



Study of the impact of technology in primary schools

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Empirical evidence from the Learnind data

Werner B Korte, Tobias Hüsing, empirica



Teacher Survey: Methodology

- Country coverage: EU25, Norway, Iceland
- Samples
 - Head teacher survey: 10,456
 - Classroom teacher survey: 20,499
- All school levels according to ISCED
- Quotas for region type and location type
- CATI: Computer Aided Telephone Interview
- Interview duration: 10 minutes
- Duration of fieldwork: March – May 2006



Teacher Survey: Results and Findings

Learners

- Broad consensus about positive impact of ICT
- 87% say that with ICT pupils are more motivated and attentive



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Teacher Survey: Results and Findings



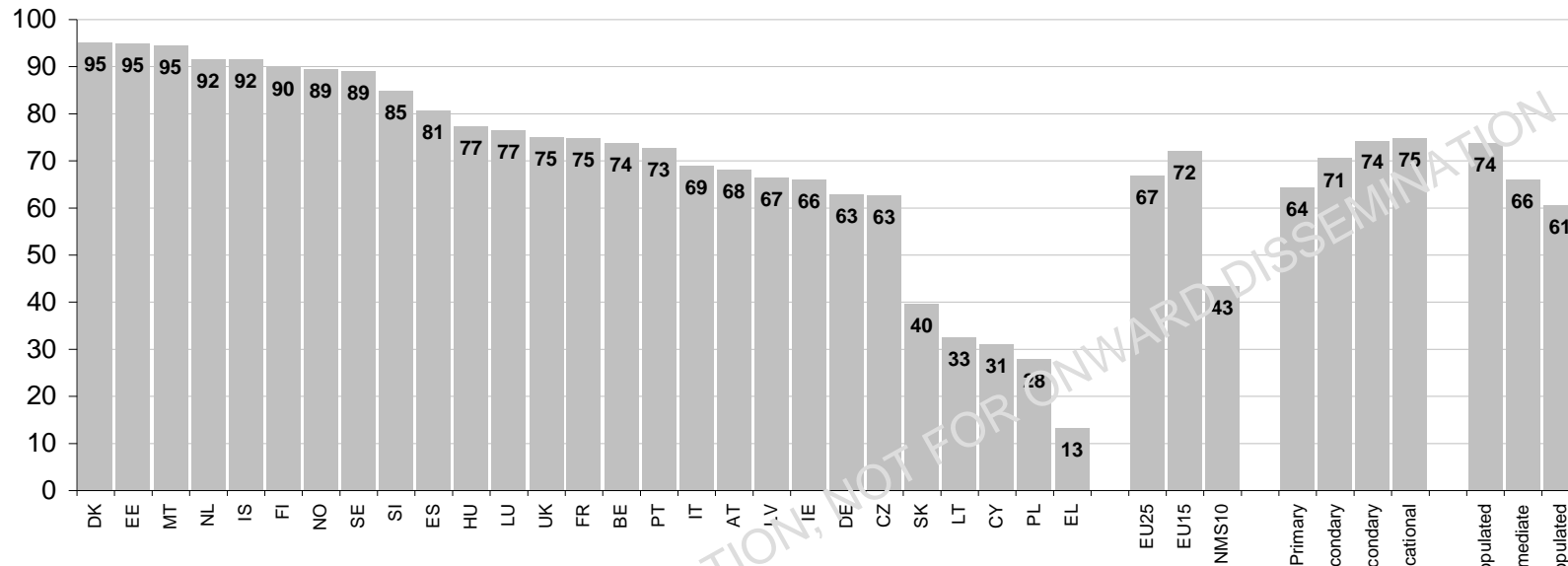
Schools

- Virtually all primary schools use computers
- Some kind of computer equipment is available in 99% of Europe's primary schools
- Internet access and broadband connectivity reveal gaps
- 65% of primary schools use broadband connections for internet access
- On average 8 internet computers are available per 100 pupils (from 23 in LUX to 5 in EL and SK)
- Computers in the classroom in some countries already, others still rely on computer labs
- ICT in foreign languages and in basic skills classes



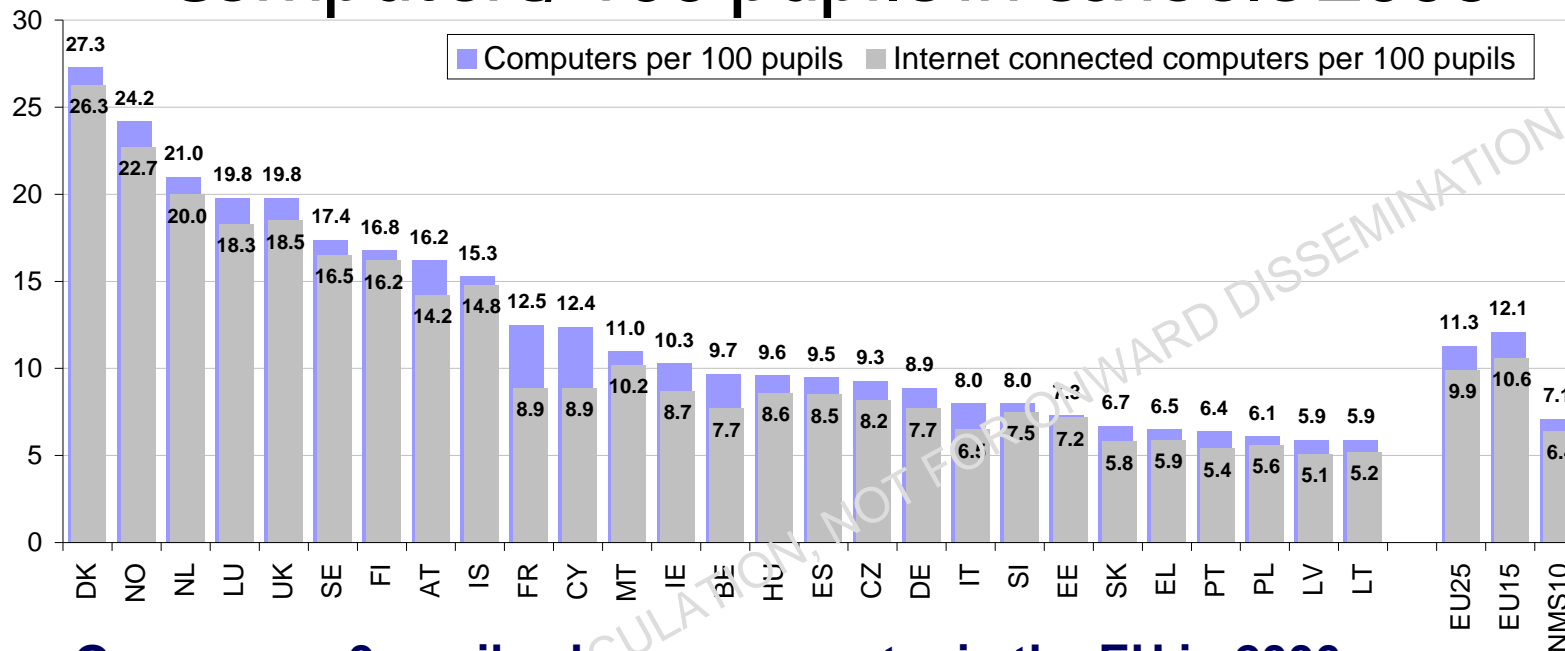
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Teacher Survey: Schools with broadband access 2006



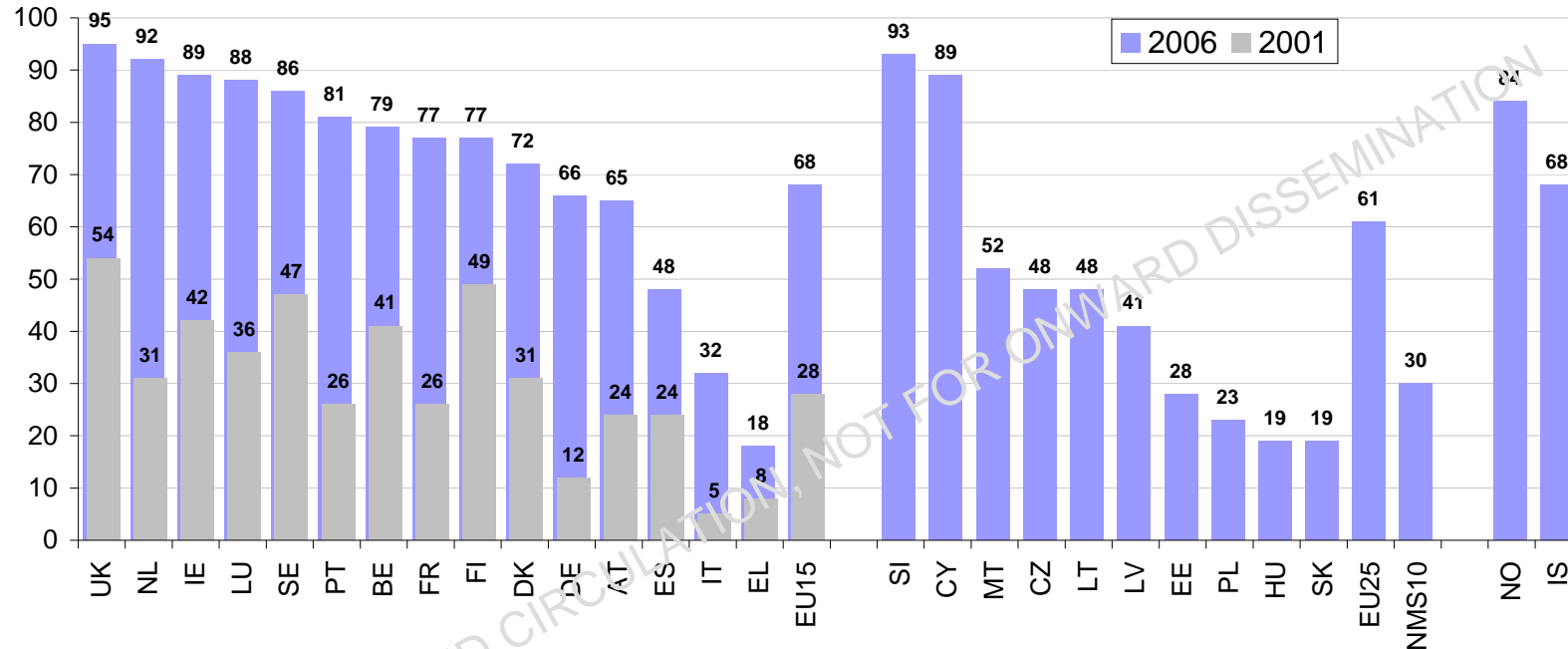
- **Computers and the internet have arrived in European schools everywhere >90%**
- **Broadband access has heavily increased with 67% of European schools with broadband connection**
- **The Nordic countries are at the top (~90%)**

Teacher Survey: Computers/ 100 pupils in schools 2006



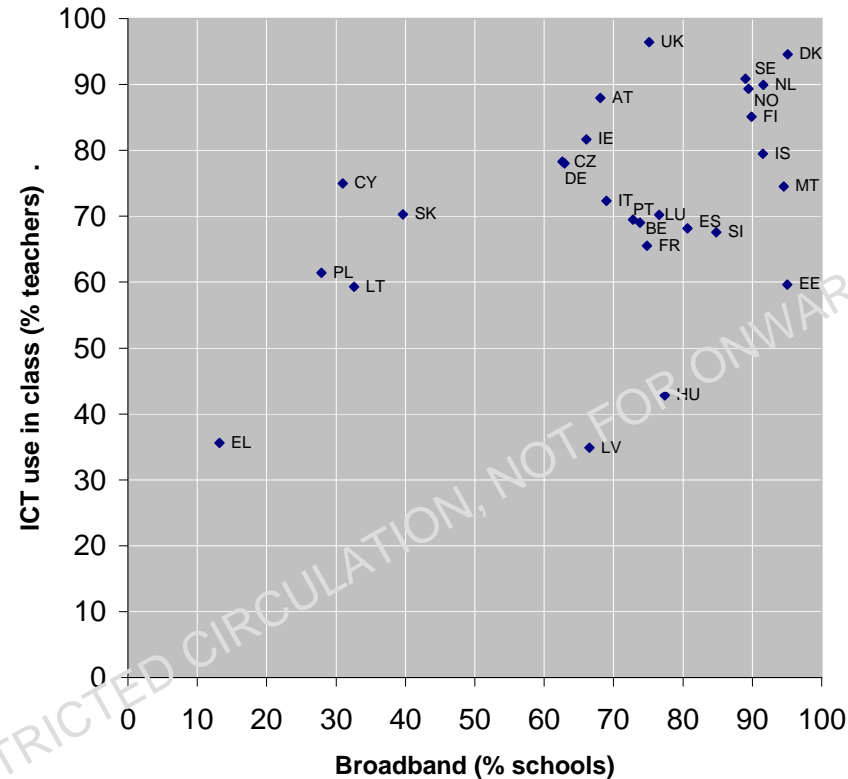
- On average 9 pupils share a computer in the EU in 2006
- However in the new Member States: 14 as opposed to 8 in EU15
- Strong improvement in EU15 over the past 5 years
- DK, NL, UK, LU: 4 – 5 pupils/computers compared to 17 in LV, LT, PL, PT and EL

Teacher Survey: Schools with PCs in classroom 2001 - 2006



- Move away from dedicated computer labs to use in class
- Shift in use in classroom from 28% in 2001 to 68% in 2006
- However, huge differences across countries

Teacher Survey: ICT teachers vs. broadband access 2006



- **Correlation between broadband access and ICT use in class**
- **The same applies to own school website, LAN use, intranet, ICT maintenance contract etc.**

Teacher Survey: Results and Findings



Teachers

- 75% of primary teachers use computers in class
- Broad consensus about positive impact of ICT
- Advantages of ICT use
 - Pupils are more motivated and attentive
 - Significant learning benefits
 - Best use for collaborative work
 - Followed by “exercises and practice”
 - Only 1% are against the use of ICT
- Little to no correlation between impact optimism and level of school equipment, sophistication of use, or even teacher skills

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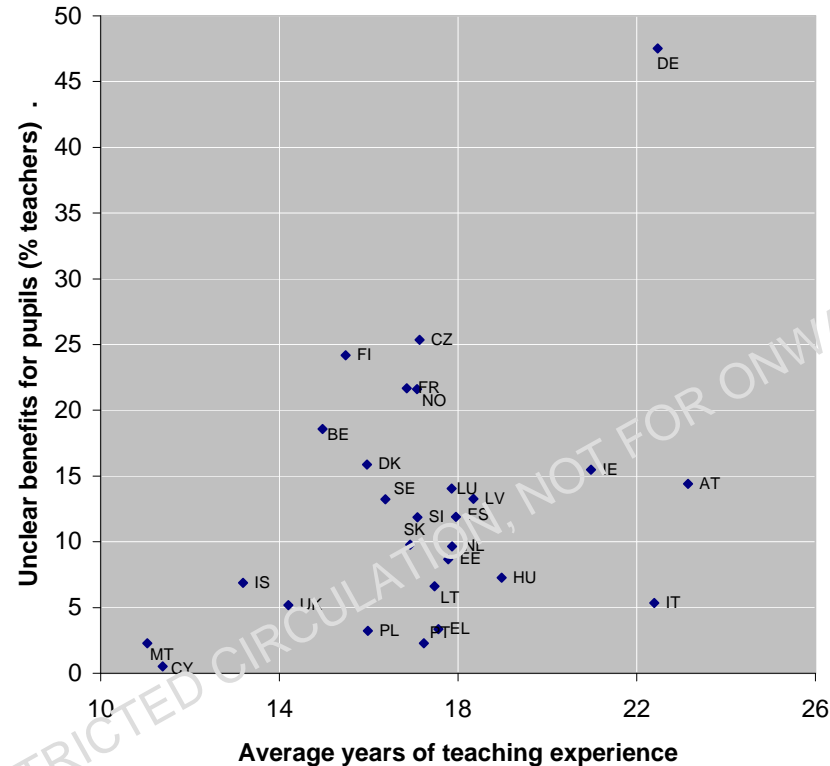


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Teacher Survey:

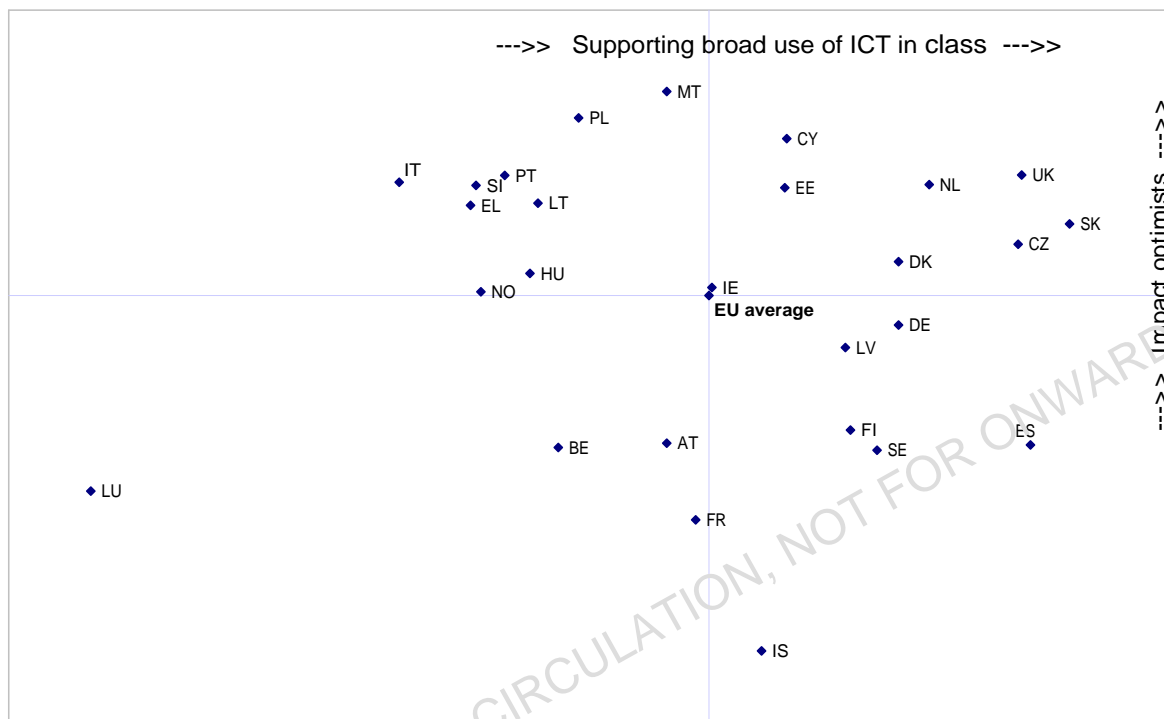
Lack of motivation for ICT use in class 2006



here = teachers not using computers

- Correlation between skepticism re ICT benefits and the motivation to ICT use in class and
- The older the teachers, the more likely they will lack motivation to ICT use in class

Teacher Survey: Results and Findings

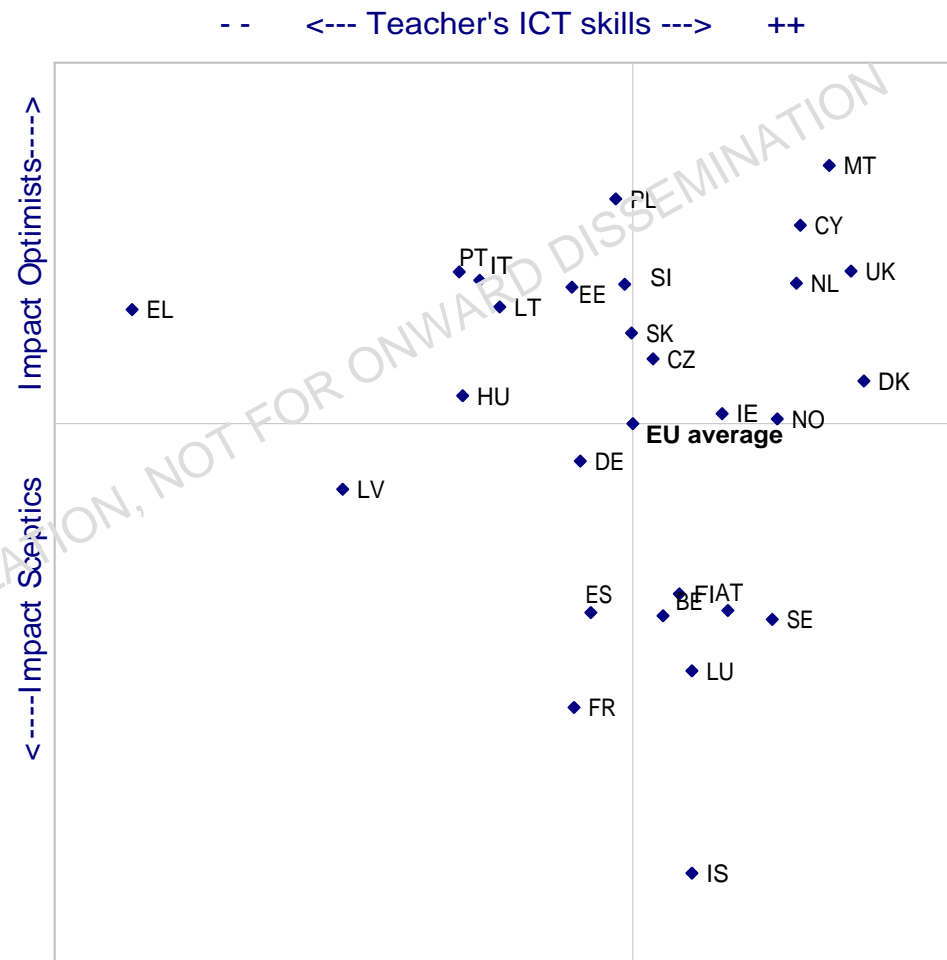


- Factor analysis reveals 2 key factors of impact assessment by teachers
 - “high support of *broad* ICT use in class” and
 - “optimistic impact expectations” -> country clusters

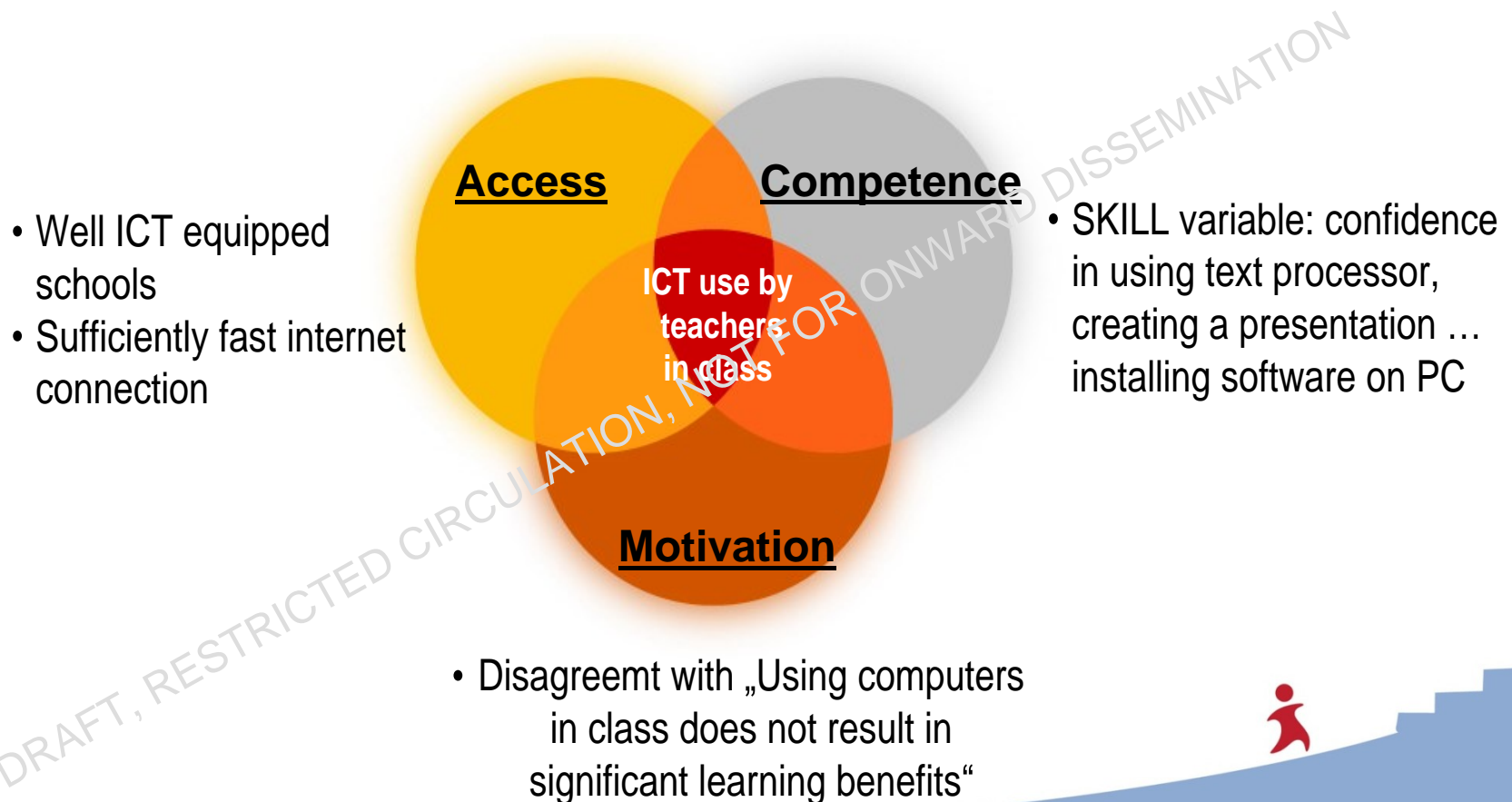


Teacher Survey: Results and Findings































Only some relationship between teacher's ICT skills and optimistic impact expectations -> country clusters



What are the factors behind the decision (not) to take up ICT?



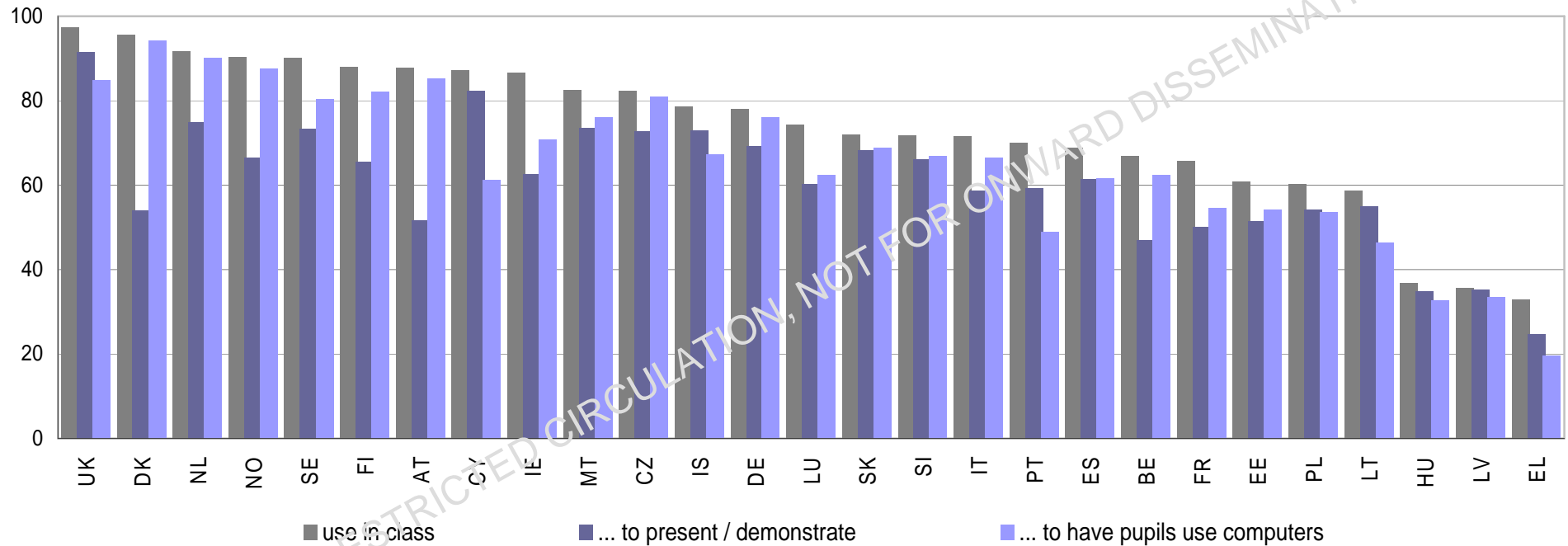
Readiness Index: Propensity to take up computers and internet in class among all teachers in Europe 2006

	UK	250		BE	207
	DK	241		CZ	206
	NL	237		EE	204
	NO	235		PT	204
	PL	234		EU15	203
	SI	232		SK	201
	MT	220		DE	196
	FI	219		EL	193
	NMS10	215		HU	192
	CY	214		LT	188
	IT	214		FR	185
	LU	211		ES	178
	AT	211		IS	172
	IE	211		LV	157
	SE	210			
	EU25	209			
	EU25+2	208			

- Expected pattern
- with some surprises
- Access is an issue in some countries
- Teacher training only in very few
- Motivation is an issue even in some frontrunner countries.
- Role of ICT in class in the future?



Percentage of teachers using computers in class

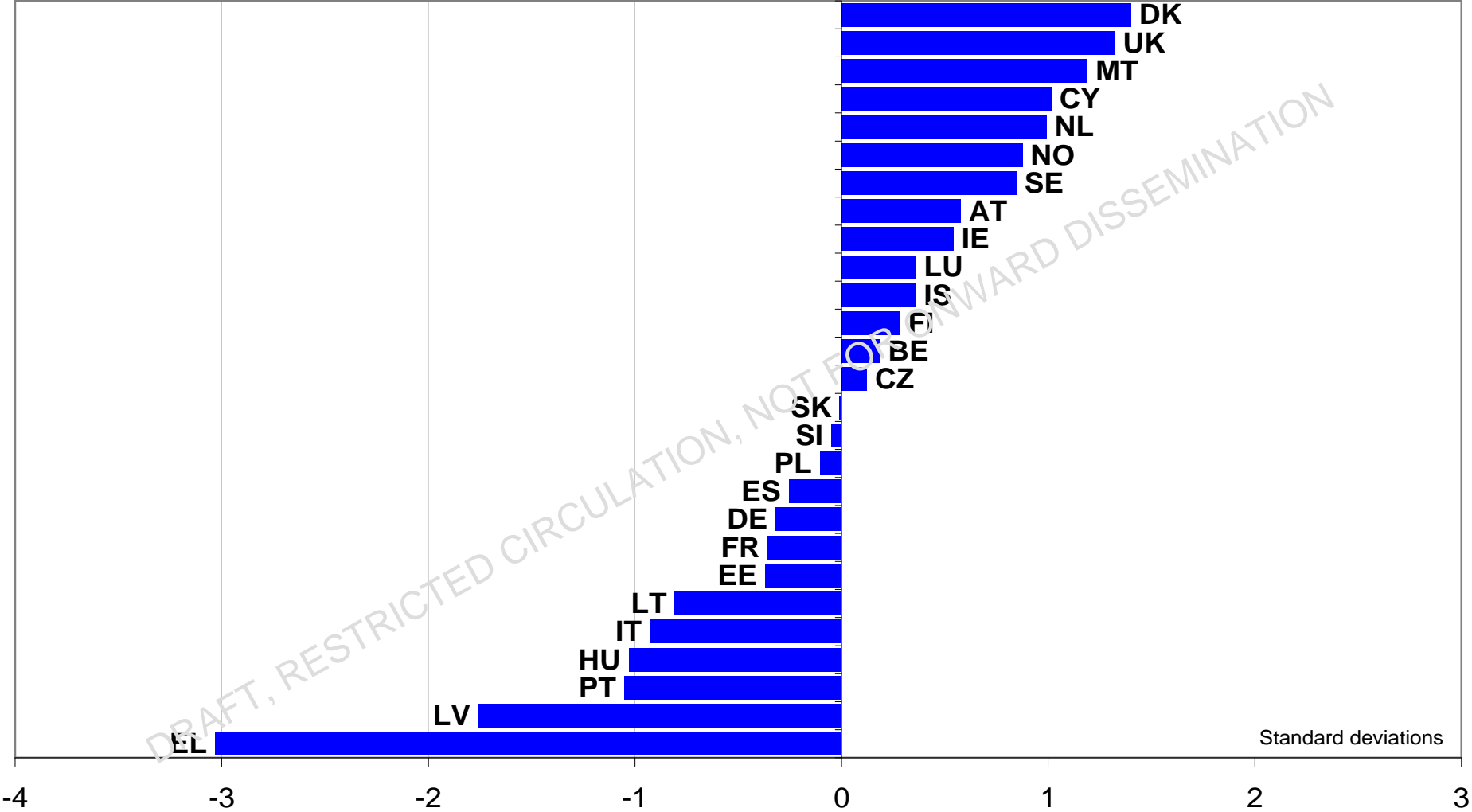


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ICT user literacy index by country



Teacher Survey: Results and Findings

- Country clusters:

- Frontrunners:

- Nordic countries and Islands **(blue)**

- Enthusiasts:

- Eastern and Southern European countries **(yellow)**

- Inhibited:

- German speaking countries **(green)**

- Mixed:

- continental cluster **(orange)**

- Outliers:

- Greece and Latvia **(red)**



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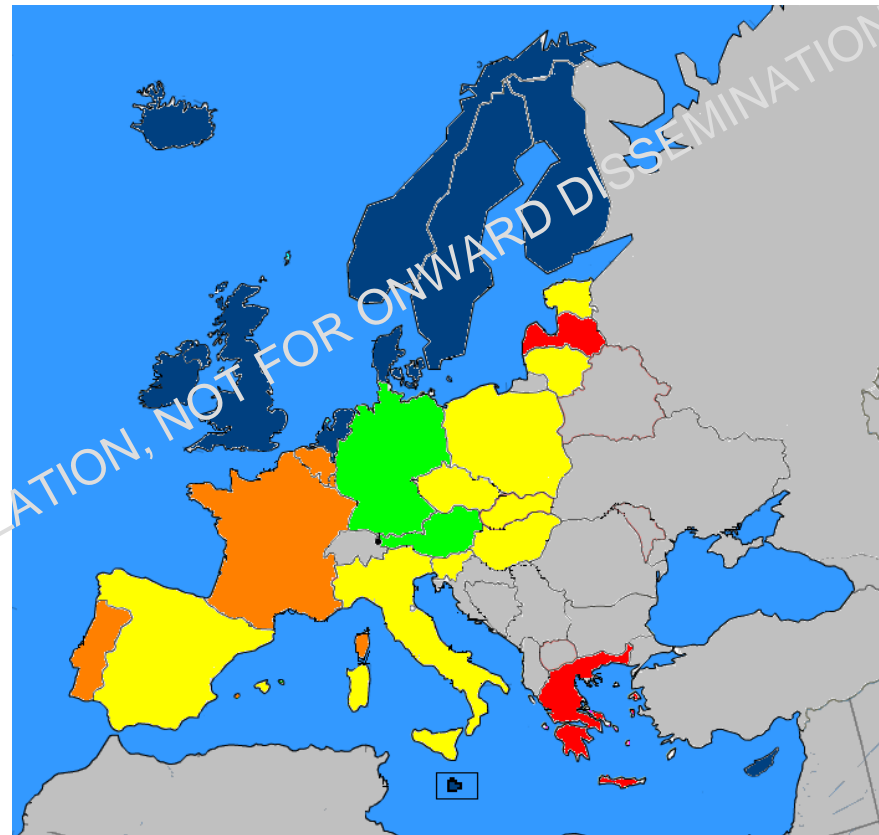


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Teacher Survey: Results and Findings

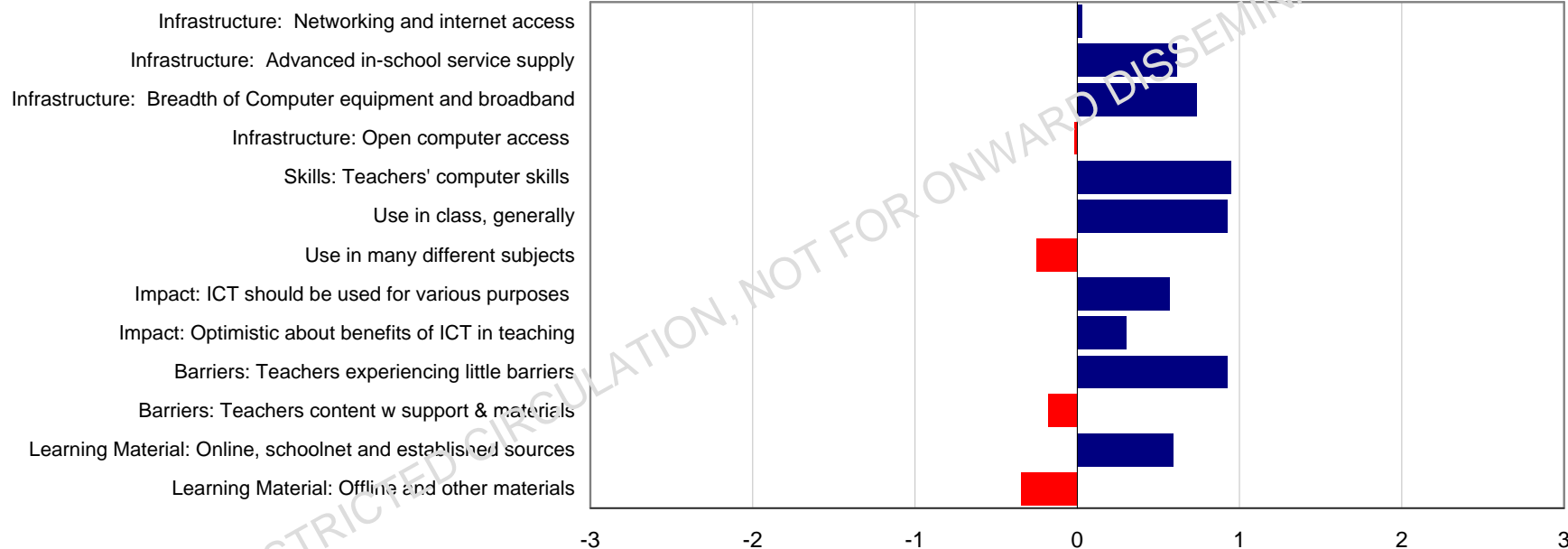
- Frontrunners
- Enthusiasts
- Inhibited
- Mixed
- Outliers



Teacher Survey: Results and Findings

Nordic + Islands Cluster

ØEU = 0
scale: std devs



- Frontrunners

– SE, NO, IS, FI, DK, NL, UK, CY, MT



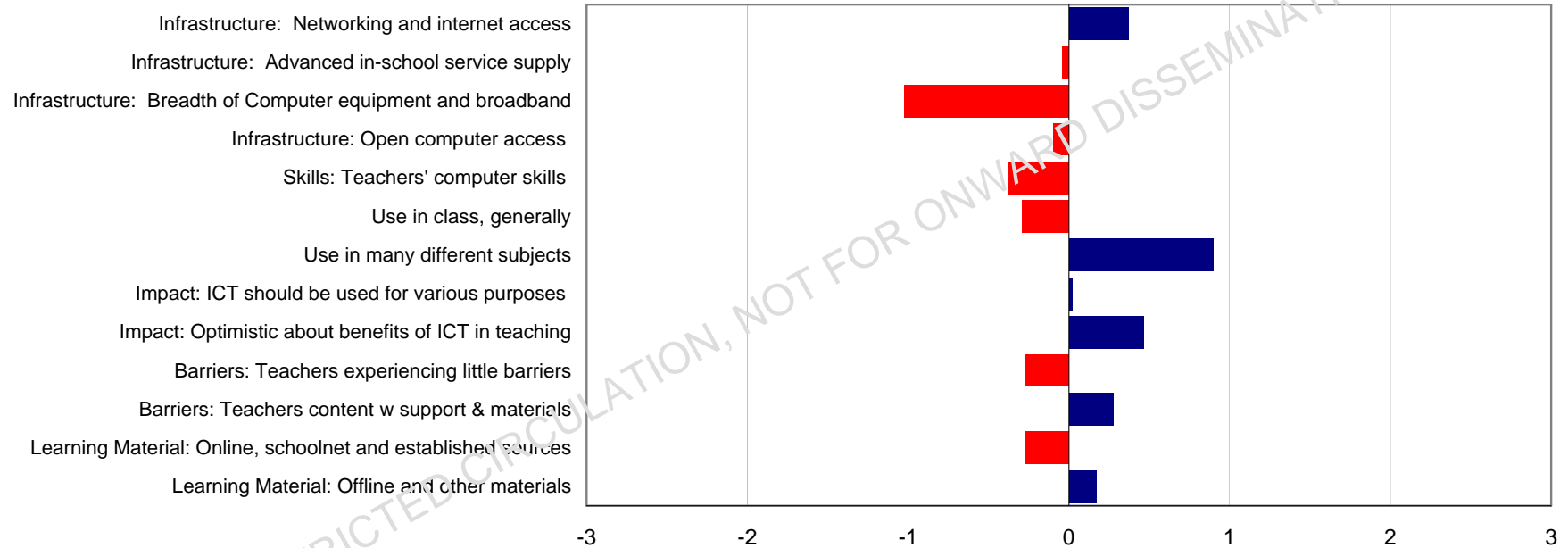
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Teacher Survey: Results and Findings

Eastern + Southern Cluster

ØEU = 0

scale: std devs



- **Enthusiasts**

– CZ, SK, PL, HU, SI, LT, EE, ES, IT



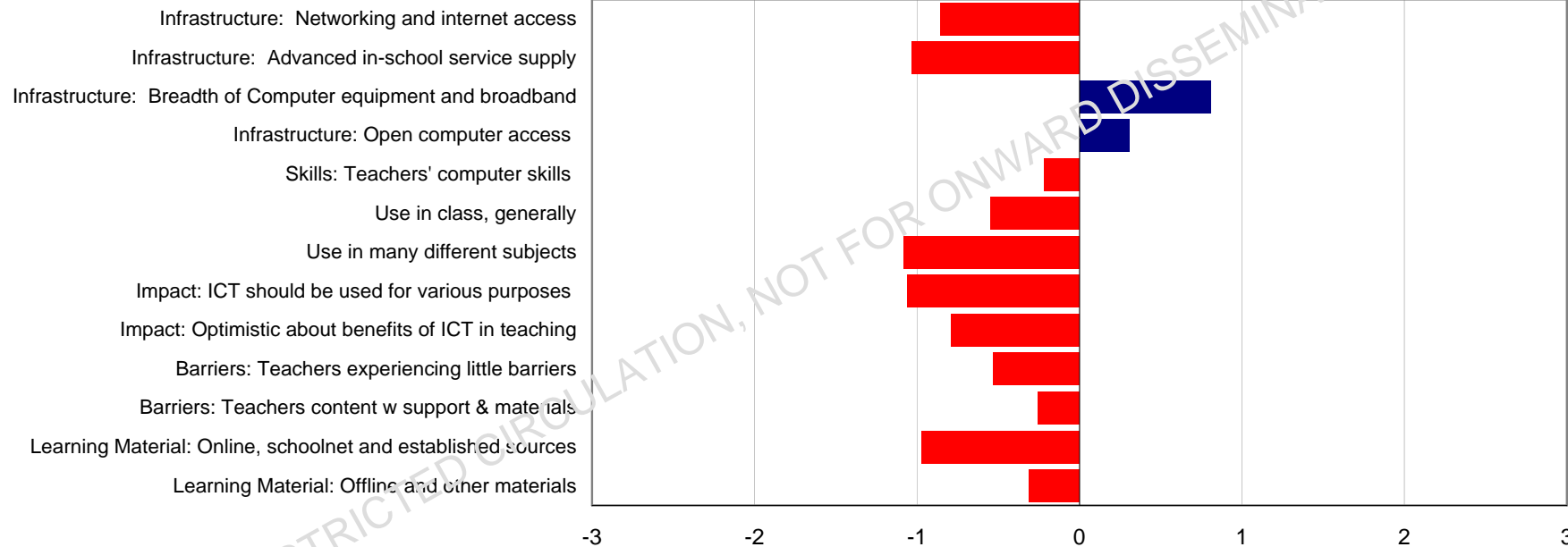
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Teacher Survey: Results and Findings

Western Continental Cluster

ØEU = 0

scale: std devs



- Inhibited
 - FR, BE, LU, PT



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Teacher Survey: Results and Findings

German speaking Cluster

ØEU = 0
scale: std devs



- Mixed
– AT, DE



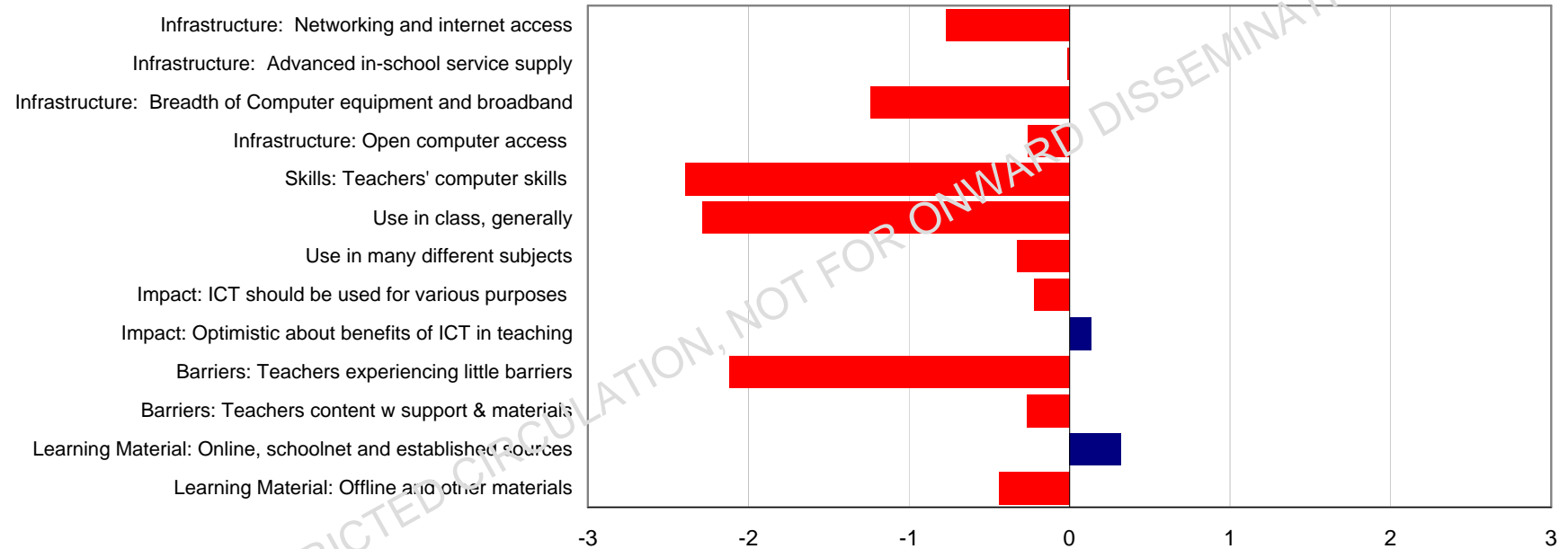
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Teacher Survey: Results and Findings

Greece + Latvia Cluster

ØEU = 0

scale: std devs



- Outliers
- EL, LV



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Summary so far (i)

- Huge agreement about positive impact of ICT among teachers, variance between countries but on a high level
- All primary schools use computers in class, yet considerable difference in equipment and deployment
- However, tremendous progress since 2001 everywhere
- Broadband access: digital divides in Europe
- Correlation between school equipment and use by teachers in class, of course: necessary but not sufficient condition
- Teachers deploy ICT both for “exercise and practice” and collaborative work



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Summary so far (ii)

- Impact optimism among teachers is independent of level of school equipment, sophistication of use, even teacher skills
- Very few die-hard sceptics, lack of motivation is not so much the issue, rather access and competences
- Although no division between sceptics and optimists, some countries are enthusiastic and others more sober in optimism
- Only some relationship between teacher's ICT skills and optimistic impact expectations
- Some way to go with regard to ICT skills in some countries
- Geographic clusters reveal several similarities between countries, not a clear North-South gradient, although Nordics are clearly frontrunners



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