

Reverse Engineering of Competence Profiles for Public Service Education

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Introduction

- Ensuring appropriate education for coming professionals as matter of utmost significance
- Most employees facing digital transformation are civil servants with bachelor's degree in some sort of public management

Research questions:

1. How many hours are digital skills taught in each of the degree programs?
2. Which of the taught digital skills are part of the basic skills according to the ICDL Germany and which go beyond?

Quantitative analysis of ICT topics

- On average, less than one working week of lessons to teach ICT competences
- Some do not even teach one hour

Heatmapping - Hours of time heatmapped per row

	BW	B	BER	BB	BRE	FR	H	HE	MWP	LS	NRW	RLP	SL	S	SA	SH	T	Ø
ICT (hours of time)	48,75	58,5	40,5	45	45	21	96	0	18	0	9	24,75	60	78	30	16,5	45	37
Legal competences (hours of time)	540	517,5	243	540	472,5	687	360	538	861	735,8	745,5	540,4	791,3	722	600	363	967,5	601

Module categories	Modules and contents		Mapping																
	Modules		BW	B	BER	BB	BRE	FR	H	HE	MVP	LS	NRW	RP	SL	S	SA	SH	T
ICDL Workforce Modules	1. Computer & Online Essentials (Workforce Base)		4	1					4						1	4			5
	2. Textverarbeitung (Workforce Base)			2					1		1			2	2				
	3. Tabellenkalkulation (Workforce Base)			2					1		2					1			1
	4. Präsentationen (Workforce Base)			1							1			1	1				
	5. Digitale Zusammenarbeit Grundlagen			1					3							1			
	6. IT-Sicherheit			1	5				2		1								1
	7. Datenschutz			1			1					1			2				
ICDL Digital Professional Modules	1. Digitale Zusammenarbeit							4											
	2. Digitaler Unterricht																		
	3. Digitales Marketing																		
	4. Computing																		
ICDL Advanced Professional Modules	1. Advanced Textverarbeitung								1		1				1	2			
	2. Advanced Tabellenkalkulation								1		1				1				
	3. Advanced Datenbanken								7									2	
	4. Advanced Präsentationen								1		1				1				
ICDL Professional Modules	1. Datenbanken								1						1				
	2. Bildbearbeitung																		
	3. Projektplanung								1										
	4. E-Health																		

Qualitative analysis of ICT topics based on ICDL Germany

- ICDL Germany = International Certification of Digital Literacy
- Defines certain modules and their contents, which are considered basic ICT skills
- About half of the topics are basic skills according to ICDL (79 of 162 topics)

Clustering ICT topics beyond ICDL basics

- Approximately half of the topics (83 of 162) exceed basic skills according to the ICDL
- Clustered into eight different dimensions

Conclusion

- Only few ICT topics are taught
- About half of these topics are basic ICDL skills which should already be known from secondary school

