

Examining Socio-economic Equity in ISCED 2 to ISCED 3 Transition in Slovenia

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**I FEEL
SLOVENIA**

Slovenia

Population: 2 million

Capital: Ljubljana



ISCED 2 Education

2023/2024:
456 schools (with 315 dislocated units, 6 private, additionally 48 SEN schools)
196.371 students (20.812 entered grade 1)
18.824 teachers

450 schools
200.000 students
20.000 teachers

ISCED 3 Education

2023/2024:
149 schools (6 private, additionally 6 SEN schools)
80.685 students
7.605 teachers

150 schools
80.000 students
8.000 teachers

A map of ILSA in Slovenia

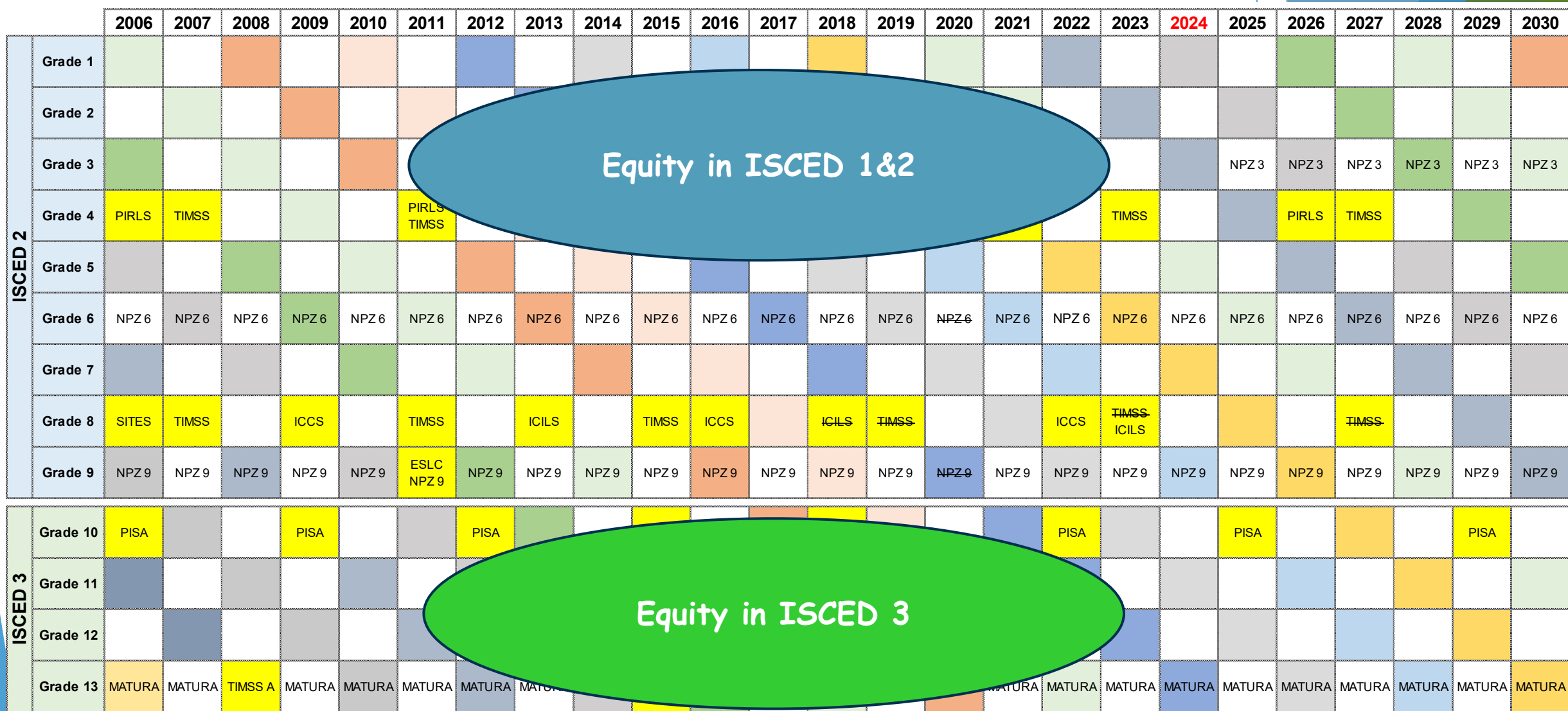
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
ISCED 2	Grade 1																									
	Grade 2																									
	Grade 3																									
	Grade 4																									
	Grade 5																									
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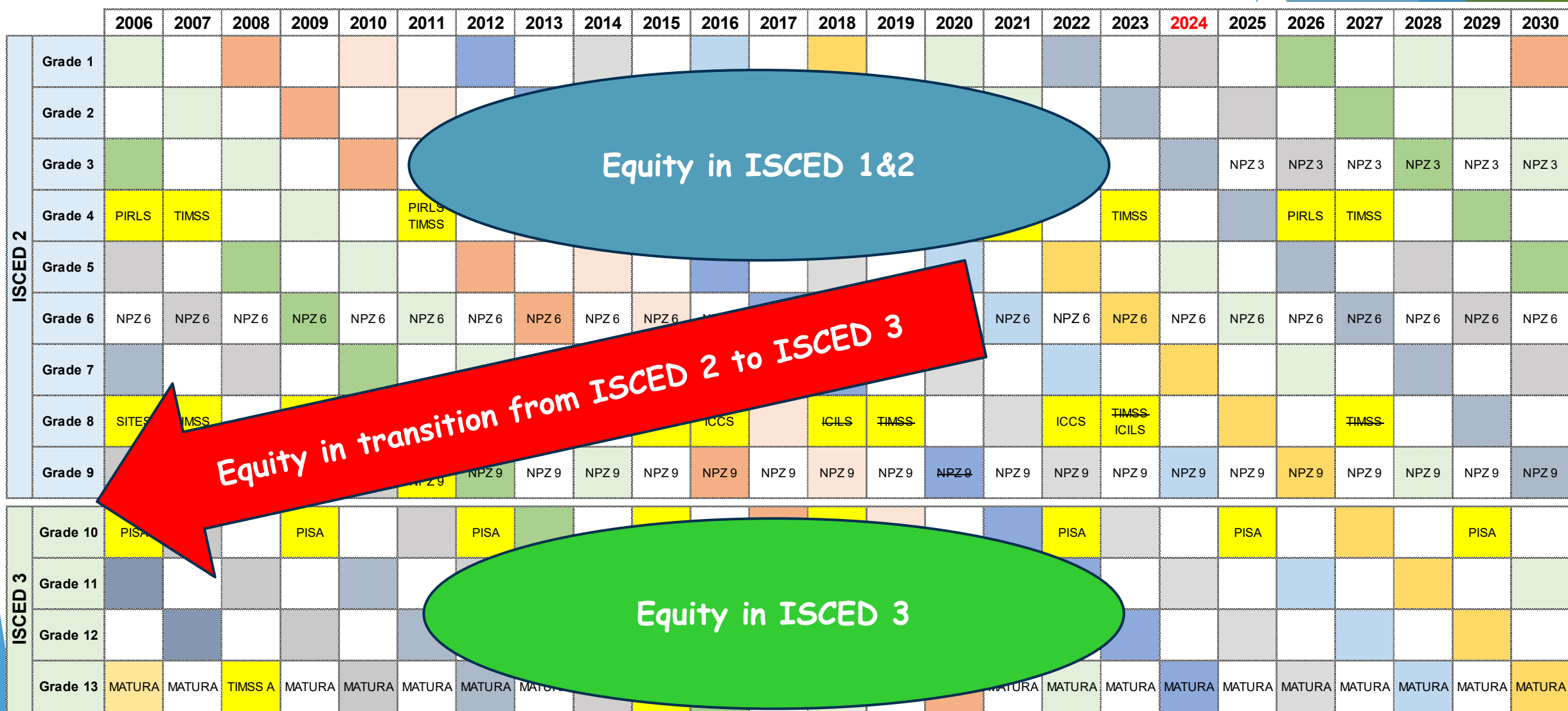
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
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Equity in ISCED 1&2

A map of ILSA in Slovenia



A map of ILSA in Slovenia



The concept of equity ...

- ▶ „... equity-oriented policies should help all students become the best version of themselves.“ (PISA 2022 Vol I, p. 110)
- ▶ Frequently used dimensions for examining educational equity: gender, socio-economic background, immigrant status, ...
- ▶ Many measures of equity ...
- ▶ Two „famous“ measures:
 - Proportion of variance in achievement between schools
 - Proportion of variance in achievement explained by socio-economic background (socio-economic gradient)

What do we know about equity in ISCED 3?

- ▶ PISA 2022, Slovenia: Proportion of variance in (mathematics) achievement between schools is **45%**

(PISA 2022 Vol I, Table I.B1.2.12)

- ▶ Notes: As a percentage of the average total variation in mathematics performance across OECD countries
- ▶ Notes: 2. In some countries/economies, subunits within schools were sampled instead of schools; this may affect the estimation of between-school variation components.



45% is probably overestimated

- ▶ MATURA 2024 (ISCED 3 General) : Proportion of variance in achievement between (ISCED 3 General) schools is
 - 14% Slovenian language
 - 17% Mathematics
 - 13% English



Most variation is within ISCED 3 (General) schools.

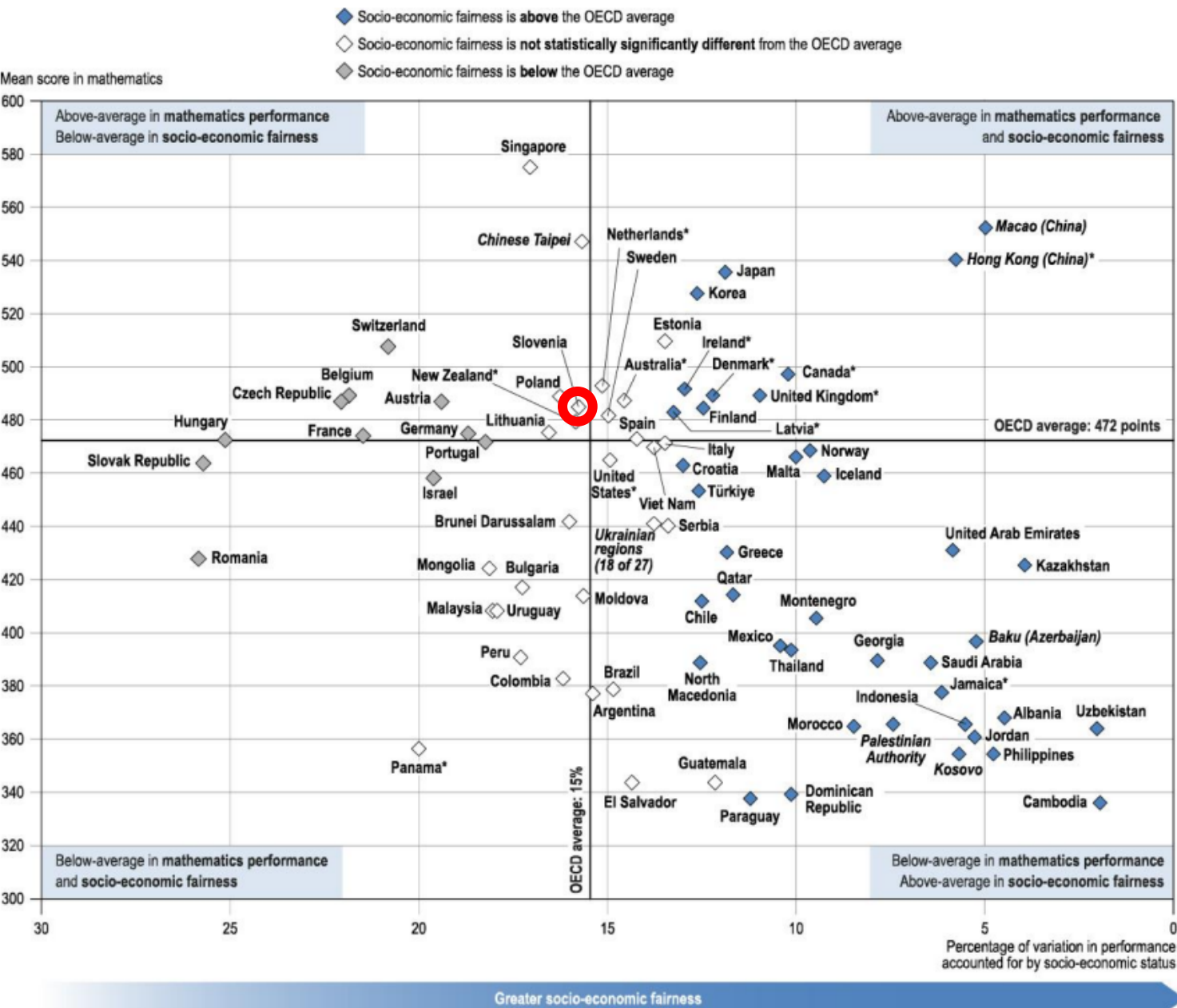
Equity in ISCED 3

PISA 2022, Slovenia: socio-economic gradient in mathematics achievement

strength: 15.7 %
slope: 42 points

PISA 2022 Vol I, p. 116

Figure I.4.2. Strength of socio-economic gradient and mathematics performance

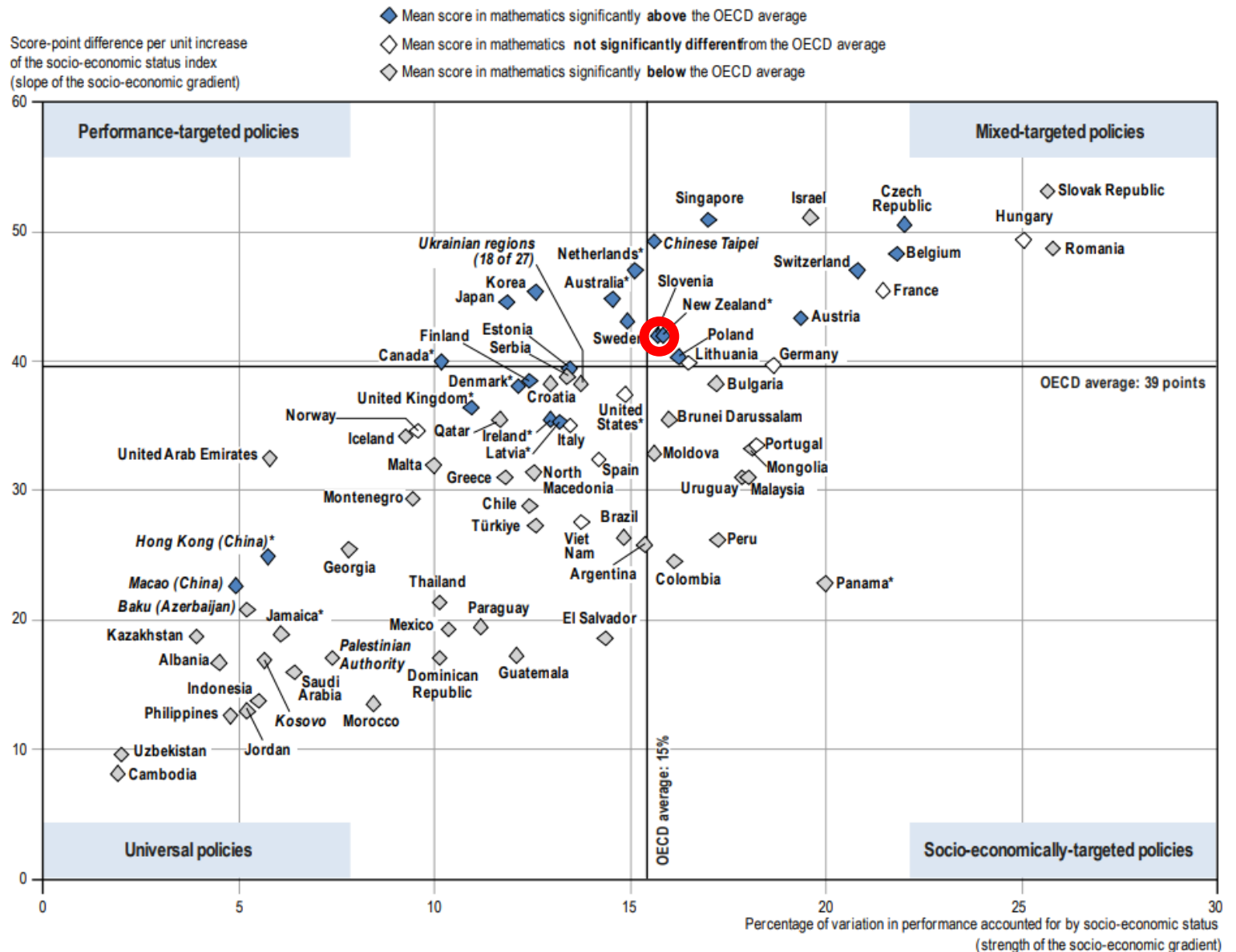


Relationship between strength and slope of socio-economic gradient

strength: 15.7 %
slope: 42 points

PISA 2022 Vol I, p. 132

Figure I.4.13. Strength and slope of the socio-economic gradient



What do we know about equity in ISCED 1&2?

- ▶ **ILSA:** Proportion of variance in achievement between schools is **about 10 %** (PIRLS, TIMSS grade 4, ICCS, ICILS, ...).
- ▶ Slovenia is consistently one of the countries with lowest proportions of variance in achievement between schools.
- ▶ Socioeconomic gradient:
 - ▶ ICCS 2022 Grade 8: strength=16.3 % and slope (β)=0.40
 - ▶ ICILS 2023 Grade 8: strength=7.8 % and slope (β)=0.28
- ▶ **National Assessment of Knowledge**
 - ▶ NPZ 2024 Mathematics, grade 6, last 5 years: 5.8 – 7.8%
 - ▶ NPZ 2024 Mathematics, grade 9, last 5 years : 8.5 – 11.8%



About 90% of variation in achievement is within ISCED 1&2 schools.

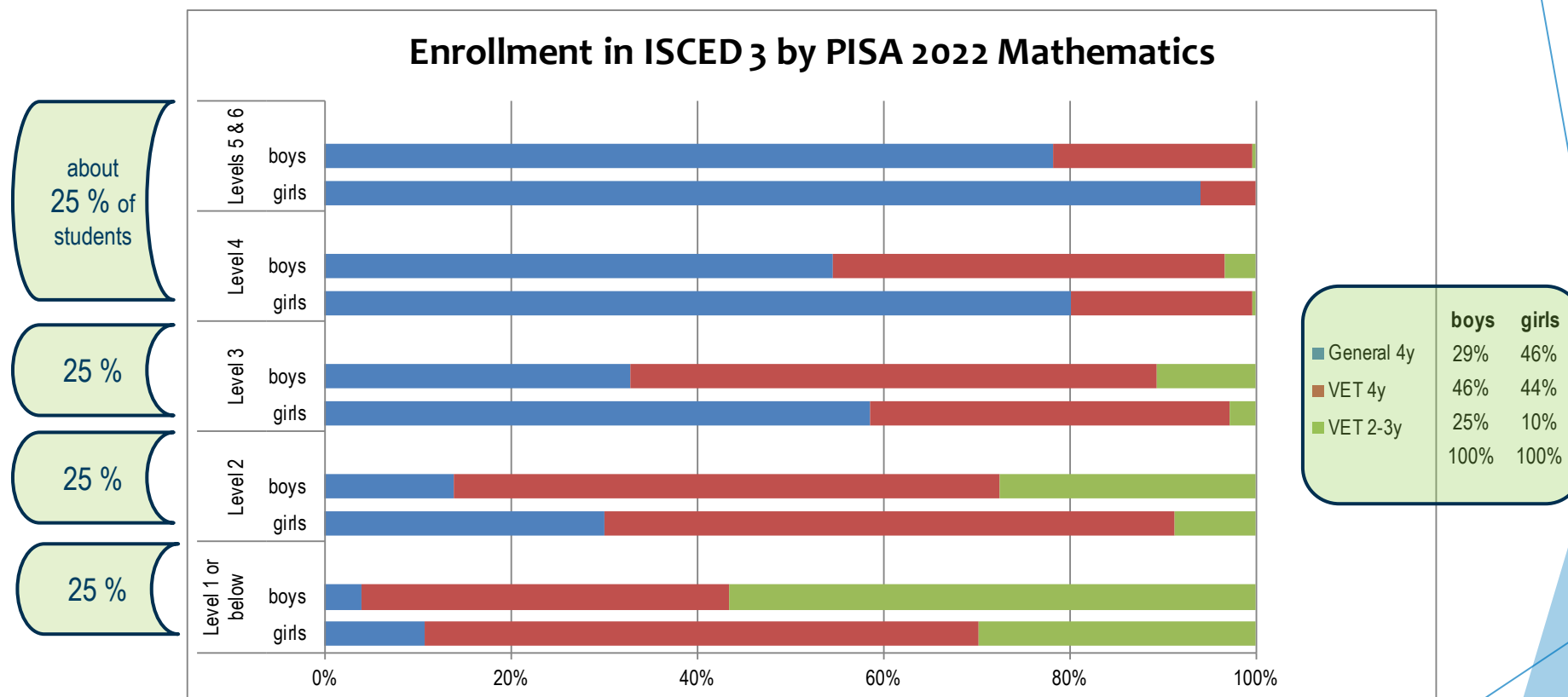
However, individual achievement is important in transitioning from ISCED 2 to ISCED 3.

The process of transition in Slovenia

- ▶ There are three major ISCED 3 educational programmes:
General (Gymnasia, 4 year), VET Professional (4 year), VET Vocational (2-3 year)
- ▶ Generally, students enter an ISECD 3 school and educational programme of their (and their parents') choice; transition rate is basically 100 %.
- ▶ If an educational programme at a particular school has too many applicants selection is carried out. (2024/25: 131 programmes on 58 schools)
 - ▶ Until 2023/2024: based on final grades in ISCED 2 (grades 7-9)
 - ▶ Problem of „grade inflation“
 - ▶ From 2024/2025:
 - ▶ based on final grades in ISCED 2 (Grades 7,8,9) (60% of total points) and
 - ▶ **achievement in NPZ Grade 9** (Mathematics and Mother Tongue) (40 % of total points)

Who enters different ISCED 3 programmes?

... by gender



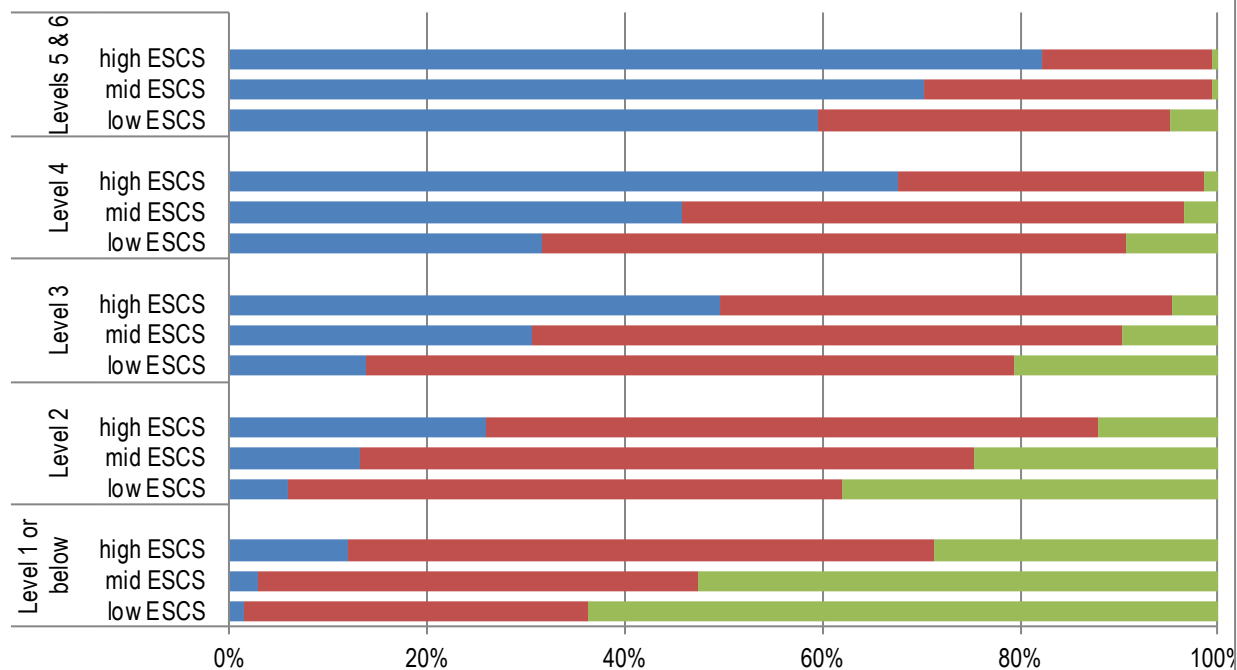
Mathematics achievement in PISA is used as a proxy for achievement at enrollment in ISCED 3. There are no gender differences in PISA 2022 overall mathematics achievement, but there are major gender differences in choices of the ISCED 3 programmes.

Who enters different ISCED 3 programmes?

... by gender and socio-economic background (top, middle and bottom third of distribution)

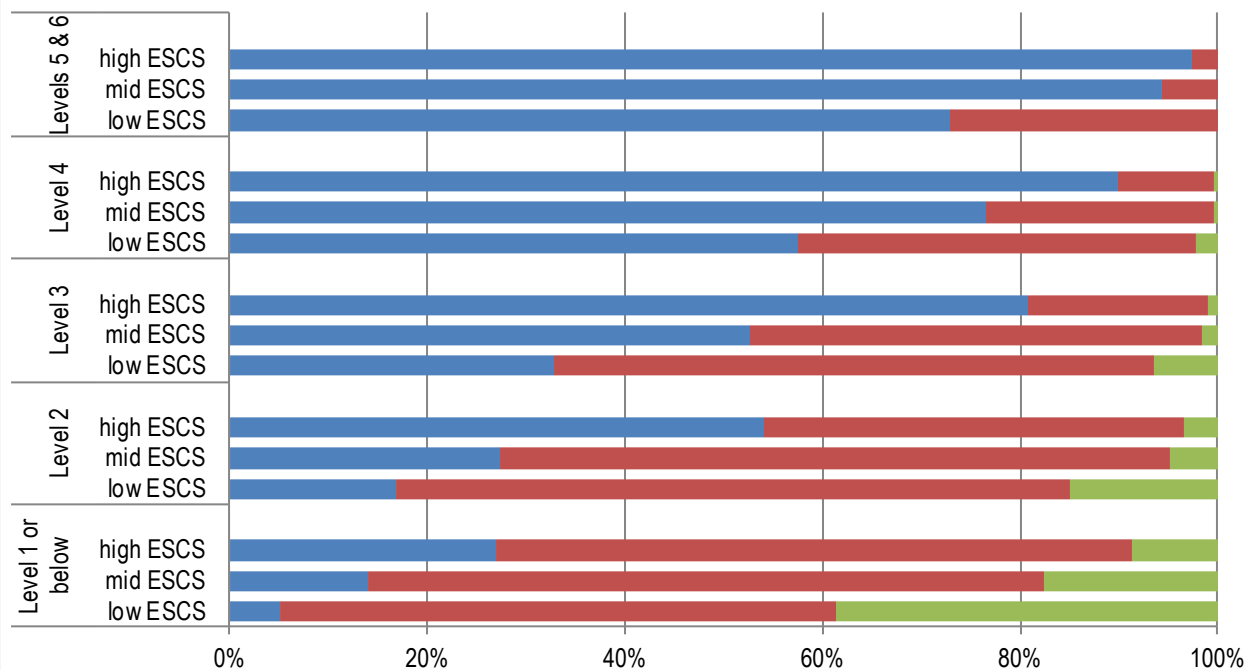
Enrollment in ISCED 3 by PISA 2022 Mathematics, Boys

General 4y VET 4y VET 2-3y



Enrollment in ISCED 3 by PISA 2022 Mathematics, Girls

General 4y VET 4y VET 2-3y

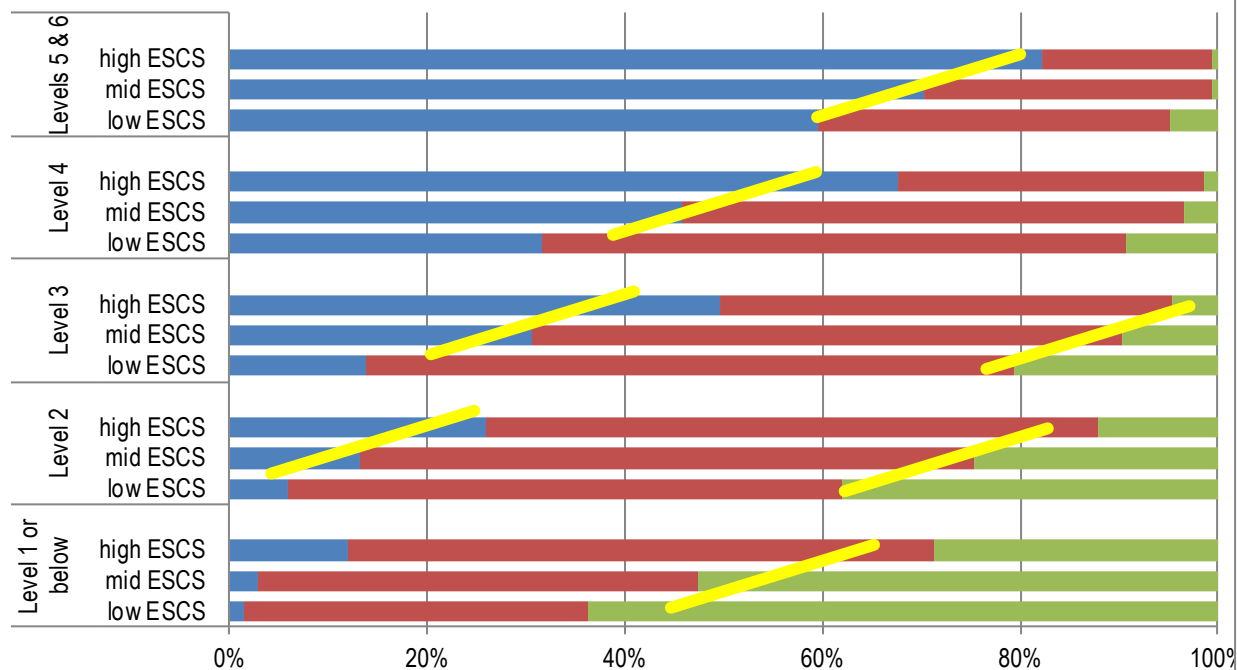


Who enters different ISCED 3 programmes?

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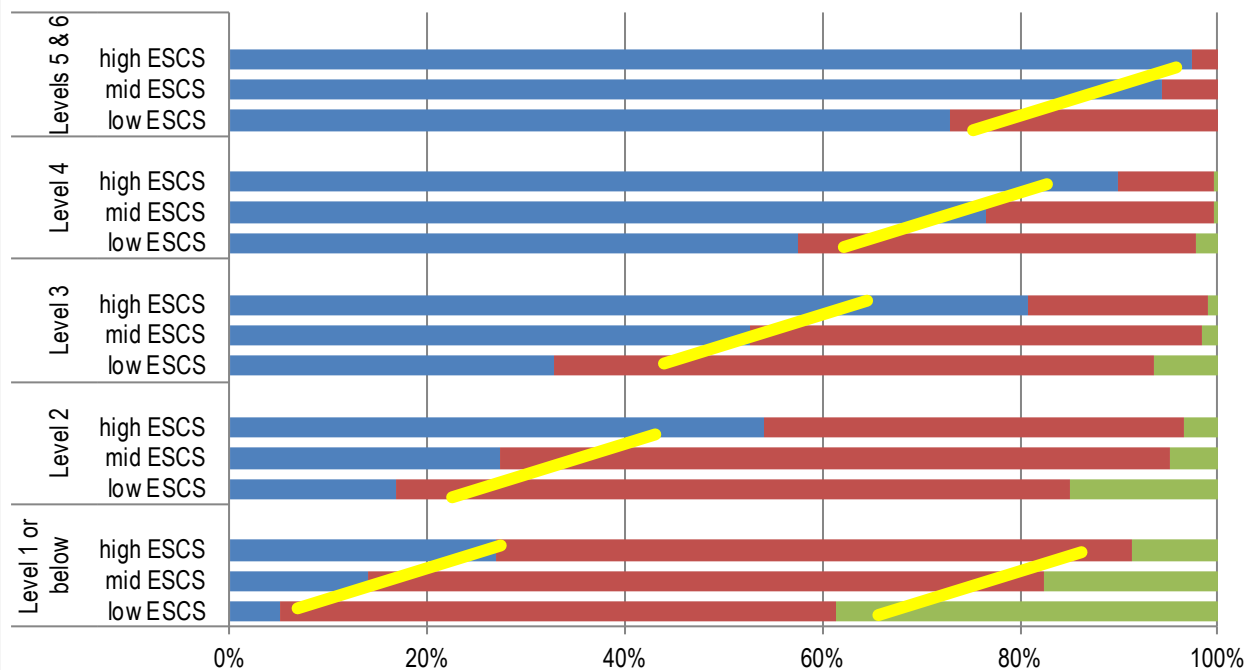
Enrollment in ISCED 3 by PISA 2022 Mathematics, Boys

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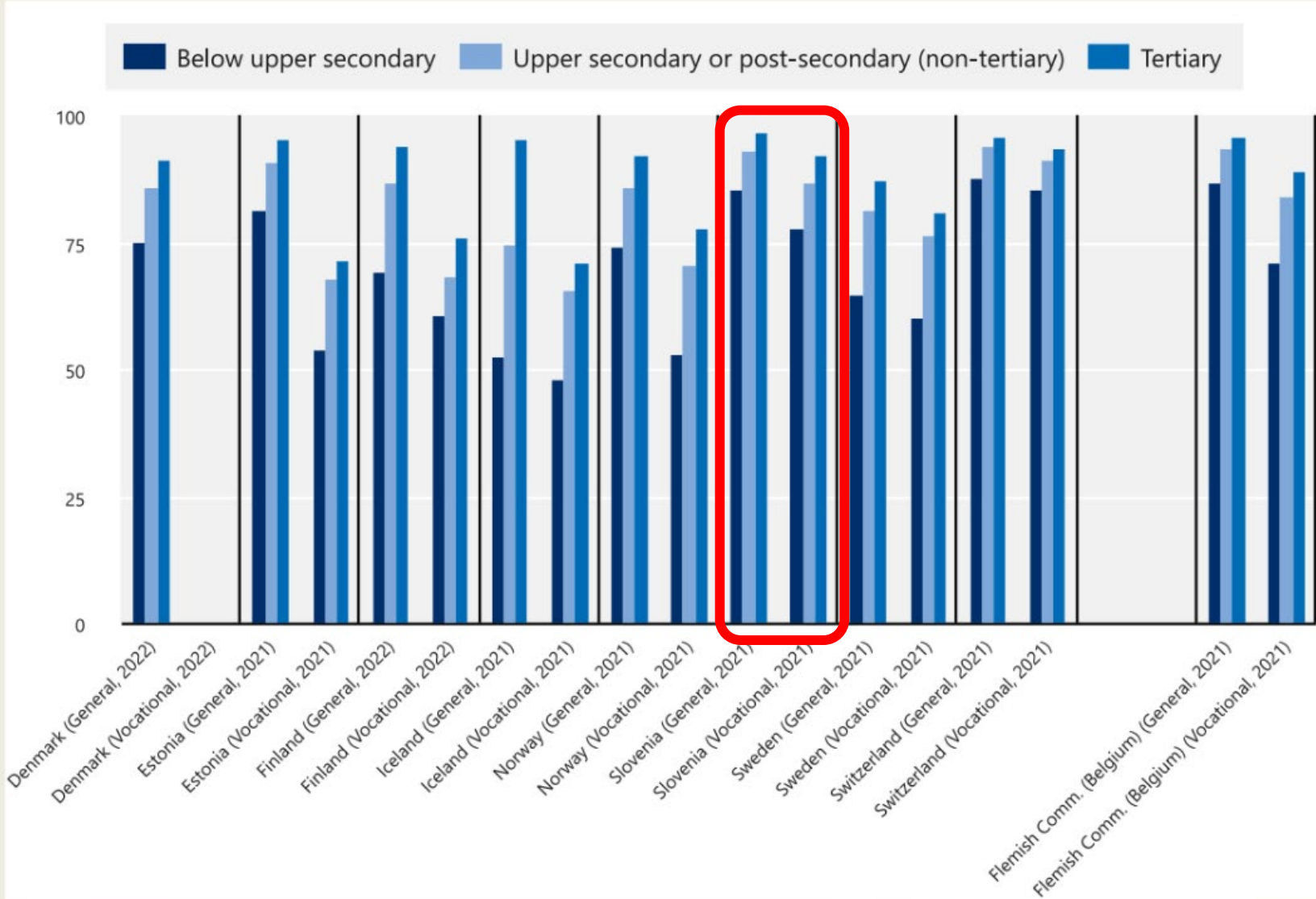
General 4y VET 4y VET 2-3y

Within the same
achievement group there
still seems to be an impact
of socio-economic
background.

Completion of ISCED 3 programmes by parents' education

Figure B3.6. Upper secondary completion rates, by parents' educational attainment (latest available year)

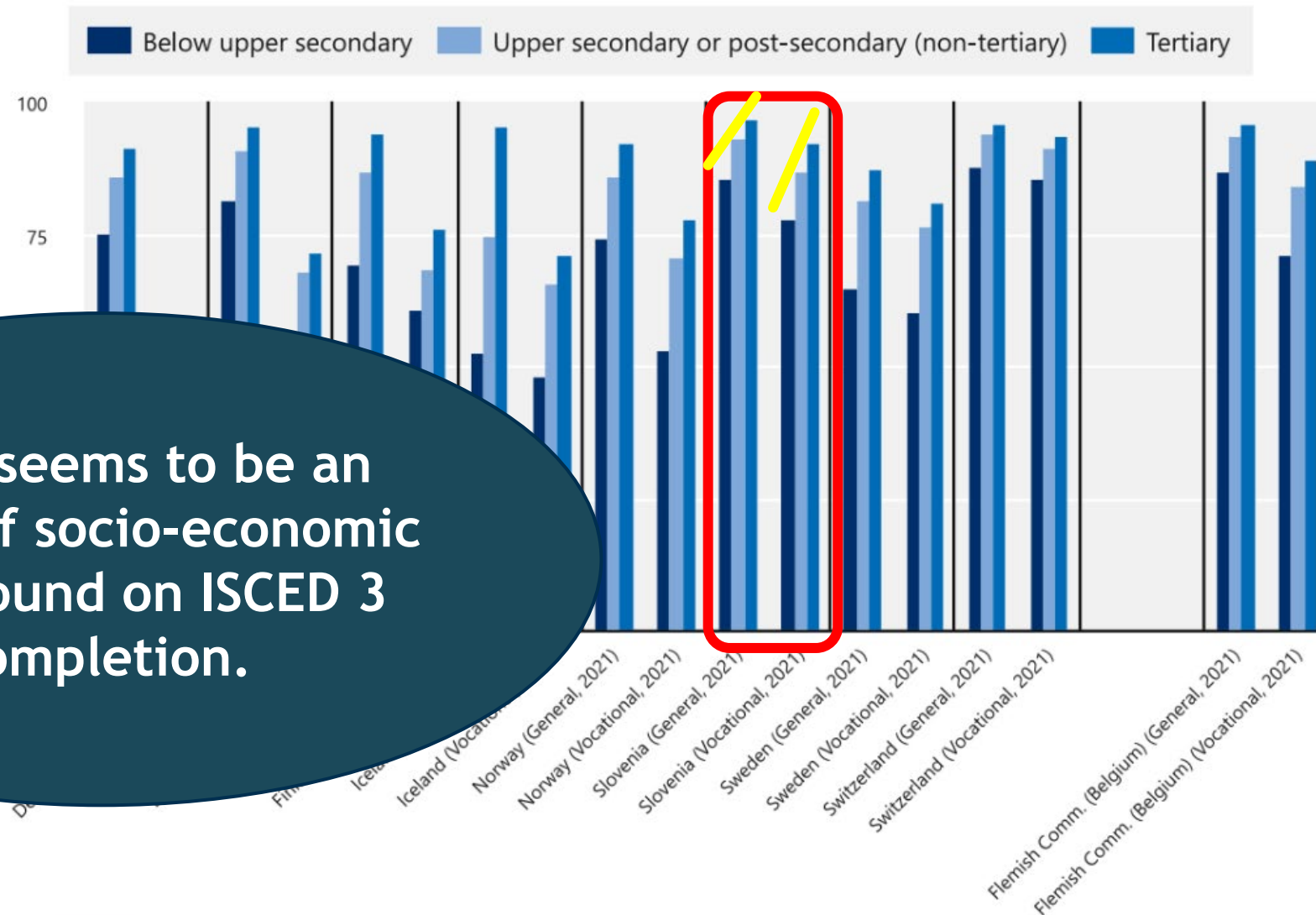
Completion rate of full-time students by the theoretical duration plus two years, in per cent



Completion of ISCED 3 programmes by parents' education

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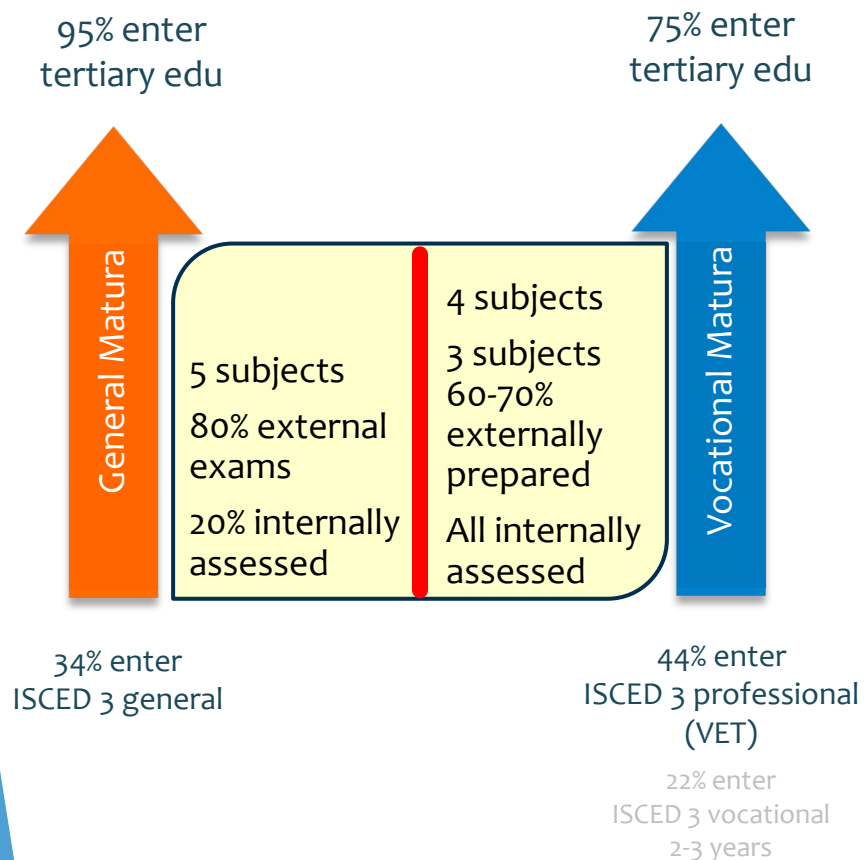
Completion rate of full-time students by the theoretical duration plus two years, in per cent



There seems to be an impact of socio-economic background on ISCED 3 completion.

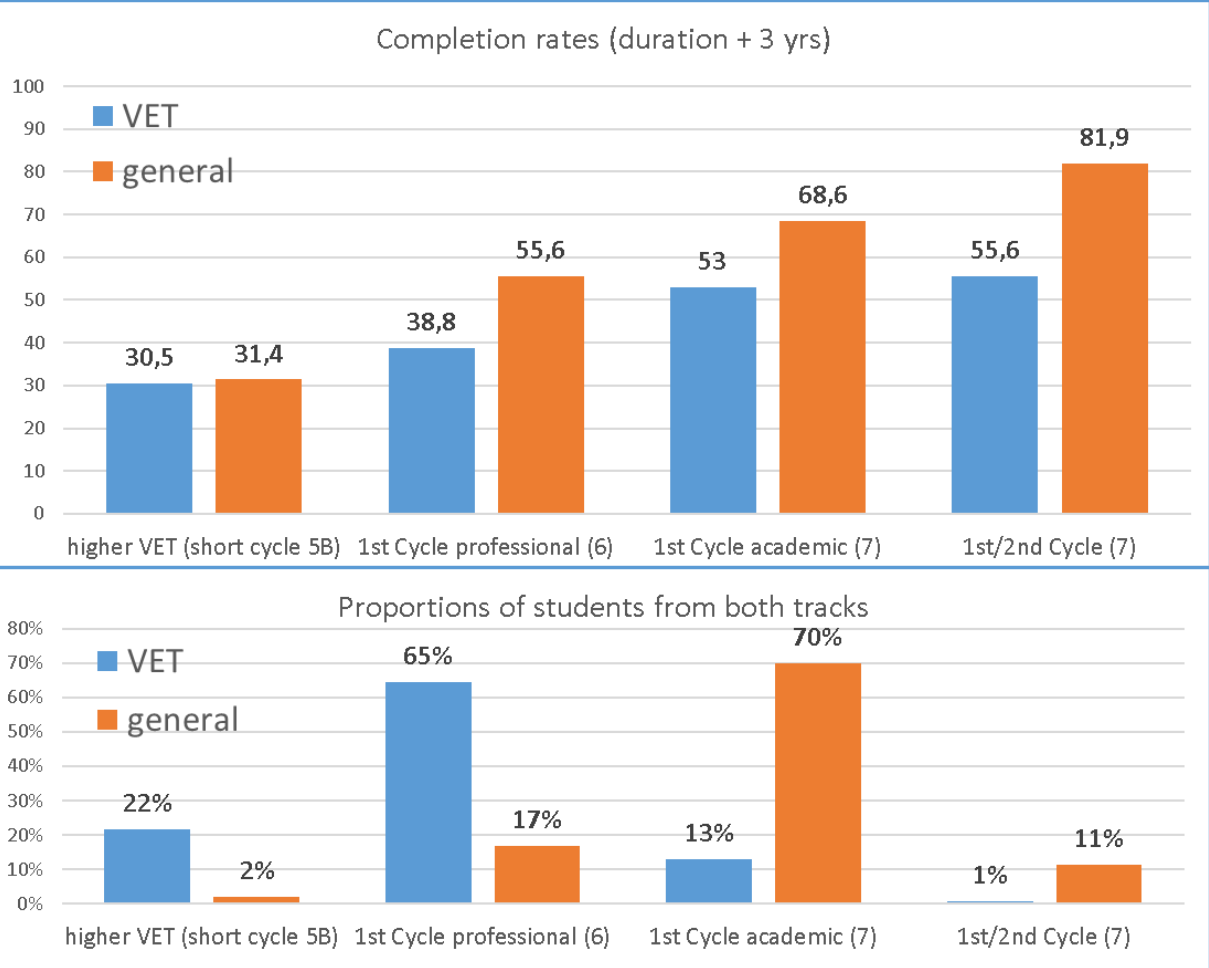
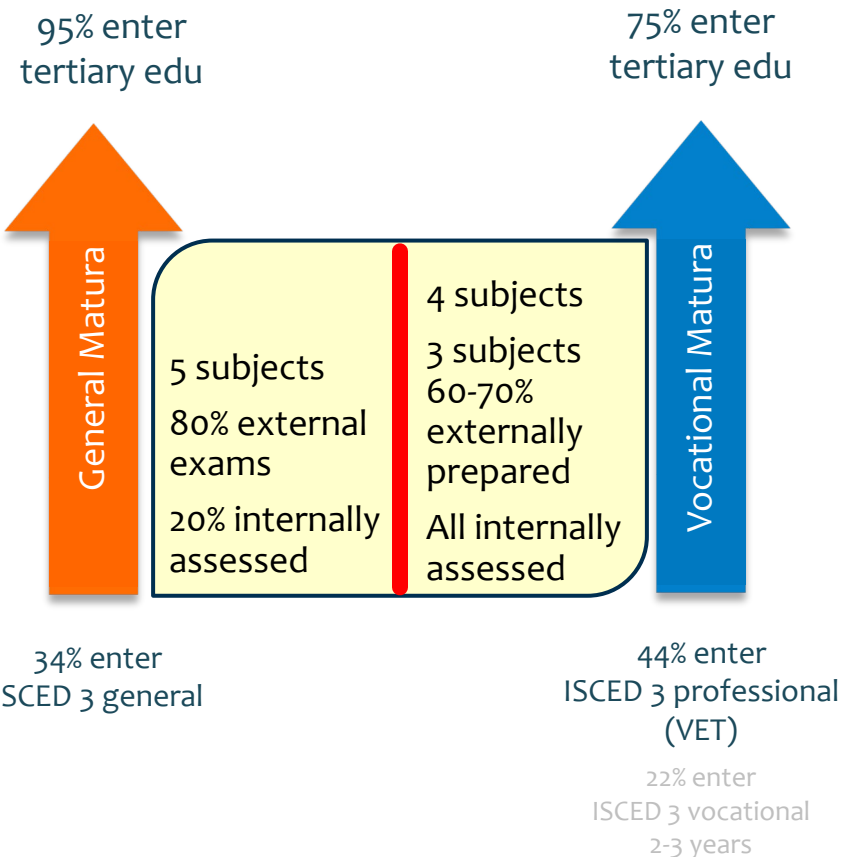
Completion rates at ISCED 5-7

How two certification paths from ISCED 3 to ISCED 5+...



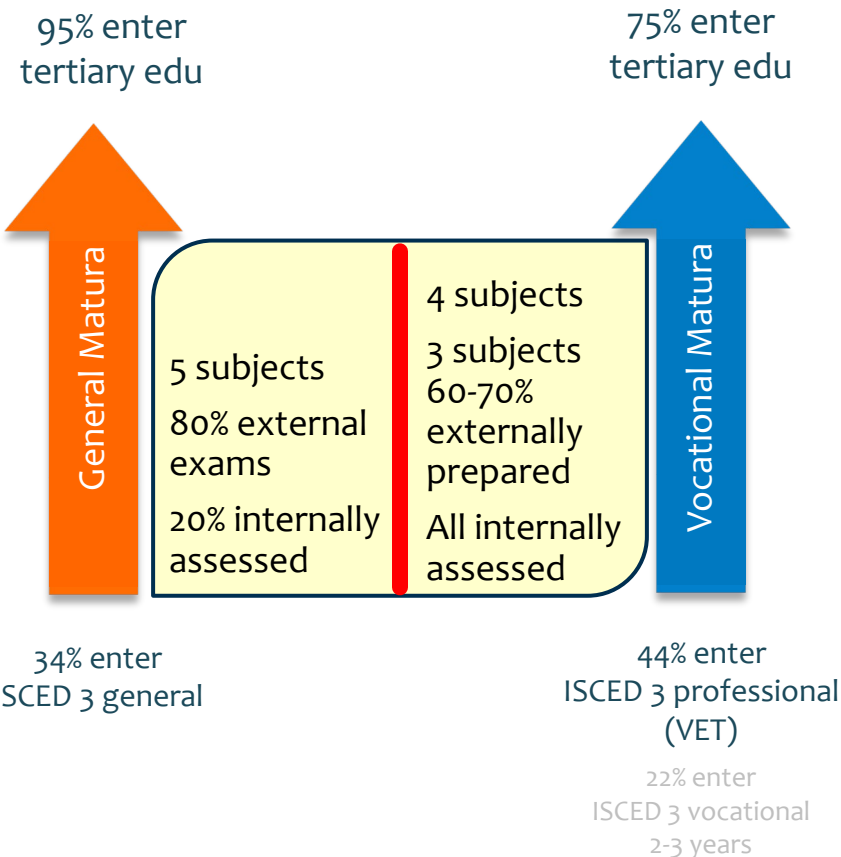
Completion rates at ISCED 5-7

How two certification paths from ISCED 3 to ISCED 5+... .. translate into success rates at ISCED 5+

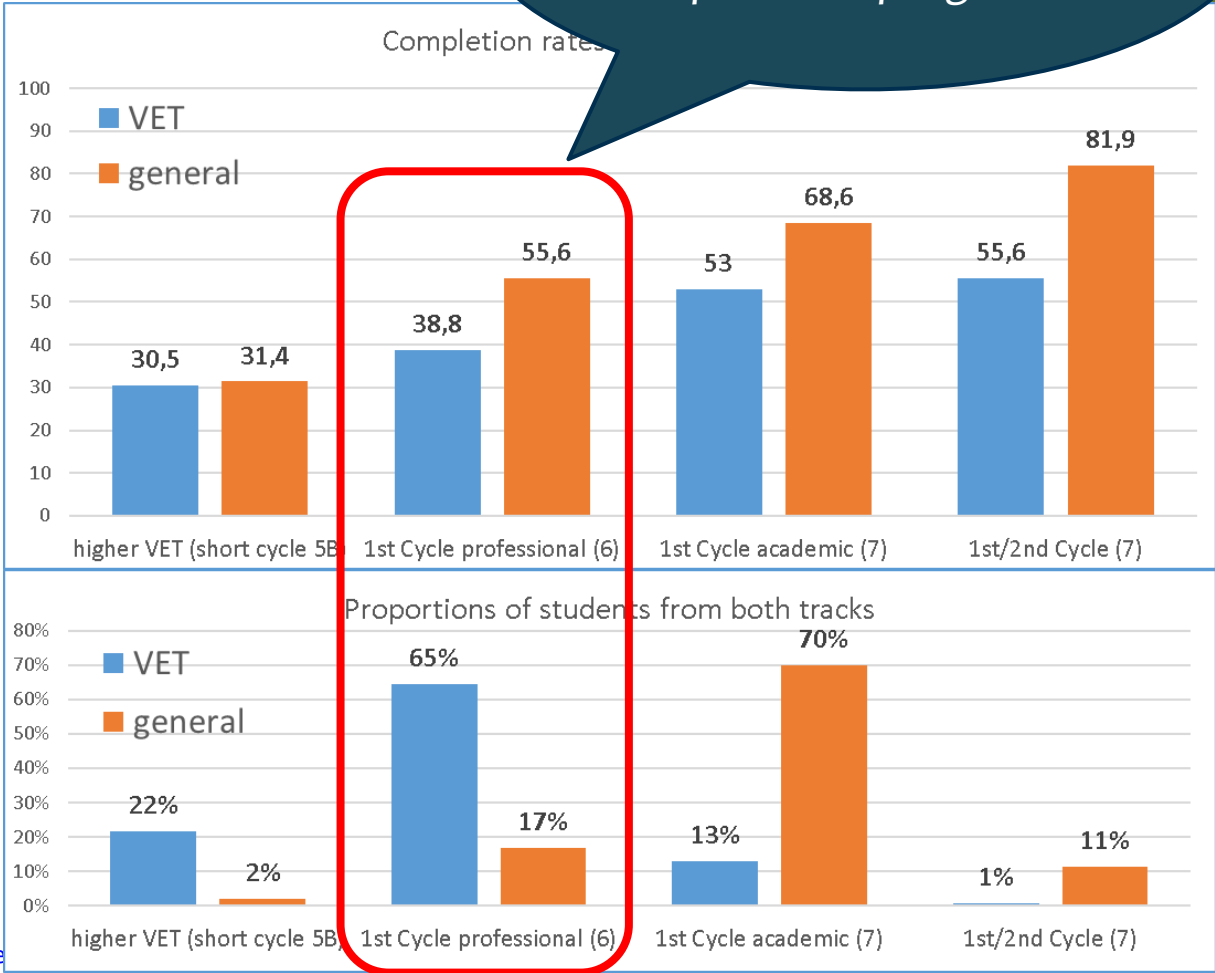


Completion rates at ISCED 5-7

How two certification paths from ISCED 3 to ISCED 5+... ... translate into success rates

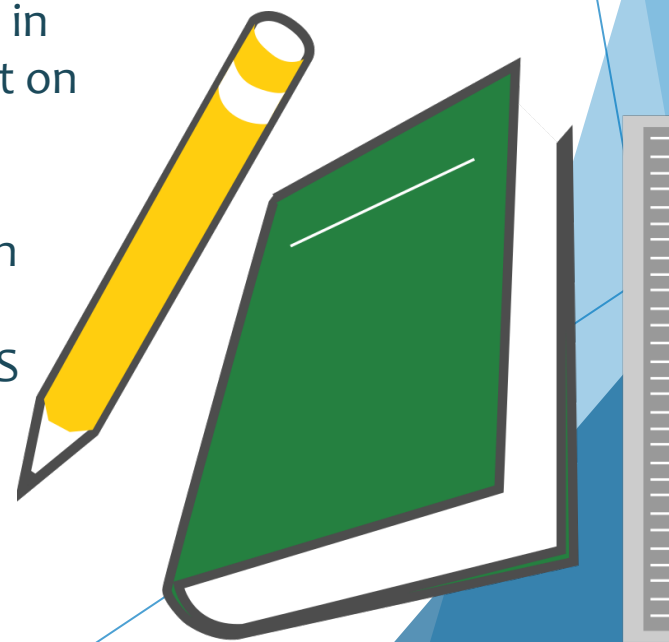


Weak completion rates:
Only 39% of VET entrants complete the programme



Thoughts ...

- ▶ Possibly ISCED 3 VET 4y professional programmes are not equipping students sufficiently to be successful at ISCED 6.
- ▶ Transition from ISCED 2 to ISCED 3 may influence transition from ISCED 3 to ISCED 5-7.
- ▶ Instead of an intended open-path system so that students can change their educational trajectories at all stages it seems that, in later stages, socio-economic background strengthens its impact on educational success.
- ▶ To further examine the impact of socio-economic background in transition from ISCED 2 to ISCED 3, we modelled probability of entering ISCED 3 general programme in Slovenia with PISA ESCS indicator as a predictor and (math) achievement as control.



Logistic regression

		All students				Boys				Girls			
		PISA 2022		PISA 2012		PISA 2022		PISA 2012		PISA 2022		PISA 2012	
Index of economic, social and cultural status	Exp(b)	2,91	2,18	2,87	2,28	3,03	2,23	3,12	2,56	3,12	2,40	2,85	2,30
Mathematics Achievement	Exp(b)	3,74		5,90		3,74		7,16		4,63		7,21	
Constant	Exp(b)	0,53	0,44	0,71	0,58	0,32	0,23	0,46	0,26	0,83	0,75	1,10	1,14
Explained variance	NKR	0,23	0,44	0,26	0,55	0,22	0,45	0,27	0,59	0,27	0,49	0,26	0,58

		All students				Boys				Girls			
		PISA 2018		PISA 2009		PISA 2018		PISA 2009		PISA 2018		PISA 2009	
Index of economic, social and cultural status	Exp(b)	2,98	2,52	2,89	2,37	3,10	2,57	3,27	2,56	3,21	2,68	2,91	2,25
Reading Achievement	Exp(b)	4,32		8,83		3,91		7,44		4,32		10,55	
Constant	Exp(b)	0,52	0,40	0,79	0,60	0,31	0,29	0,49	0,57	0,83	0,54	1,23	0,58
Explained variance	NKR	0,25	0,48	0,26	0,61	0,24	0,45	0,29	0,60	0,29	0,49	0,26	0,60

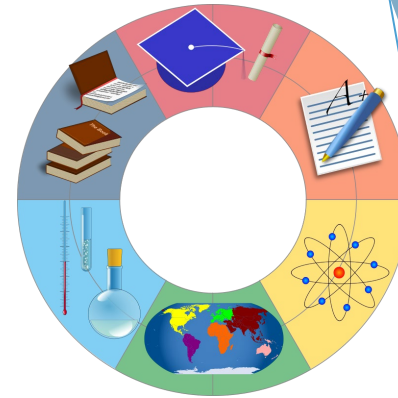
Logistic regression

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Constant	Exp(b)												
Explained variance	NKR												

Introducing achievement (and additional factor) as control in the model reduces the impact of socio-economic background on probability of entering the ISCED 3 general educational programme only to some (small) degree.

Concluding thoughts



While national and international data indicate relatively high (socio-economic) equity in ISCED1&2 education in Slovenia, student background may have unrecognized impact at the point of transition to ISCED 3 level influencing further educational trajectories. This may be because students and families from a disadvantaged background tend to choose „safer“ paths to a profession.

The question remains whether the new legislation will mitigate this impact of socio-economic background.