

VR4 Skills

GAP ANALYSIS

Common Skills Matrix

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Project Title: VR4SKILLS - Comprehensive training framework for leaders of internationalization enhanced by Virtual Reality (VR) in the post-pandemic era.



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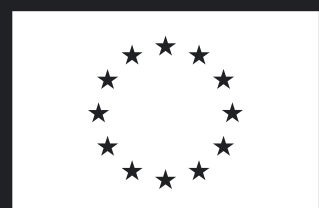


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Erasmus+ KA220 – HED - COOPERATION PARTNERSHIP IN HIGHER EDUCATION

VR4SKILLS - Comprehensive training framework for leaders
of internationalization enhanced by Virtual Reality (VR) in post-pandemic era

Poland (Project manager), Belgium, Slovenia, Netherlands, Türkiye

WP 2.1 Development of Self Evaluation Questionnaire (SEQ)

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- The Questionnaire addresses four main areas of skills: Digital skills, Management/ Leadership skills, Cross-cultural Communication/ Collaboration skills, and Mental/Cognitive Skills.
 - Respondents: Administrative and support staff (20), Academic Leaders (10), and Human Resources (3) at each partner institution
 - The questionnaire was prepared by IAU researchers based on available literature and there was a useful feedback process from partner institutions.
 - The questionnaire was translated into national languages.
 - The link was sent to coordinators at each partner and results were collected by IAU.



Questions: The Intercultural Effectiveness

1. I find it is easy to get along with people from different cultures.
2. I find it is easy to identify with my culturally different counterparts during our interactions.
3. I always know how to initiate a conversation when interacting with people from different cultures.
4. I always show respect for my culturally different counterparts during our interactions.
5. I always show respect for the opinions of my culturally different counterparts during our interactions.
6. I use appropriate eye contact when interacting with people from different cultures.
7. I am able to express my ideas clearly when interacting with people from different cultures.
8. I am able to answer questions effectively when interacting with people from different cultures.
9. I am not always the person I appear to be when interacting with people from different cultures.
10. I am afraid to express myself when interacting with people from different cultures.
11. I find the best way to act is to be myself when interacting with people from different cultures.
12. I find I have a lot in common with my culturally different counterparts during our interaction.



Questions: Management & Leadership Skills

13. I find it is difficult to feel my culturally different counterparts are similar to me.

14. I feel a sense of distance with my culturally different counterparts during our interaction.

15. I accept and respect that customs and beliefs about daily life are applied differently from culture to culture.

16. I enjoy coaching people on new tasks and procedures.

17. I encourage people to participate when it comes to decision-making and I try to implement their ideas and suggestions.

18. I encourage people to be creative about their job.

19. When correcting mistakes, I do not worry about jeopardizing relationships.

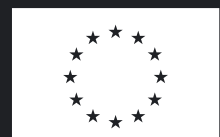
20. I manage my time very efficiently.

21. Breaking large projects into small manageable tasks is second nature to me.

22. I find it easy to carry out several complicated tasks at the same time.

23. I enjoy analyzing problems.

24. I honor other people's boundaries.



Questions: Collaboration Skills And Mental / Cognitive Skills

25. I enjoy reading articles, books, and regulations about my profession; and then implementing the new procedures I have learned.

26. I give positive feedback when colleagues/ staff do good work.

27. The more challenging a task is, the more I enjoy it.

28. I could be experiencing some emotion and not be conscious of it until sometime later.

29. I break or spill things because of carelessness, not paying attention, or thinking of something else.

30. I find it difficult to stay focused on what's happening in the present.

31. I find myself listening to someone with one ear, doing something else at the same time.

32. I find myself preoccupied with the future or the past.

33. I tend to walk quickly to get where I'm going without paying attention to what I experience along the way.

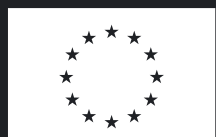
34. I tend not to notice feelings of physical tension or discomfort until they really grab my attention.

35. I forget a person's name almost as soon as I've been told it for the first time.

36. I rush through activities without being attentive to them.

37. I get so focused on the goal I want to achieve that I lose touch with what I am doing right now to get there.

38. I do jobs or tasks automatically, without being aware of what I'm doing.



Questions: Digital Skills

39. I am able to find data, information, and content by searching digital environments.

40. I am able to apply different search strategies to find the most appropriate data, information and content in digital environments.

41. I am able to help my colleagues browse, search and filter data, information, and content.

42. I am able to decide on the reliability of data, information, and content sources in digital environments.

43. I am able to compare the data, information, and content I access in digital environments with different sources.

44. I am able to determine how to store data, information, and content in a digital environment.

45. I am able to create different information by using digital environments creatively.

46. I am able to find solutions to complex problems by using digital tools and technologies creatively.

47. I am aware of how my digital competence needs to be improved.

48. I am able to tell you where to look for opportunities to improve my digital competence.

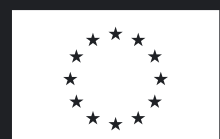
49. I am able to follow current developments to improve my digital skills/knowledge.

50. I am able to design the most appropriate program to solve a specific problem or perform a specific task in a digital environment.

51. I am able to offer different services, tools and technologies to other people (my students, colleagues, etc.) to participate in work society through digital technologies.

52. I am able to choose the most appropriate tools and technology to create content in the digital environment.

53. I am able to help my colleagues with which tools they are able to use in collaborative processes in the digital environment.



Methodology: Need GAP Analysis

- The term “gap” refers to the space between “where we are” and where “we want to be”.
- Need Gap analysis assesses the differences between the actual and expected performance.
- PERFORMANCE GAP ANALYSIS: This type of analysis finds the difference between an organization’s or person’s expected performance and their actual performance.

01

Step 1

Identify the current state of your department.

02

Step 2

Identify where you want to be with your department.

03

Step 3

Identify the gaps in your department.

04

Step 4

Devise improvements to close the gaps in your department.

Presentation of the Needs Analysis Survey

- Who are our participants?
- How does administrative staff evaluate their own 4 main skills?
- What are the thoughts of Academic staff and HRM about these skills of Administrative Staff?
- What did Need Gap Analysis say to us?
- Reliability of the Survey Results
- Correlation Results among 4 Main Skills
- Differences (Country, Age, Work Experience, Training...)
- Conclusion

Sample: Administrative Staff (PART I)

Gender	Belgium	Poland	Slovenia	Türkiye	Netherlands	Total
Male	1	4	3	11	2	21
Female	18	17	16	10	13	74
Prefer Not to Say	1	1	2	0	0	4
Total	20	22	21	21	15	99

Level of Education	Belgium	Poland	Slovenia	Türkiye	Netherlands	Total
High School	1	2	0	1	3	7
Vocational School	0	2	1	2	4	9
Bachelor's Degree	13	4	14	8	7	46
Master's Degree	6	14	6	9	1	36
Ph.D. or Higher	0	0	0	1	0	1
Total	20	22	21	21	15	99

Sample: Administrative Staff (PART I)

Age	Belgium	Poland	Slovenia	Türkiye	Netherlands	Total
0-25	0	5	1	2	0	8
26-40	6	12	9	19	6	52
41-55	9	5	10	0	7	31
56-Above	5	0	1	0	2	8

Work Experience	Belgium	Poland	Slovenia	Türkiye	Netherlands	Total
0<Wexp<=1	3	11	3	6	0	23
1<Wexp<=5	2	8	5	6	7	28
5<Wexp<=10	3	2	5	7	3	20
10<Wexp<=15	3	1	2	2	4	12
Above 15	9	0	6	0	1	16
Total	20	22	21	21	15	99

Sample size conclusion

- The targeted number of surveys were almost reached at the stage of data collection.
- Majority of the participants have a **bachelor's degree** (N=46).
- The age of the participants ranged from **21** to **61**. However, the vast majority are in the range of **26-40** (N=52).
- Majority of participants of the employees have work experience **between 1 and 5 years** (N=28).

Self-evaluation (Administrative Staff, PART II)

PART II - Digital Skills

Digital Skills	1	2	3	4	5	6	Total
Belgium	0	0	0	5	13	2	20
Poland	0	5	0	9	5	3	22
Slovenia	0	1	0	3	9	8	21
Türkiye	0	1	3	5	6	6	21
Netherlands	0	1	1	5	8	0	15
Total	0	8	3	27	41	20	99

Self-evaluation (Administrative Staff, PART II)

PART II - Management & Leadership Skills

ML Skills	1	2	3	4	5	6	Total
Belgium	0	7	0	8	5	0	20
Poland	0	6	1	7	6	2	22
Slovenia	0	2	0	8	10	1	21
Türkiye	0	3	0	8	7	3	21
Netherlands	0	7	2	6	0	0	15
Total	0	25	3	37	28	6	99

Self-evaluation (Administrative Staff, PART II)

PART II - The Intercultural Effectiveness Skill

ICC Skills	1	2	3	4	5	6	Total
Belgium	0	4	3	6	7	0	20
Poland	0	5	1	7	4	5	22
Slovenia	0	2	0	6	12	1	21
Türkiye	0	4	0	5	8	4	21
Netherlands	1	5	2	5	2	0	15
Total	1	20	6	29	33	10	99

Self-evaluation (Administrative Staff, PART II)

PART II - Collaboration Skills And Mental & Cognitive Skills

Mental Skills	6	5	4	3	2	1	Total
Belgium	0	0	7	10	3	0	20
Poland	0	3	7	11	1	0	22
Slovenia	0	0	4	10	7	0	21
Türkiye	0	1	6	10	4	0	21
Netherlands	0	1	7	5	2	0	15
Total	0	5	31	46	17	0	99

01.**DIGITAL SKILLS**

- Excel, Advanced Excel and Other Microsoft Programs, Sharepoint, Outlook, Google Skills, One Drive
- Blackboard, Moodle, Teams, Zoom, Slido, Mentimeter, Kahoot, Trados, Osiris, Canva, SAP
- Webinar Tools
- Student Information Systems

03.**THE INTERCULTURAL EFFECTIVENESS**

- Creating a positive international student experience
- Academic English and Some Other Language Courses

02.**MANAGEMENT / LEADERSHIP SKILLS**

- Workshops on Leadership and Lean Management
- Time Management
- Student Motivation
- Communication Skills
- Conflict Management
- Management Fundamentals for Executive Candidates

04.**COLLABORATION SKILLS AND MENTAL / COGNITIVE SKILLS**

- Self Awareness Course,
- Mindfulness
- Meditation

Administrative Staff: Were you able to integrate the outputs of these trainings into your current work? PART II

ADVANTAGES

- Better time management
- Setting priorities
- Better communication with foreign students in their language
- Advanced excel, outlook and similar program trainings have changed the way I work.
- Saved time
- Reduced stress

DISADVANTAGES

- Trainings and the tools that have been used in the universities are different
- Some of the universities did not provide any training
- Staff paid Certificate fees

Views of Human Resource Management About Administrative Staff

Is there any screening process in place to determine the management, leadership, or personal skills of a candidate during the recruitment process?

- Netherlands: An external assessment test
- Türkiye: Microsoft Office (Digital Skills)
- Slovenia: Psychological testing

Is there any screening process to determine a candidate's intercultural communication skills in the recruitment process?

- Belgium: Speaking test in English

Views of Human Resource Management About Administrative Staff

Is there any process to measure a candidate's ability to complete his/her tasks in the recruitment process?

- Slovenia: Psychological testing
- Poland: Asking questions to test knowledge

Are arrangements such as salary increases, promotions, and reassignments made as a result of the findings obtained from this system?

- Slovenia: Salary increases, promotions, bonuses

Views of Academic Staff About Administrative Staff

- Lack of foreign language
- Lack of knowledge on legislation or university procedures
- Different answers from different departments
- Not all staff members are equally trained in providing sufficient help
- It is not clear who is in charge of what
- Staff is overworked and even if they wanted to provide sufficient support, there aren't enough hours in the day

4 main Skills conclusion

01.

Although not evenly distributed among countries, 38 people think that they are not good at digital skills.

02.

As a more interesting result, 65 of the participants, who stated that they received management/leadership training the most, avoided saying that they found themselves good in this subject.

03.

According to the statements of 56 participants, it can be said that there is a need for intercultural communication training.

04.

Participants' self-evaluations for Collaboration Skills And Mental & Cognitive Skills again provide clues that improvement is needed.

Continued...

- The trainings that the participants have received so far are mostly aimed at improving their digital and management/leadership skills. The statements of the participants show that the trainings received have some benefits such as stress reduction and time planning.
- The statements of the human resources department show that screening processes for administrative staff need to be developed and increased.
- Statements of academic staff also support the need for some training-development programs.

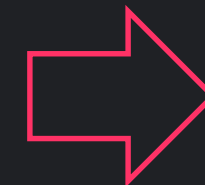
Information

ICC	THE INTERCULTURAL EFFECTIVENESS	
ICC-1		Interaction relaxation
ICC-2		Interactant respect
ICC-3		Interaction management
ICC-4		Behavioral flexibility
ICC-5		Identity maintenance
ICC-6	Implicit cultural awareness	
ML	MANAGEMENT / LEADERSHIP SKILLS	Management/ leadership skills
ML-People		People
ML-Task		Task
ML-Reward		Contingent reward
Mental-CS	COLLABORATION SKILLS AND MENTAL / COGNITIVE SKILLS	Collaboration skills and mental / cognitive skills
DS	DIGITAL SKILLS	Digital skills
DS-DL		Data literacy
DS-PS		Problem solving
DS-CC		Digital content creation
DS-ComC		Communication and collaboration

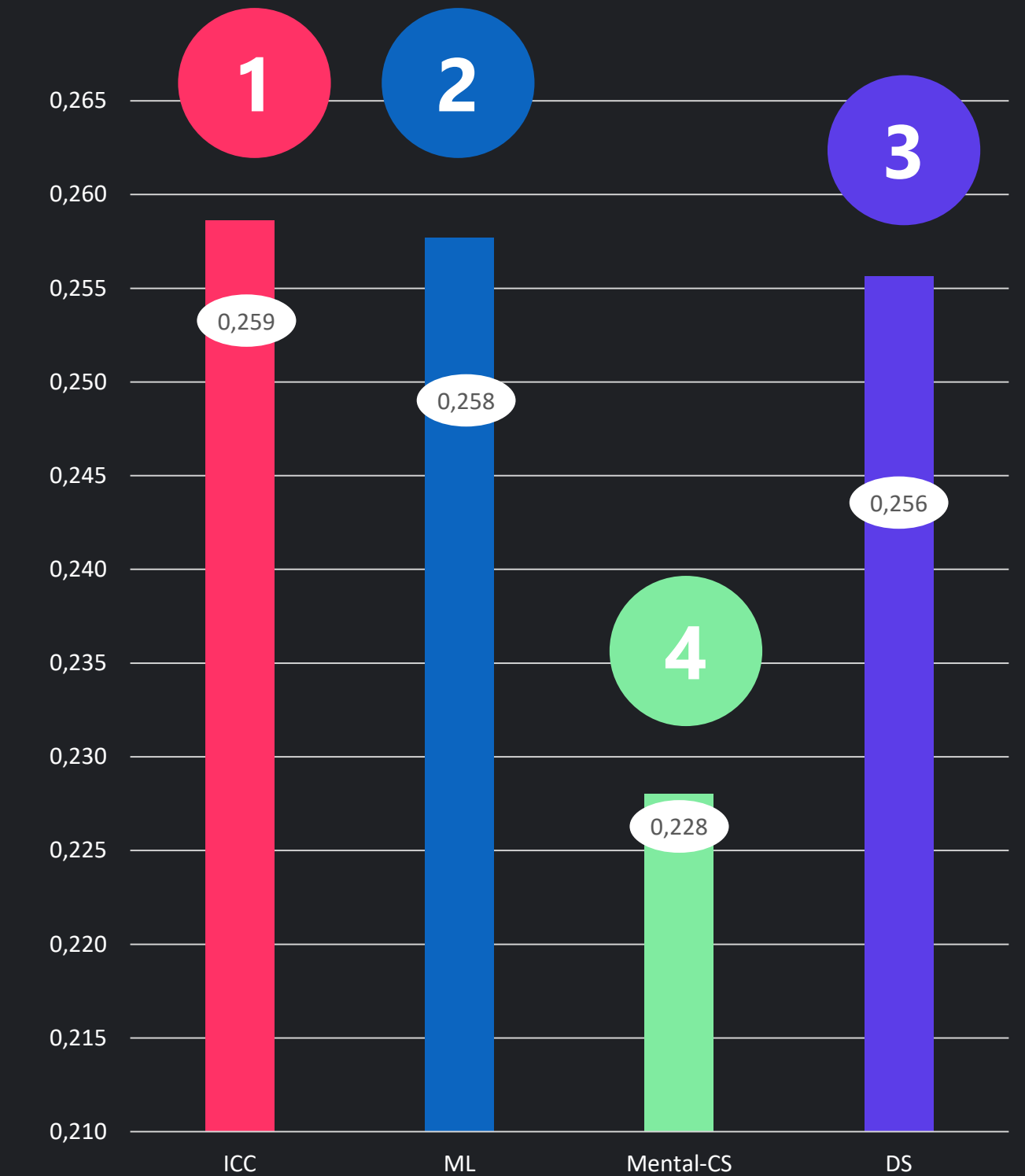
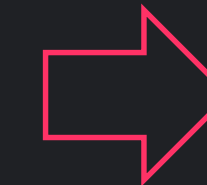
Need GAP Analysis-Main Groups

Which one is better?

	ICC	ML	Mental-CS	DS	Total
1	1	0	5	0	6
1.5	0	0	0	0	0
2	0	0	12	0	12
2.5	0	0	0	0	0
3	2	4	50	11	67
3.5	0	6	0	0	6
4	65	49	27	55	196
4.5	0	14	0	0	14
5	22	18	4	25	69
5.5	0	1	0	0	1
6	9	7	1	8	25
Total	99	99	99	99	396



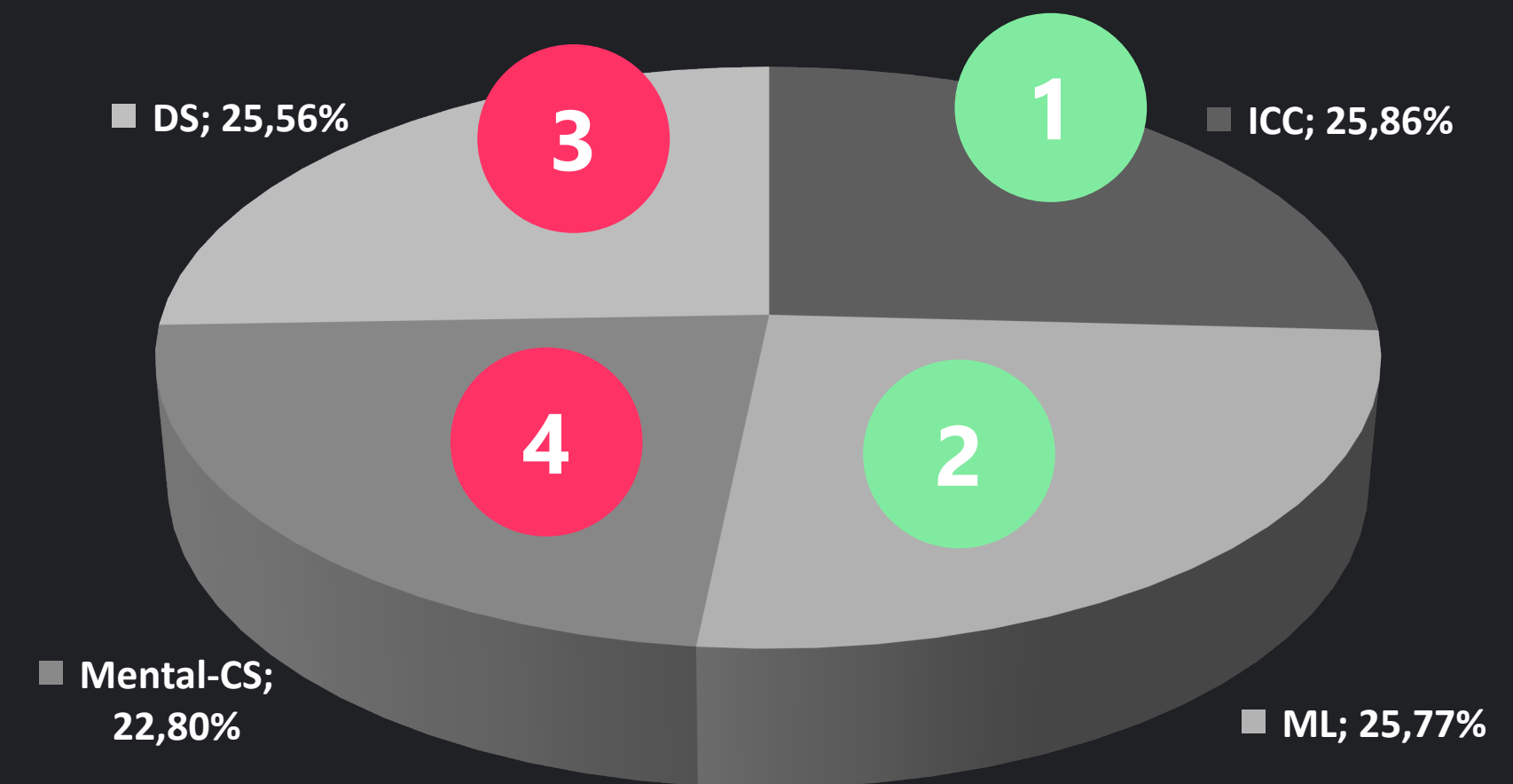
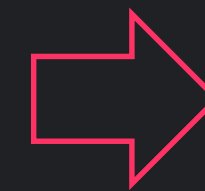
	ICC	ML	Mental-CS	DS	Total
1	1	0	30	0	31
1.5	0	0	0	0	0
2	0	0	60	0	60
2.5	0	0	0	0	0
3	6	12	200	33	251
3.5	0	21	0	0	21
4	260	196	81	220	757
4.5	0	63	0	0	63
5	110	90	8	125	333
5.5	0	5,5	0	0	5,5
6	54	42	1	48	145
Total	431	429,5	380	426	1666,5
	0,259	0,258	0,228	0,256	0,259



Need GAP Analysis-Main Groups

Which one is better?

Questions	Mean	Expected	Absolute Difference	Rank
ICC	4.35	6	1.65	1
ML	4.34	6	1.66	2
DS	4.30	6	1.70	3
Mental-CS	3.16	1	2.16	4



Need GAP Analysis-Subgroups

Which one is better?

	ICC-1	ICC-2	ICC-3	ICC-4	ICC-5	ICC-6	ML-People	ML-Task	ML-Reward	DS-DL	DS-PS	DS-CC	DS-ComC	Total
1	1	1	2	1	1	3	2	0	0	0	0	7	1	19
1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	2	0	0	4	2	4	2	0	6	0	0	22	4	46
2.5	0	0	5	0	0	0	0	0	0	0	0	0	0	5
3	21	3	21	36	66	9	12	18	69	3	27	84	72	441
3.5	0	0	49	0	0	0	0	35	0	17,5	0	0	0	101,5
4	184	120	104	204	200	140	208	168	192	172	244	148	204	2288
4.5	0	0	67,5	0	0	0	0	67,5	0	49,5	0	0	0	184,5
5	140	150	80	75	70	135	130	90	70	110	105	60	65	1280
5.5	0	0	27,5	0	0	0	0	11	0	33	0	0	0	71,5
6	96	222	72	108	66	174	84	36	66	66	48	24	48	1110
Total	444	496	428	428	405	465	438	425,5	403	451	424	345	394	5546,5
	0,080	0,089	0,077	0,0772	0,0730	0,084	0,079	0,077	0,073	0,081	0,076	0,062	0,071	0,080

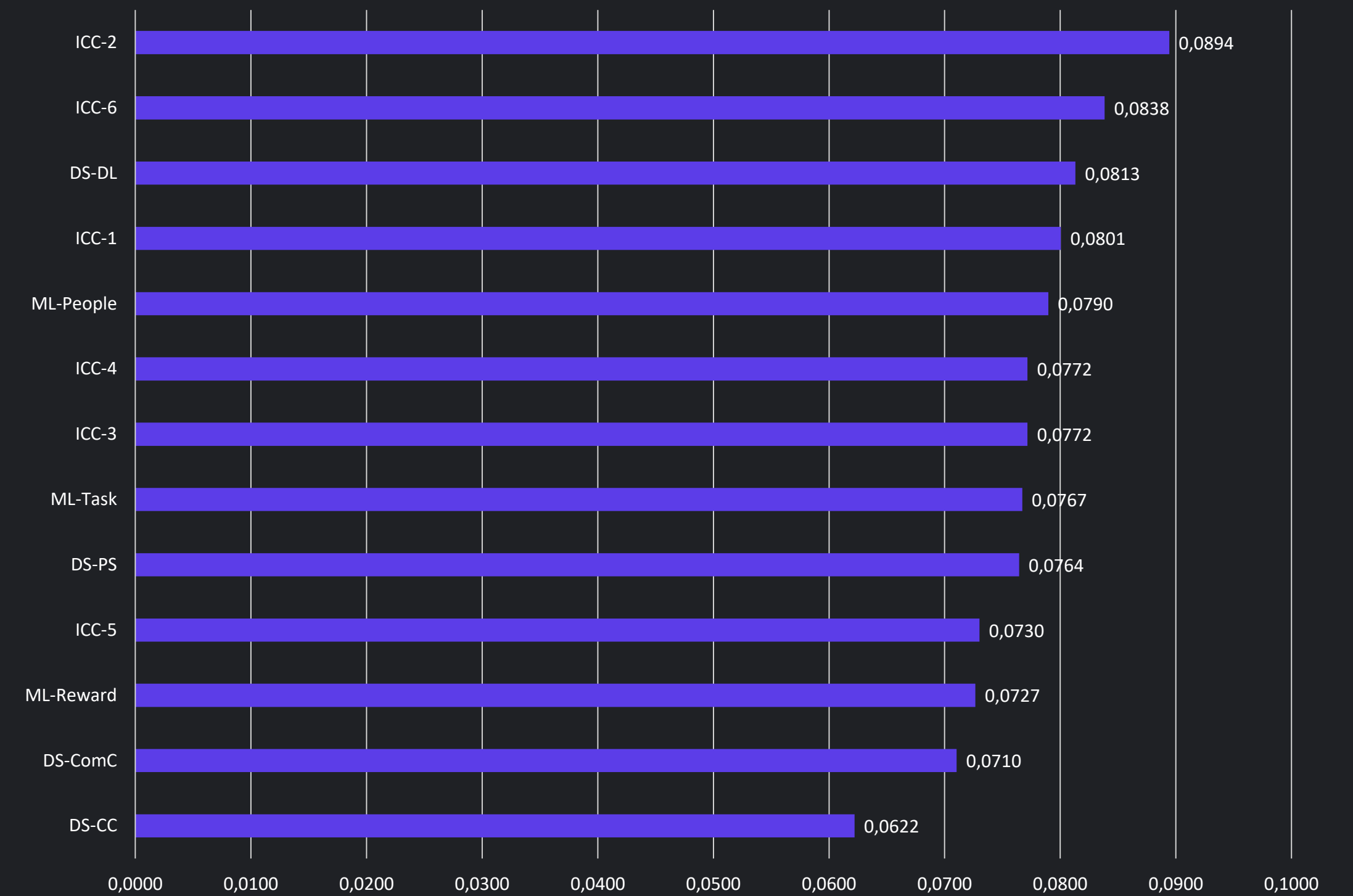
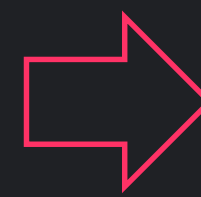
Need GAP Analysis

Which one is better?



Need GAP Analysis - Absolute Difference

Rank	Questions	Mean	Expected	Absolute Difference
1	ICC-2	5,01	6	0,99
2	ICC-6	4,70	6	1,30
3	DS-DL	4,56	6	1,44
4	ICC-1	4,48	6	1,52
5	ML-People	4,42	6	1,58
6	ICC-3	4,32	6	1,68
7	ICC-4	4,32	6	1,68
8	ML-Task	4,30	6	1,70
9	DS-PS	4,28	6	1,72
10	ICC-5	4,09	6	1,91
11	ML-Reward	4,07	6	1,93
12	DS-ComC	3,98	6	2,02
13	DS-CC	3,48	6	2,52



Need Gap analysis conclusion

The results showed that the 2 main skills with the highest absolute difference between the expected value and the actual value are digital skill and mental/cognitive skill, respectively (1.70 and 2.16).

When sub-dimensions are included in the analysis, it was seen that the dimensions digital skill-content creation (2.52); digital skill-communication and collaboration (2.02) and management/leadership skill-contingent reward (1.93) has the highest absolute difference.

The sub-dimensions with the lowest difference are intercultural effectiveness skill- interactant respect (0.99); intercultural effectiveness skill-implicit cultural awareness (1.30) and digital skill- data literacy (1.44).

40 %

Collaboration
Skills and Mental
/ Cognitive Skills

30 %

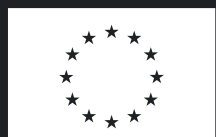
Digital
Skills

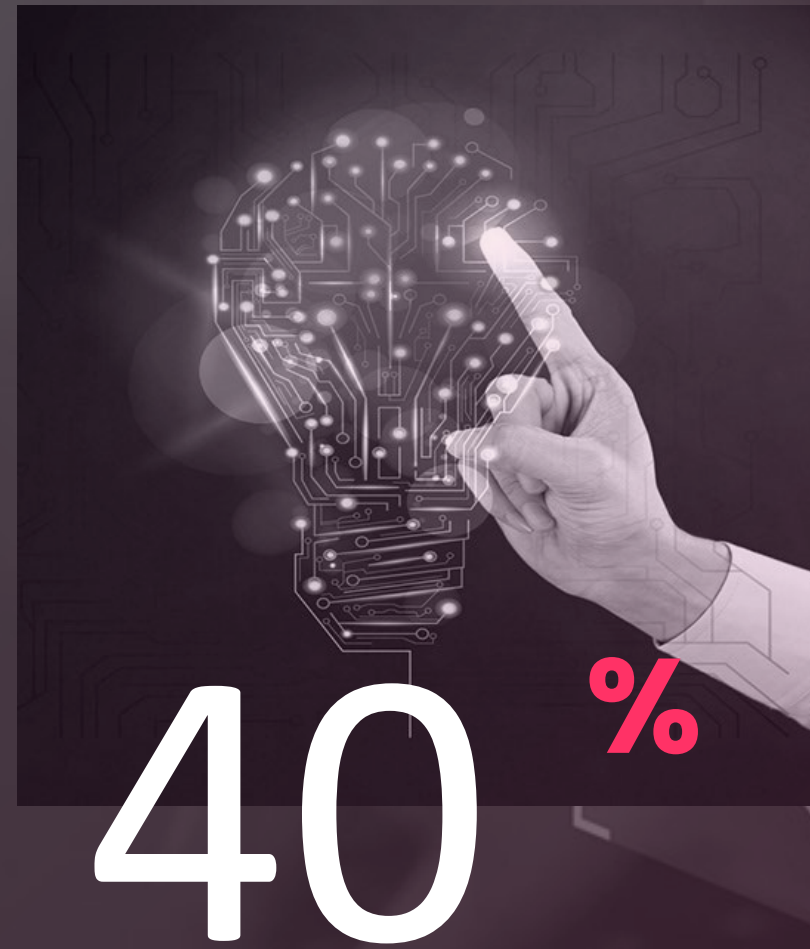
20 %

Management
and Leadership
Skills

10 %

The Intercultural
Effectiveness





Collaboration
Skills and Mental
/ Cognitive Skills

- Collaboration skills and mental/cognitive skills



Digital Skills

- Digital skills
- Data literacy
- Problem solving
- Digital content creation
- Communication and collaboration



Management and Leadership
Skills

- Management / leadership skills
- People
- Task
- Contingent reward



The Intercultural
Effectiveness

- Interaction relaxation
- Interactant respect
- Interaction management
- Behavioral flexibility
- Identity maintenance
- Implicit cultural awareness

Reliability Statistics

➔ Reliability
[DataSet]

Scale: ALL VARIABLES

Case Processing Summary

	N	%
Cases Valid	99	100.0
Excluded*	0	.0
Total	99	100.0

Reliability Statistics

Cronbach`s	N of items
.939	70

* Listwise deletion based on all variables in the procedure.

Correlation Analysis

		ML	ICC	DS	Mental-CS
ML	Correlation Coefficient	1			
	Sig. (2-tailed)				
ICC	Correlation Coefficient	.554**	1		
	Sig. (2-tailed)	0,0000			
DS	Correlation Coefficient	.486**	.375**	1	
	Sig. (2-tailed)	0,0000	0,0001		
Mental-CS	Correlation Coefficient	.286**	.289**	0,1313	1
	Sig. (2-tailed)	0,0042	0,0037	0,1950	

Country Differences: ICC

Test Statistics ^{a,b}

	ICC	ICC-1	ICC-2	ICC-3	ICC-4	ICC-5	ICC-6
Chi-Square	2.663	2.250	2.123	7.357	1.841	2.115	1.120
df	4	4	4	4	4	4	4
Asymp. Sig.	.616	.690	.713	.118	.765	.715	.891

a. Kruskal Wallis Test

b. Grouping Variable: Country

H_0 : There is no difference between countries...

(If $p < 0.05$; reject the null hypothesis)

We can organize the same training for all countries because there was no significant difference between countries in these skills.

Country Differences: ML & Mental-CS

	Test Statistics ^{a,b}			
	ML-People	ML-Talk	ML-Reward	Mental-CS
Chi-Square	7.450	8.099	.696	3.930
df	4	4	4	4
Asymp. Sig.	.114	.088	.952	.416

a. Kruskal Wallis Test

b. Grouping Variable: Country

H_0 : There is no difference between countries...

(If $p < 0.05$; reject the null hypothesis)

We can organize the same training for all countries because there was no significant difference between countries in these skills.

Country Differences: DS

Test Statistics ^{a,b}

	DS.-DataLiteracy	DS-ProblemSolving	DS.-DContentCreation	DS.-ComColl
Chi-Square	13.126	8.885	11.395	15.526
df	4	4	4	4
Asymp. Sig.	.011	.064	.022	.004

a. Kruskal Wallis Test

b. Grouping Variable: Country

H_0 : There is no difference between countries...

(If $p < 0.05$; reject the null hypothesis)

We can organize the same training for all countries because there was no significant difference between countries in these skills.

Country Differences: DS-DL

Test Statistics ^{a,b}

	DS	DS DataLiteracy	DS ProblemSolving	DS DContentCreation	DS ComColl
Chi-Square	11.891	13.126	8.885	11.398	15.526
df	4	4	4	4	4
Asymp. Sig.	.018	.011	.064	.022	.004

H_0 : There is no difference between countries...

(If $p < 0.05$; reject the null hypothesis)

Country	Code	Mean
Belgium	1	4.33
Poland	2	4.59
Slovenia	3	4.90
Türkiye	4	4.69
Netherlands	5	4.13

a. Kruskal Wallis Test

b. Grouping Variable: Country

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of DS-DataLiteracy is the same across categories of Country.	Independent-Samples Kruskal-Wallis Test	.011	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Each node shows the sample average rank of Country.

Sample1-Sample2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj.Sig.
5.0-1.0	8.625	9.328	.925	.355	1.000
5.0-2.0	16.550	9.145	1.810	.070	.703
5.0-4.0	20.871	9.233	2.261	.024	.238
5.0-3.0	30.419	9.233	3.295	.001	.010
1.0-2.0	-7.925	8.438	-.939	.348	1.000
1.0-4.0	-12.246	8.533	-1.435	.151	1.000
1.0-3.0	-21.794	8.533	-2.554	.011	.106
2.0-4.0	-4.321	8.332	-.519	.604	1.000
2.0-3.0	-13.869	8.332	-1.665	.096	.960
4.0-3.0	9.548	8.428	1.133	.257	1.000

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same. Asymptotic significances (2-sided tests) are displayed. The significance level is .05.

Country Differences: DS-CC

Test Statistics ^{a,b}

	DS	DS DataLiteracy	DS ProblemSolving	DS DContentCreation	DS ComColl
Chi-Square	11.891	13.126	8.885	11.398	15.526
df	4	4	4	4	4
Asymp. Sig.	.018	.011	.064	.022	.004

H_0 : There is no difference between countries...

(If $p < 0.05$; reject the null hypothesis)

Country	Code	Mean
Belgium	1	3.30
Poland	2	3.64
Slovenia	3	3.29
Türkiye	4	4.14
Netherlands	5	2.87

a. Kruskal Wallis Test

b. Grouping Variable: Country

Hypothesis Test Summary

Null Hypothesis	Test	Sig.	Decision
1 The distribution of DS-DContentCreation is the same across categories of Country.	Independent-Samples Kruskal-Wallis Test	.022	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Each node shows the sample average rank of Country.

Sample1-Sample2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj.Sig.
5.0-3.0	10.805	9.322	1.159	.246	1.000
5.0-1.0	12.117	9.419	1.286	.198	1.000
5.0-2.0	18.112	9.233	1.962	.050	.498
5.0-4.0	29.710	9.322	3.187	.001	.014
3.0-1.0	1.312	8.616	.152	.879	1.000
3.0-2.0	7.307	8.413	.869	.385	1.000
3.0-4.0	-18.905	8.510	-2.221	.026	.263
1.0-2.0	-5.995	8.520	-.704	.482	1.000
1.0-4.0	-17.593	8.616	-2.042	.041	.412
2.0-4.0	-11.597	8.413	-1.379	.168	1.000

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same. Asymptotic significances (2-sided tests) are displayed. The significance level is .05.

Country Differences: DS-ComC

Test Statistics ^{a,b}

	DS	DS DataLiteracy	DS ProblemSolving	DS DContentCreation	DS ComColl
Chi-Square	11.891	13.126	8.885	11.398	15.526
df	4	4	4	4	4
Asymp. Sig.	.018	.011	.064	.022	.004

H_0 : There is no difference between countries...

(If $p < 0.05$; reject the null hypothesis)

Country	Code	Mean
Belgium	1	3.60
Poland	2	4.09
Slovenia	3	4.24
Türkiye	4	4.33
Netherlands	5	3.47

a. Kruskal Wallis Test

b. Grouping Variable: Country

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of DS-ComColl is the same across categories of Country.	Independent-Samples Kruskal-Wallis Test	.004	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Each node shows the sample average rank of Country.

Sample1-Sample2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj. Sig.
5.0-1.0	5.692	9.025	.631	.528	1.000
5.0-2.0	17.944	8.848	2.028	.043	.426
5.0-4.0	26.538	8.933	2.971	.003	.030
5.0-3.0	26.871	8.933	3.008	.003	.026
1.0-2.0	-12.252	8.164	-1.501	.133	1.000
1.0-4.0	-20.846	8.256	-2.525	.012	.116
1.0-3.0	-21.180	8.256	-2.565	.010	.103
2.0-4.0	-8.594	8.061	-1.066	.286	1.000
2.0-3.0	-8.927	8.061	-1.107	.268	1.000
4.0-3.0	.333	8.155	.041	.967	1.000

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same. Asymptotic significances (2-sided tests) are displayed. The significance level is .05.

Gender Differences: ICC-1

Test Statistics ^{a,b}

	ICC	ICC-1	ICC-2	ICC-3	ICC-4	ICC-5	ICC-6
Chi-Square	4.070	7.033	4.072	3.116	8.044	.314	.121
df	2	2	2	2	2	2	2
Asymp. Sig.	.131	.030	.131	.211	.018	.855	.941

H_0 : There is no difference between gender...

(If $p < 0.05$; reject the null hypothesis)

Country	Code	Mean
Prefer not to Say	2	3.75
Female	1	4.41
Male	0	4.90

- a. Kruskal Wallis Test
- b. Grouping Variable: Country

Hypothesis Test Summary

Null Hypothesis	Test	Sig.	Decision
1 The distribution of ICC-1 is the same across categories of Gender.	Independent-Samples Kruskal-Wallis Test	.030	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Sample1-Sample2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj.Sig.
2.0-1.0	19.345	13.773	1.405	.160	.480
2.0-0.0	33.190	14.637	2.268	.023	.070
1.0-0.0	13.846	6.634	2.087	.037	.111

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same. Asymptotic significances (2-sided tests) are displayed. The significance level is .05.

Gender Differences: ICC-4

Test Statistics ^{a,b}

	ICC	ICC-1	ICC-2	ICC-3	ICC-4	ICC-5	ICC-6
Chi-Square	4.070	7.033	4.072	3.116	8.044	.314	.121
df	2	2	2	2	2	2	2
Asymp. Sig.	.131	.030	.131	.211	.018	.855	.941

H₀: There is no difference between gender...

(If p<0.05; reject the null hypothesis)

Country	Code	Mean
Prefer not to Say	2	3.75
Female	1	2.93
Male	0	3.14

a. Kruskal Wallis Test

b. Grouping Variable: Country

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of ICC-4 is the same across categories of Gender.	Independent-Samples Kruskal-Wallis Test	.018	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Sample1-Sample2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj.Sig.
2.0-1.0	32.091	13.610	2.358	.018	.055
2.0-0.0	40.720	14.464	2.815	.005	.015
1.0-0.0	8.629	6.556	1.316	.188	.564

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same. Asymptotic significances (2-sided tests) are displayed. The significance level is .05.

Gender Differences: ML & Mental-CS

Test Statistics ^{a,b}

	ML-People	ML-Task	ML-Reward	Mental-CS
Chi-Square	1.744	3.124	3.730	4.092
df	2	2	2	2
Asymp. Sig.	.418	.210	.155	.129

H_0 : There is no difference between gender...

(If $p < 0.05$; reject the null hypothesis)

a. Kruskal Wallis Test

b. Grouping Variable: Country

Gender Differences: DS

Test Statistics ^{a,b}

	DS	DS-DataLiteracy	DS-ProblemSolving	DS-DcontentCreation	DS-ComColl
Chi-Square	3.966	1.724	7.164	5.414	1.685
df	2	2	2	2	2
Asymp. Sig.	.138	.422	.028	.067	.431

H_0 : There is no difference between gender...

(If $p < 0.05$; reject the null hypothesis)

Country	Code	Mean
Prefer not to Say	2	4.62
Female	1	4.22
Male	0	4.25

a. Kruskal Wallis Test

b. Grouping Variable: Country

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of DS-ProblemSolving is the same across categories of Gender.	Independent-Samples Kruskal-Wallis Test	.028	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Each node shows the sample average rank of Gender.

Sample1-Sample2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj.Sig.
1.0-2.0	-3.912	12.814	-.305	.760	1.000
1.0-0.0	16.519	6.172	2.676	.007	.022
2.0-0.0	12.607	13.618	.926	.355	1.000

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same. Asymptotic significances (2-sided tests) are displayed. The significance level is .05.

Age Differences: ICC & ML & Mental-CS

Test Statistics ^{a,b}

	ICC-1	ICC-2	ICC-3	ICC-4	ICC-5	ICC-6
Chi-Square	1.973	3.046	4.541	6.013	3.699	.734
df	3	3	3	3	3	3
Asymp. Sig.	.578	.385	.209	.111	.296	.865



H₀: There is no difference between age groups...

(If p<0.05; reject the null hypothesis)

Test Statistics ^{a,b}

	ML-People	ML-Task	ML-Reward	Mental-CS
Chi-Square	3.335	3.573	2.216	1.476
df	3	3	3	3
Asymp. Sig.	.343	.311	.529	.688

a. Kruskal Wallis Test

b. Grouping Variable: Country

Age Differences: DS

Test Statistics ^{a,b}

	DS	DS-DataLiteracy	DS-ProblemSolving	DS-DcontentCreation	DS-ComColl
Chi-Square	4.471	3.790	8.504	10.357	9.829
df	3	3	3	3	3
Asymp. Sig.	.215	.285	.037	.016	.020

H_0 : There is no difference between age groups...

(If $p < 0.05$; reject the null hypothesis)

21-25	1	4.75
26-40	2	4.40
41-55	3	4.03
56-Above	4	4.00

a. Kruskal Wallis Test

b. Grouping Variable: Country

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of DS-ProblemSolving is the same across categories of Age.	Independent-Samples Kruskal-Wallis Test	.037	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Each node shows the sample average rank of Age.

Sample1-Sample2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj.Sig.
4.0-3.0	1.435	9.899	.145	.885	1.000
4.0-2.0	14.981	9.480	1.580	.114	.684
4.0-1.0	20.812	12.481	1.667	.095	.573
3.0-2.0	13.545	5.664	2.391	.017	.101
3.0-1.0	19.377	9.899	1.957	.050	.302
2.0-1.0	5.832	9.480	.615	.538	1.000

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same. Asymptotic significances (2-sided tests) are displayed. The significance level is .05.

Age Differences: DS

Test Statistics ^{a,b}

	DS	DS-DataLiteracy	DS-ProblemSolving	DS-DcontentCreation	DS-ComColl
Chi-Square	4.471	3.790	8.504	10.357	9.829
df	3	3	3	3	3
Asymp. Sig.	.215	.285	.037	.016	.020

H_0 : There is no difference between age groups...

(If $p < 0.05$; reject the null hypothesis)

21-25	1	4.00
26-40	2	3.71
41-55	3	3.23
56-Above	4	2.50

a. Kruskal Wallis Test

b. Grouping Variable: Country

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of DS-DContentCreation is the same across categories of Age.	Independent-Samples Kruskal-Wallis Test	.016	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Each node shows the sample average rank of Age.

Sample1-Sample2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj.Sig.
4.0-3.0	17.274	10.935	1.580	.114	.685
4.0-2.0	27.952	10.472	2.669	.008	.046
4.0-1.0	36.000	13.788	2.611	.009	.054
3.0-2.0	10.678	6.257	1.706	.088	.528
3.0-1.0	18.726	10.935	1.712	.087	.521
2.0-1.0	8.048	10.472	.768	.442	1.000

Age Differences: DS

Test Statistics ^{a,b}

	DS	DS-DataLiteracy	DS-ProblemSolving	DS-DcontentCreation	DS-ComColl
Chi-Square	4.471	3.790	8.504	10.357	9.829
df	3	3	3	3	3
Asymp. Sig.	.215	.285	.037	.016	.020

H_0 : There is no difference between age groups...

(If $p < 0.05$; reject the null hypothesis)

21-25	1	4.38
26-40	2	4.10
41-55	3	3.87
56-Above	4	3.25

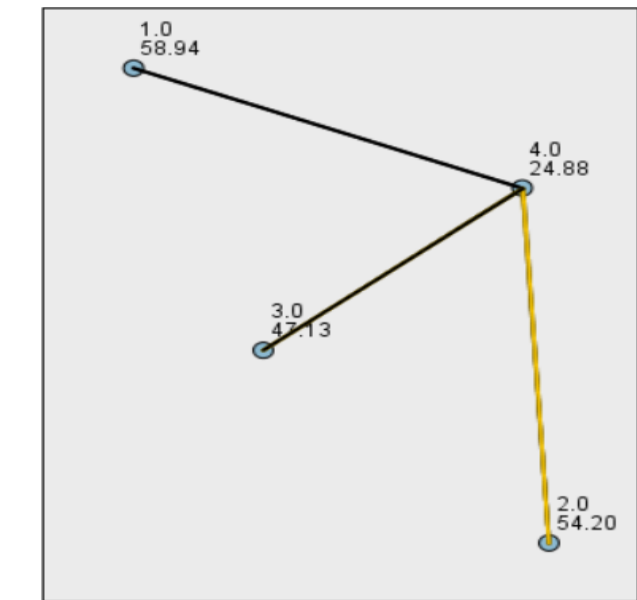
a. Kruskal Wallis Test

b. Grouping Variable: Country

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of DS-ComColl is the same across categories of Age.	Independent-Samples Kruskal-Wallis Test	.020	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.



Each node shows the sample average rank of Age.

Sample1-Sample2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj.Sig.
4.0-3.0	22.254	10.479	2.124	.034	.202
4.0-2.0	29.327	10.035	2.922	.003	.021
4.0-1.0	34.062	13.212	2.578	.010	.060
3.0-2.0	7.073	5.996	1.180	.238	1.000
3.0-1.0	11.808	10.479	1.127	.260	1.000
2.0-1.0	4.736	10.035	.472	.637	1.000

Work Experience Differences ICC

Test Statistics ^{a,b}

	ICC-1	ICC-2	ICC-3	ICC-4	ICC-5	ICC-6
Chi-Square	4.471	6.776	11.156	1.465	.233	3.148
df	4	4	4	4	4	4
Asymp. Sig.	.346	.148	.025	.833	.994	.533

H_0 : There is no difference between work experience groups ...

(If $p < 0.05$; reject the null hypothesis)

Country	Code	Mean
0 < Wexp <= 1	1	4.65
1 < Wexp <= 5	2	4.54
5 < Wexp <= 10	3	3.93
10 < Wexp <= 15	4	3.88
Above 15	5	4.31

a. Kruskal Wallis Test

b. Grouping Variable: Country

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of ICC-3 is the same across categories of Work Experience.	Independent-Samples Kruskal-Wallis Test	.025	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Each node shows the sample average rank of Work Experience.

Sample1-Sample2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj.Sig.
4.0-3.0	4.092	10.325	.396	.692	1.000
4.0-5.0	-17.917	10.798	-1.659	.097	.971
4.0-2.0	20.881	9.756	2.140	.032	.323
4.0-1.0	25.993	10.070	2.581	.010	.098
3.0-5.0	-13.825	9.484	-1.458	.145	1.000
3.0-2.0	16.789	8.279	2.028	.043	.426
3.0-1.0	21.901	8.645	2.533	.011	.113
5.0-2.0	2.964	8.862	.335	.738	1.000
5.0-1.0	8.076	9.205	.877	.380	1.000
2.0-1.0	5.112	7.957	.642	.521	1.000

Work Experience Differences-ML-MentalCS

Test Statistics ^{a,b}

	ML	ML-People	ML-Task	ML-Reward	Mental-CS
Chi-Square	3.274	5.151	2.488	4.434	3.214
df	4	4	4	4	4
Asymp. Sig.	.513	.272	.647	.350	.523

H₀: There is no difference between work experience groups...

(If p<0.05; reject the null hypothesis)

a. Kruskal Wallis Test

b. Grouping Variable: Country

Work Experience Differences: DS

Test Statistics ^{a,b}

	DS	DS-DataLiteracy	DS-ProblemSolving	DS-DcontentCreation	DS-ComColl
Chi-Square	6.424	4.751	9.984	9.563	6.629
df	4	4	4	4	4
Asymp. Sig.	.170	.314	.041	.048	.157

H_0 : There is no difference between work experience groups ...

(If $p < 0.05$; reject the null hypothesis)

Country	Code	Mean
0<Wexp<=1	1	4.61
1<Wexp<=5	2	4.32
5<Wexp<=10	3	4.25
10<Wexp<=15	4	4.00
Above 15	5	4.00

a. Kruskal Wallis Test

b. Grouping Variable: Country

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of DS-ProblemSolving is the same across categories of Work Experience.	Independent-Samples Kruskal-Wallis Test	.041	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Each node shows the sample average rank of Work Experience.

Sample1-Sample2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj.Sig.
5.0-4.0	1.406	9.533	.148	.883	1.000
5.0-3.0	9.106	8.373	1.088	.277	1.000
5.0-2.0	13.049	7.823	1.668	.095	.953
5.0-1.0	22.406	8.126	2.757	.006	.058
4.0-3.0	7.700	9.115	.845	.398	1.000
4.0-2.0	11.643	8.613	1.352	.176	1.000
4.0-1.0	21.000	8.889	2.362	.018	.182
3.0-2.0	3.943	7.308	.539	.590	1.000
3.0-1.0	13.300	7.632	1.743	.081	.814
2.0-1.0	9.357	7.025	1.332	.183	1.000

Work Experience Differences: DS

Test Statistics ^{a,b}

	DS	DS-DataLiteracy	DS-ProblemSolving	DS-DcontentCreation	DS-ComColl
Chi-Square	6.424	4.751	9.984	9.563	6.629
df	4	4	4	4	4
Asymp. Sig.	.170	.314	.041	.048	.157

H_0 : There is no difference between work experience groups ...

(If $p < 0.05$; reject the null hypothesis)

Country	Code	Mean
0<Wexp<=1	1	3.87
1<Wexp<=5	2	3.57
5<Wexp<=10	3	3.65
10<Wexp<=15	4	3.25
Above 15	5	2.75

a. Kruskal Wallis Test

b. Grouping Variable: Country

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of DS-DContentCreation is the same across categories of Work Experience.	Independent-Samples Kruskal-Wallis Test	.048	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Each node shows the sample average rank of Work Experience.

Sample1-Sample2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj.Sig.
5.0-4.0	7.500	10.530	.712	.476	1.000
5.0-2.0	17.000	8.642	1.967	.049	.492
5.0-3.0	18.075	9.249	1.954	.051	.507
5.0-1.0	25.853	8.977	2.880	.004	.040
4.0-2.0	9.500	9.514	.998	.318	1.000
4.0-3.0	10.575	10.069	1.050	.294	1.000
4.0-1.0	18.353	9.820	1.869	.062	.616
2.0-3.0	-1.075	8.073	-.133	.894	1.000
2.0-1.0	8.853	7.760	1.141	.254	1.000
3.0-1.0	7.778	8.431	.923	.356	1.000

Trainings Differences

Test Statistics ^a

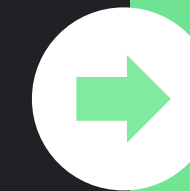
	ML	ML-People	ML-Task	ML-Reward	Mental-CS
Mann-Whitney U	322.000	383.000	371.000	440.500	325.500
Wilcoxon W	3977.000	4038.000	4026.000	4095.500	430.500
Z	-2.940	-2.331	-2.354	-1.664	-2.937
Asymp. Sig. (2-tailed)	.003	.020	.019	.096	.003

a. Grouping Variable: Train-ML

	ML	ML-People	ML-Task	ML-Reward	Mental-CS	DS	DS-DataLiteracy	DS-ProblemSolving	DS.-DContentCreation	DS.-ComColl
NO	4.25	4.33	4.23	4.00	3.27	1035.500	985.000	1109.500	1161.500	1202.000
YES	4.86	5.00	4.71	4.50	2.50	2413.500	2363.000	2487.500	2289.500	2330.000
Mann-Whitney U										
Wilcoxon W										
Z										
Asymp. Sig. (2-tailed)										

Difference tests conclusion

- It has been found that 3 main skills do not differ between countries, except for digital skill.
- In terms of gender, apart from the management/leadership skill, there were differences in terms of 3 main skills.
- The only main skill where there is a significant age difference is the digital skills.
- It has been found that there is a difference between intercultural effectiveness skills and digital skills in terms of work experience.
- There is a difference in the management/leadership skills of the group that received training and the group that did not.
- These differences can be taken into account in the planning of education.



- Country: Data literacy, Digital content creation, Digital Communication and Collaboration
- Gender: Interaction relaxation, Behavioral flexibility, Problem solving
- Age: Problem solving, Digital content creation, Digital Communication and Collaboration
- Work Experience: Interaction management, Problem solving, Digital content creation



VR4 Skills



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