic idea: there can be no effect of skill proficiency if they are not used and vice-versa.
- (Ex. Piano playing skills)

Effective skills and wages

	M1	M2	M3
Skill Proficiency	13.2***	1.6	
Skill Use	9.3***	-2.6	
Proficiency * Use		1.2***	
Effective Skill			1.1***

Van der Velden & Bijlsma, 2019

Research questions

- What is the role of effective skills in predicting wages for vocationally educated at ISCED 3/4?
- Is this different by gender, age, and sector?
- Is this different by characteristics of the vocational education system?
 - Voc orientation: share of voc educ in upper secon educ
 - Voc specificity: share of apprentice in voc educ
- Which characteristics of the vocational education system are associated with high proficiency levels in general skills?

Hypotheses on wages

Wages		
Characteristic	Effect for voc educated	Effect for gen educated
Effective skills	+	++
- young		+
- prime age	+	++
- old	++	++
Interaction with:		
- Voc orientation	+	
- Voc specificity	-	

Hypotheses on skill proficiency

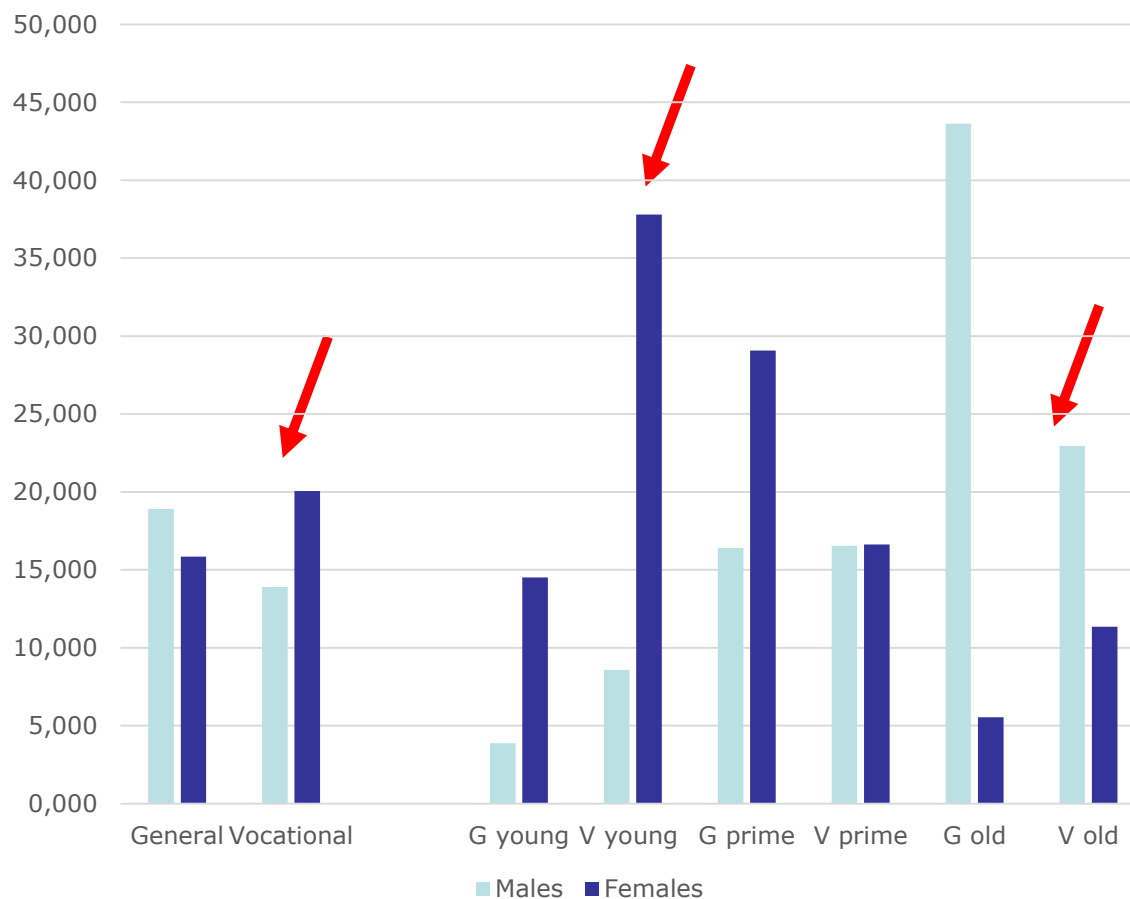
Acquisition			
Characteristic	Effect for voc educated	Effect for gen educated	
Voc orientation	+	++	
Voc specificity	-		

Data

- PIAAC: 25 countries, 22.500 respondents
- Selection wages:
 - Fulltime (≥ 32 h) working employees, aged 20-55.
 - Highest level of education: ISCED 3 or 4.
 - Trimmed wages 1st and 99th percentile
- Selection skill proficiency:
 - All non-students with ISCED 3 or 4, aged 20-35.
- Analyses
 - Separately for vocationally and generally educated
 - Controls for age, age2, years of schooling (and status).
 - Interaction with context characteristics

Main results on wage effect

Wage effects effective numeracy by age



Wage effect by context

Characteristic	Voc males	Voc females	Gen males	Gen females
Interaction with:				
Voc orientation	13.9**	n.s. instead pos	n.s.	-11.8*
Voc specificity	n.s. instead neg	n.s. instead neg	not relevant	not relevant

Main results on acquisition

Characteristic	Voc males	Voc females	Gen males	Gen females
Voc orientation	n.s. instead pos	n.s. instead pos	16.1***	15.3***
Voc specificity	n.s. instead neg	n.s. instead neg	not relevant	not relevant

Conclusions (1)

- Effective general skills i.e., general skills that are actually used, are important for wages: not only for generally educated, but also for vocationally educated.
- Strong evidence for the relevance of general skills for vocationally educated. This effect is:
 - stronger for females than for males!
 - stronger for prime age and older males (as expected)
 - stronger if voc orientation is high (only for males; for females always important)

Conclusions (2)

- So we find that in strong vocational oriented systems the relevance of general skills becomes more important for vocational educated workers
- But, the gap in general skills between generally and vocationally educated also increases in those systems: this is caused by a stronger selection into the general tracks.

Conclusions (3)

- We find no effect of vocational orientation on skill proficiency levels of the vocationally educated
- Interestingly, we also find no negative effect of vocational specificity: countries that focus on workplace-based learning (apprenticeship) have similar skill proficiency levels as countries that focus on school-based learning in the vocational tracks

Policy implications

- General skills are important and a foundation should be provided in initial education.
- This is best done by integrating the acquisition of such skills together with the acquisition of vocational skills, so that they do not compete in learning time.
- But it is also important to update such skills at older ages, as they become more relevant over the career: specifically vocational educated males are at risk