

DETECTING, DEFINING AND DEVELOPING SOFT SKILLS IN BUSINESS AND ICT CONTEXTS

Kai Johannes Schleutker

Dissertation submitted for the degree of Doctor of Philosophy at Universitat
Politécnica de València

Doctorate Program: Industrias de la Comunicación y Culturales

Supervisors: Dr. Nuria Lloret Romero y Dr. José Luis Poza-Luján (UPV), Dr. Vesa
Taatila (Turku UAS)



UNIVERSITAT
POLITÈCNICA
DE VALÈNCIA

1	INTRODUCTION	1
1.1	MOTIVATION FOR THIS THESIS	1
1.2	HYPOTHESIS	2
1.3	AIMS AND TARGETS	4
1.4	METHODOLOGY	4
1.5	DOCUMENT DESCRIPTION	8
2	STATE OF THE ART	10
2.1	THE CHARACTER OF SOFT SKILLS	10
2.1.1	<i>About competences and Skills</i>	10
2.1.2	<i>Definition of Soft Skills</i>	12
2.1.3	<i>Soft Skills in Working Contexts</i>	14
2.1.4	<i>Skills gap – lack of Soft Skills</i>	16
2.1.5	<i>Skills gap and HEIs</i>	17
2.1.6	<i>Discussion</i>	21
2.2	SOFT SKILLS MAPS ANALYSIS	22
2.2.1	<i>About Skills Maps</i>	22
2.2.2	<i>Existing skills maps and analysis</i>	23
2.2.3	<i>Exploratory research on titles</i>	24
2.2.4	<i>Map of graduates – MOSSA</i>	29
2.2.5	<i>University map – Universitat Politècnica de València</i>	30
2.2.6	<i>The proposed Soft Skills Framework</i>	35
2.3	SOFT SKILLS DETECTION METHODS	41
2.3.1	<i>Methods to detect skills</i>	42
2.4	CONDITIONS FOR MATCHING SOFT SKILLS	46
2.4.1	<i>The acquisition process of Soft Skills</i>	47
2.4.2	<i>The Dimensions of the Process</i>	50
2.5	SUMMARY	54
3	PRACTICAL IMPLICATIONS	57
3.1	COMMUNICATION BASED TAXONOMY	57
3.1.1	<i>Guidelines for Skills Clusters</i>	58
3.1.2	<i>Communication based Taxonomy of Soft Skills</i>	60
3.1.3	<i>Applications of the Taxonomy</i>	69

3.2	THE PROPOSED METHOD: SOFT SKILLS STATUS INDICATOR (3Si)	70
3.2.1	<i>The Soft Skills Match – the process of defining and detecting Core Soft Skills</i>	71
3.2.2	<i>The 3Si Survey Questionnaire</i>	75
3.2.3	<i>The 3Si Method</i>	81
4	EXPERIMENTS AND RESULTS	89
4.1	INTERVIEW WITH EXPERTS	90
4.2	LAUNCHING THE SURVEY 3Si TO BUSINESS PROFESSIONALS	92
4.2.1	<i>Background data</i>	93
4.2.2	<i>The Results of the 3Si Survey</i>	95
4.3	STATISTICAL ANALYSIS OF THE SURVEY RESULTS	104
4.3.1	<i>Implementation of the 3Si Classification</i>	104
4.3.2	<i>The role of the threshold</i>	110
4.4	RESULTS ANALYSIS	112
4.4.1	<i>Regarding the 3Si survey</i>	112
4.4.2	<i>Regarding the Outcomes from Classification 3Si</i>	115
5	DISCUSSION	119
5.1	ABOUT THE OUTSET OF THE RESEARCH PROJECT	119
5.1.1	<i>About the survey</i>	120
5.1.2	<i>About the Method 3Si and the Classification</i>	123
5.1.3	<i>Limitations of the research and the Method</i>	124
5.2	CONTRIBUTIONS OF THE RESEARCH/RESULTS	126
5.2.1	<i>To Higher Education in business and ICT</i>	127
5.2.2	<i>To Business and ICT Organizations</i>	128
6	SCIENTIFIC PUBLICATIONS AND DISSEMINATION OF THE RESULTS	131
6.1	SCIENTIFIC PUBLICATIONS	131
6.1.1	<i>Journal articles</i>	132
6.1.2	<i>Conference presentations</i>	139
6.2	DISSEMINATION OF THE RESULTS	147
6.2.1	<i>Project Coski21 – creation of project website</i>	147
6.2.2	<i>Workshops with Teachers, Managers and Researchers</i>	152
6.2.3	<i>Workshops with researchers</i>	154
7	CONCLUSIONS	161
7.1	TARGETS REACHED	162
7.2	FUTURE WORK	163
1	BIBLIOGRAPHY	1
1	ATTACHMENT	1

1.	ATTACHMENT: THE 3Si QUESTIONNAIRE	1
2.	ATTACHMENT: TABLES AND GRAPHS	10
3.	COSKI21 RESULTS (THE WHOLE SHEET CAN BE FOUND HERE)	11
	<i>Figure 1 Bridging the ‘skills gap’ is a common goal of graduates, employers and educators</i>	2
	<i>Figure 2 The graphical abstract of the research</i>	5
	<i>Figure 3 Definition of the core Soft Skills is a step towards developing them</i>	8
	<i>Figure 4 The thesis aims to combine the aspects of students, teachers and employers</i>	19
	<i>Figure 5 The spread sheed capture displays the used instrument.</i>	26
	<i>Figure 6 The roles and interest of the stakeholders in the acquisition of skills.</i>	49
	<i>Figure 7 Communication based Taxonomy of Soft Skills.</i>	61
	<i>Figure 8 The Soft Skills match – the process of defining and detecting Core Soft Skills.</i>	72
	<i>Figure 9 The structure of the 3Si questionnaire.</i>	76
	<i>Figure 10 The main block of the Questionnaire with three statistical dimensions.</i>	78
	<i>Figure 11 Each skill was supplied with a short description.</i>	79
	<i>Figure 12 Respondent’s opinion of the utility of skills maps in general.</i>	80
	<i>Figure 13 The perceived utility of skills maps.</i>	80
	<i>Figure 14 The evaluated significance of Soft Skills in work positions, by country.</i>	96
	<i>Figure 15 Assessed trust in learning of Soft Skills, by country.</i>	98
	<i>Figure 16 Assessed Level of graduates’ Soft Skills, by country.</i>	100
	<i>Figure 17 Three-dimensional evaluations of the skills.</i>	101
	<i>Figure 18 The impact of the threshold on the distribution of skills classes.</i>	111
	<i>Figure 19 Summary of scientific publications and academic conferences participated during the thesis.</i>	132
	<i>Figure 20 The outlook of the website www.skill-4u.eu.</i>	147
	<i>Figure 21 The visitor can choose different initiations.</i>	148
	<i>Figure 22 Free material can be loaded from the website.</i>	149
	<i>Figure 23 Promotion of Soft Skills begins from self-awareness.</i>	150
	<i>Figure 24 The content strategy for promotion in social media.</i>	151
	<i>Figure 25 Statistics from Facebook posts and data from March 2019.</i>	152
	<i>Figure 26 Workshop with Business Teachers in Turku.</i>	153
	<i>Figure 27 Workshop Soft Skills for managers in Turku.</i>	154
	<i>Figure 28 Soft Skills are included in studies of business accounting.</i>	155
	<i>Figure 29 Numerous Soft Skills research is conducted at UniTre.</i>	156
	<i>Figure 30 The Turku conference brought together business and higher education.</i>	157

<i>Figure 31 In Vienna, self-promotion activities for Soft Skills were presented.</i>	159
<i>Table 1 Hard and Soft Skills, as considered in different professional fields.</i>	22
<i>Table 2 The MOSSA Map of Soft Skills.</i>	29
<i>Table 3 UPV competence clusters and Soft Skills related with them.</i>	34
<i>Table 4 The Soft Skills framework proposed.</i>	38
<i>Table 5 Comparison of research methods.</i>	44
<i>Table 6 Research methods to be applied in the current research.</i>	46
<i>Table 7 The Soft Skills matrix used in the questionnaire, result of the Framework presented in chapter 2.4.</i>	77
<i>Table 8 Description of the Soft Skills classes with High significance.</i>	84
<i>Table 9 Soft Skills with less import in the HEI - Organization context.</i>	87
<i>Table 10 The 21 Soft Skills defined in classes (H/L) according to survey results.</i>	106
<i>Table 11 The 21 Soft Skills presented in the 3Si Classification.</i>	107
<i>Table 12 Distribution of Soft Skills in classes when applying two alternative thresholds.</i>	112