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Teachers' Perceptions on Global Competence: Investigating its Basic Dimensions

Dr Karanikola Zoe

Special Teaching Staff Member, University of Patras

Abstract
In the contemporary context of globalization and of intense demographic, economic, technological and social changes, formal education is called upon to redefine its multidimensional role and prepare future citizens for the global challenges of the 21st century. In such a context, the present study aims to investigate the extent to which teachers have developed global competence by exploring three key dimensions of global competence: knowledge and understanding, skills, attitude and values. The quantitative methodology was followed and the questionnaire tool was selected. Random sampling technique was used, and the questionnaire was delivered through google forms. The sample consisted of 350 active teachers who taught in public schools of primary and secondary education in the region of western Greece in the school year 2021-2022. Research findings show that the average value for the dimension of Knowledge and Understanding is 3,62 (a lot), the average value for the dimension of Skills is 3,37 (enough) and the average value for the dimension is of Attitude and Values is 3,93 (a lot). In addition, the control of the Pearson correlation coefficient of the nine factors for global capability shows a statistically significant positive correlation between them. Finally, gender, level of education, employment relationship and years of service seem to affect the results of the scale.

Keywords: global competence, teachers, primary and secondary education, knowledge, skills, attitudes, values.

I. Introduction

Intense demographic changes have transformed the world, which looks like a global village, as it is estimated that more than 250,000,000 people on the planet live in countries other than those where they were born. At the same time, it is estimated that more than 65 million people today are asylum seekers and refugees, a number that is likely to increase significantly due to the war situation in Ukraine (Karanikola & Palaiologou, 2021; UNESCO, 2017; UNHCRa,b,c, 2021).

The movement of people is not a new phenomenon. However, what has changed nowadays is the intensity of the phenomenon due to rapid technological developments in the field of transport and telecommunications, the advent of the 4th Industrial Revolution and globalization (Panagiotopoulos & Karanikola, 2020).

We are called upon to act and interact in multicultural and multilingual environments (Pylvas & Nokelainen, 2019) and develop not only the skills that will make us competitive in new work environments but also the ability to analyze and understand global issues, which concern all of us and have an impact on both present and future generations (OECD, 2018).

Teachers are called to play a special role as they are the actors of change, they can give a global perspective in their teaching (Ford & Quinn, 2010) and provide future citizens with appropriate knowledge and skills in order to recognize and adapt to global socio-economic and environmental changes (Pylvas & Nokelainen, 2019)

In such a context, the present research comes to explore the level of knowledge, skills, attitudes and values on issues related to global competence teachers of formal education have. The elaboration of this research is considered important as at national level there is a limited number of researches in the field of teachers' global competence (e.g. Karanikola, Katsiouli & Palaiologou, 2022), while a multitude of researches mostly focus on the investigation of intercultural competence, which, however, is a sub-dimension of global competence.

II. Methods

This section presents the research aim and the research questions, the methodology followed, the sampling process, the population and the sample of the research, the instrument of the study, the data analysis and the research findings.

Research aim and research questions

The purpose of this research is to investigate the basic dimensions of global competence, as they are perceived by teachers of primary and secondary education in the region of western Greece. Specifically, the following questions are investigated:

- What is teachers' level of knowledge and understanding about global competence?
- What is their level of skills related to global competence?
- What attitudes and values have they developed in terms of global competence?
- Is there a correlation between global competence and gender, level of education, additional studies, employment relationship, years of service, level of ICT knowledge?

Methodology and instrument

In the present research, the quantitative methodology was followed and the questionnaire of Yang Liua, Yue Yinb and Ruilin Wuc (2020), "Measuring Students' Global Competence" was applied. It consists of 35 close-ended questions which are divided into three axes: knowledge and understanding (10 questions), skills (14 questions), attitudes / values (11 questions). Participants were asked to answer on a five-point Likert scale (1 = Not at all, 2 = A little, 3 = Enough, 4 = A lot, 5 = Too much). The data collection took place in June 2022 with an electronic questionnaire which was sent to the Directorates of Primary Schools, Gymnasiums and Lyceums of the Region of Western Greece, which resulted from random sampling to ensure the representativeness of the sample (Bryman, 2012). The region of Western Greece includes approximately 1,078 school units of primary and secondary education.

Data analysis

The data were encoded and analyzed with the statistical software SPSS 27.0 for Windows. Univariate frequency distribution analysis was performed individually and as a whole. Mean values (MV) and standard deviations (SD) were used to describe the analysis of quantitative variables on the participating teachers' perceptions of global competence. The regularity test (One-Sample Kolmogorov-Smirnov Test) of the variables showed that there was a normal distribution ($p = 0.000 > 0.05$). The Pearson parametric two-way correlation control was used to test the correlation of the variables. ANOVA variance control and regression analysis were also performed.

Scale's reliability

The reliability of the internal consistency of the three dimensions of the questionnaire (Table 1) is high as it ranges from 0,927 to 0,950> 0,70. Also, the values of the correlation indices range from +0,457 to +0,838> +0,3 indicating high internal consistency of the dimensions. Overall the Global Competency Questionnaire shows high reliability (Cronbach's Alpha = 0,967> 0,70). Also, the high coherence of the global competency questionnaire is demonstrated by the values of the correlation indices which range from +0,399 to +0,816> +0,3.

Table 1 *Reliability of Scale*

Dimensions	N of Items	Corrected Item-Total Correlation	Cronbach's Alpha
Knowledge and	10	0,694-0,775	0,927

understanding			
Skills	14	0,561-0,838	0,950
Attitudes and values	11	0,457-0,800	0,914
Global competence	35	0,399-0,816	0,967

Ethical considerations

Ethical issue is of major importance while conducting a research. This research adopted the procedural and relational ethics as proposed by Tracy (2010), which means that the participants were informed of confidentiality, voluntary participation as well as the content and nature of the research, along with the ability to withdraw at any time beforehand. What is more, informed consent was secured by the digital form of the questionnaire and the explanatory message which let them decide on their own to fill in it and express themselves freely without being directed by the researcher.

Respondents of the research

The questionnaire of the present survey was answered by 350 teachers of Primary and Secondary Education of the Region of Western Greece, of which 75,4% are women and 24,6% are men. 60% belong to the age category of 41-55 years. The majority of participants (58,3%) work in Secondary Education, 62,9% have a master's degree, 70,3% are permanent and 56% have 11-25 years of service. Regarding the level of knowledge in Information and Communication Technologies (ICT) the majority (48,6%) has an A level certification or ECDL (basic knowledge of computer use and internet use) and 36.6% certified knowledge Level B (use of educational software in the educational process).

III. Results

In terms of sample teachers' answers to the Knowledge and understanding sub-factors (Table 2), the average value for global knowledge is 3,53 (a lot), for understanding globalization 3,81 (a lot) and for international academic knowledge 3,47 (enough). In total for the dimension of Knowledge and Understanding the average value is 3,62 (a lot).

Table 2 *Distribution of Mean Values and Standard Deviations for Knowledge and Understanding*

Dimensions	Sub-factors	Items	MEAN	SD
Knowledge and Understanding	1) World Knowledge (WK)	Q1 Other than my own country, I know about the history and geography of at least one other country.	3,57	0,063
		Q2 Other than my own country, I know about the political and economic systems of at least one other country.	3,38	0,061
		Q3 Other than my own country, I know about the language, cultural norms, religions, beliefs, and customs of at least one other country.	3,64	0,060
		Total	3,53	0,057
	2) Understanding Globalization (UG)	Q4 I understand the globalization concept and its development trends.	3,88	0,054
		Q5 I understand the effect of globalization on a country's development, individual lifestyles and scientific research activities.	3,86	0,052
		Q6 I understand the roles of international organizations and institutions in today's world and society.	3,71	0,053
		Q7 I pay attention to global events and international affairs.	3,78	0,052
		Total	3,81	0,046
	3) International	Q8 I know the internationally accepted	3,56	0,054

	Academic Knowledge (IAK)	theories and schools of thought in my field of study or profession.		
		Q9 I know the international cutting-edge research problems, issues, and theories in my field of study or profession.	3,45	0,058
		Q10 I know the main internationally accepted research methods in my field of study or profession	3,41	0,06
		Total	3,47	0,055
	Total knowledge and Understanding		3,62	0,044

Regarding the participants' answers for the Skills sub-factors (Table 3), the average value for the use of tools is 3,90 (a lot), for the cross-cultural communication 3,68 (a lot) and for the international academic knowledge 2,67 (enough). Overall for the Skills dimension the average value is 3,37 (enough).

Table 3 *Distribution of Mean Values and Standard Deviations for Skills*

Dimension	Sub-factors	Items	MEAN	SD
Skills	1) Use of Tools (UT)	Q11 I can easily read and write in one foreign language	3,76	0,066
		Q12 I can easily use MS Office, PDF Reader, and other common international software.	4,13	0,059
		Q13 I can easily browse foreign language websites to obtain knowledge and the requisite information.	3,80	0,068
		Total	3,90	0,059
	2) Cross-Cultural Communication (CCC)	Q14 I can analyze and evaluate issues from the perspective of a foreign culture.	3,45	0,059
		Q15 I have made efforts to understand foreigners so that we can work or live together	3,830	0,057
		Q16 I can be aware of cultural differences in my interactions with people from different cultures.	3,98	0,053
		Q17 I am able to quickly communicate in a common language in my interactions with people from different cultures	3,73	0,059
		Q18 I have the ability to adjust to language and communication outside of my own culture.	3,58	0,059
		Q19 I can learn, work, and live outside of my own culture.	3,53	0,063
		Total	3,68	0,051
	3) International Academic Communication (IAC)	Q20 I can easily comprehend foreign literature in my field of study or profession.	3,68	0,067
		Q21 When faced with problems in understanding professional literature, I can take the initiative to contact and consult the author	2,68	0,073
		Q22 I made efforts to publish papers in SCI, SSCI, ISTP, EI, and other indexed journals or conferences with my supervisors.	2,23	0,080
		Q23 I can actively seek foreign scholars to discuss research questions and issues at international academic conferences.	2,42	0,074
		Q24 I can easily discuss research questions and issues with foreign scholars at international academic	2,36	0,072

		conferences.		
		Total	2,67	0,062
	Total Skills		3,37	0,051

Regarding the answers of the respondents to the factors of Attitude and Values (Table 4), the average value for intent to interact is 3,72 (a lot), for Open Attitude 4,38 (a lot) and for the values 3,82 (a lot). In total for the dimension of Attitude and Values the average value is 3,93 (a lot). In terms of Global Competence as recorded by the respondents' answers in all three dimensions (nine factors) the average value is 3,62 (a lot).

Table 4 *Distribution of Mean Values and Standard Deviations for attitudes and values*

Dimension	Sub-factors	Items	MEAN	SD
Attitudes and Values	1) Intent to Interact (II)	Q25 I would like to spend time and energy in interacting with foreigners and establishing contacts.	3,41	0,062
		Q26 I would like to experience life and culture in other countries (such as through tourism).	4,14	0,055
		Q27 I would like to take the risk to experience cross-cultural learning and personal development (such as through overseas study and work).	3,77	0,061
		Q28 I would like to go abroad and experience foreign countries' academic and research environments.	3,70	0,064
		Q29 I would like to consult foreign scholars in my areas of interest at international academic lectures and report sessions.	3,61	0,059
		Total	3,72	0,051
	2) Open Attitude (OA)	Q30 When communicating with foreigners, I try to respect their cultures and values.	4,40	0,045
		Q31 When communicating with foreigners, I try to understand their cultures and values.	4,36	0,047
		Q32 When communicating with foreigners, I try to appreciate their cultures and values.	4,38	0,046
		Total	4,38	0,045
	3) Values (V)	Q33 I identify with my own country's culture and values	3,89	0,052
		Q34 I believe that my worldview is one of many equally valid worldviews.	3,80	0,053
		Q35 I consider myself valuable to my country and society.	3,76	0,058
		Total	3,82	0,042
	Total Attitudes and values		3,93	0,040
	Total Global Competence		**3,62**	**0,041**

The Pearson correlation coefficient test of the nine factors for global competence shows a statistically significant positive correlation between them. Higher levels of statistically significant positive correlation are recorded: between understanding globalization with cross-cultural communication (r=0,703), between using tools with cross-cultural communication (r=0,785) and international academic communication (r=0,718) and between cross-cultural communication and intent to interact (r=0,713). Lower levels of statistically significant positive correlation are recorded between World Knowledge and International Academic Communication (r=0,439), Open Attitude (r=0,421) and values (r=0,422). Also, between International Academic Communication with Values (r=0,414) and between International Academic Communication with Open Attitude (r=0,363) and values (r=0,336).

Table 5 *Relevance Test of the Nine Factors of Global Competence*

	Pearson Correlation	1	2	3	4	5	6	7	8	9
1	WK	-								
2	UG	0,581**	-							
3	IAK	0,569**	0,619**	-						
4	UT	0,469**	0,596**	0,573**	-					
5	CCC	0,596**	0,703**	0,623**	0,785**	-				
6	JAC	0,439**	0,472**	0,545**	0,718**	0,670**	-			
7	II	0,490**	0,522**	0,478**	0,590**	0,713**	0,572**	-		
8	OA	0,421**	0,563**	0,432**	0,557**	0,629**	0,363**	0,657**	-	
9	V	0,422**	0,454**	0,414**	0,484**	0,462**	0,336**	0,498**	0,621**	-

***Correlation is significant at the 0.01 level (2-tailed).*

The control of the three-dimensional Pearson correlation coefficient for global competence shows a statistically significant positive correlation between them at relatively high levels: Knowledge/understanding with Skills (r=0,727) and Attitude/values (r = 0,647) and Skills with Attitude/values (r=0,704).

Table 6 *Relevance Testing of the Three Dimensions of Global Capacity*

		1	2	3
1	Knowledge and understanding	-		
2	Skills	0,727**	-	
3	Attitudes/values	0,647**	0,704**	-

***Correlation is significant at the 0.01 level (2-tailed).*

Correlation of Global Competence with gender and level of education

To determine if there is a statistically significant difference in the perceptions of the respondents based on gender and level of education, the data were analyzed using T-test independent samples.

For the dimension of knowledge and understanding, the mean values for men and women do not differ statistically significantly from each other [t (348) = 0,470, p-value = 0,639> 0,05]. For skills, the mean values for men and women differ statistically significantly [t (348) = - 2,911, p-value = 0,004 <0,05] and women agree to a greater extent (mean = 3,45) in relation to men (mean = 3.11) for skills. In terms of attitudes / values, the average values for men and women do not differ statistically significantly from each other [t (348) = - 0,860, p-value = 0,390> 0,05].

Regarding the relationship between the level of education and the individual dimensions of global competence, it is found that for knowledge and understanding the average values for the participants of the two levels differ statistically significantly from each other [t (348) =-4,366, p-value=0,000 <0,05]. Secondary education teachers show a greater degree (mean=3,78) of knowledge and understanding compared to primary education teachers (3,40). For skills, the mean values for the teachers of the two levels differ statistically significantly from each other [t (348) = - 4,462, p-value = 0,000 <0,05]. Therefore, Secondary school teachers agree to a greater extent (mean = 3,56) than Primary Education teachers (mean = 3,11) on skills. In terms of attitudes and values, the mean values of the participants of the two levels differ statistically significantly from each other [t (348) = - 3,952, p-value = 0,000 <0,05]. Secondary education

teachers agree to a greater extent (mean = 4,06) than Primary education teachers (mean = 3,74) on attitude and values.

Correlation of Global Competence with additional studies

One-Way Anova analysis was used to check the difference between the mean values of knowledge/understanding, skills and attitudes/values between the categories of additional studies of the participants. The findings of the analysis show that there is no equality of average values with the additional studies. Therefore, there is a statistically significant difference between knowledge/understanding, skills and attitude/values with the additional studies of the respondents. Specifically, for knowledge/understanding we have F (3) = 6,590, p = 0.000 <0.05, for skills F (3) = 24,471, p = 0,000 <0,05 and for attitude/values we have F (3) = 3,630, p = 0,013 <0,05.

Comparisons of mean values show that the statistically significant differences in the dimensions of Global Capacity with additional studies (Table 7) are identified in terms of Knowledge/understanding between the categories: a) "2nd Degree" and "PhD" (p=0,003< 0,05). b) "Postgraduate diploma" and "PhD" (p=0,028<0,05). c) "Postgraduate diploma" and "Not have" (p=0,042<0,05). Regarding the Skills, the differences are located between the categories: a) "2nd Degree" and "Postgraduate diploma" (p=0,005<0,05). b) "2nd Degree" and "PhD" (p=0,000<0,05). c) "Postgraduate diploma" and "PhD" (p = 0,000<0,05). d) "Postgraduate diploma" and "Not have" (p =0,000 <0,05). e) "PhD" and "Not have" (p=0,000 <0,05). In terms of attitude / values, the differences are located between the categories: a) "2nd Degree" and "PhD" (p=0,041<0,05). b) "PhD" and "Not have" (p=0,036 <0,05).

Table 7 *Analysis of Knowledge/Understanding, Skills and Attitudes/Values with additional studies*

Test Tukey HSD						95% Confidence Interval	
Dependent Variable	(I) Additional studies	(J) Additional studies	Mean Difference (I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
Knowledge and understanding	2nd Degree	Postgraduate diploma	-,215	,125	,312	-,54	,11
		PhD	-,701	,200	,003	-1,22	-,19
		Not have	,110	,157	,898	-,30	,52
	Postgraduate diploma	2nd Degree	,215	,125	,312	-,11	,54
		PhD	-,486	,174	,028	-,93	-,04
		Not have	,325	,123	,042	,01	,64
	PhD	2nd Degree	,701	,200	,003	,19	1,22
		Postgraduate diploma	,486	,174	,028	,04	,93
		Not have	,810	,198	0,001	,30	1,32
	Not have	2nd Degree	-,110	,157	,898	-,52	,30
		Postgraduate diploma	-,325	,123	,042	-,64	-,01
		PhD	-,810	,198	0,001	-1,32	-,30
Skills	2nd Degree	Postgraduate diploma	-,448	,134	,005	-,79	-,10
		PhD	-1,202	,214	0,001	-1,76	-,65
		Not have	,399	,169	,086	-,04	,84
	Postgraduate diploma	2nd Degree	,448	,134	,005	,10	,79
		PhD	-,754	,187	0,001	-1,24	-,27
		Not have	,847	,132	0,001	,51	1,19
	PhD	2nd Degree	1,202	,214	0,001	,65	1,76
		Postgraduate diploma	,754	,187	0,001	,27	1,24
		Not have	1,601	,213	0,001	1,05	2,15
	Not have	2nd Degree	-,399	,169	,086	-,84	,04
		Postgraduate diploma	-,847	,132	0,001	-1,19	-,51
		PhD	-1,601	,213	0,001	-2,15	-1,05

Attitudes/values	2nd Degree	Postgraduate diploma	-,216	,115	,240	-,51	,08
		PhD	-,491	,185	,041	-,97	-,01
		Not have	,005	,145	1,000	-,37	,38
	Postgraduate diploma	2nd Degree	,216	,115	,240	-,08	,51
		PhD	-,275	,161	,321	-,69	,14
		Not have	,221	,114	,211	-,07	,51
	PhD	2nd Degree	,491	,185	,041	,01	,97
		Postgraduate diploma	,275	,161	,321	-,14	,69
		Not have	,496	,184	,036	,02	,97
	Not have	2nd Degree	-,005	,145	1,000	-,38	,37
		Postgraduate diploma	-,221	,114	,211	-,51	,07
		PhD	-,496	,184	,036	-,97	-,02

Correlation of Global Competence with the employment relationship

One-Way Anova was used to test the difference between the mean values of knowledge/understanding, skills and attitude/values with the working relationship of the participants. The findings of the analysis of variance for the three dimensions of Global Competence show that there is no equality of average values with the employment relationship. Therefore there is a statistically significant difference between knowledge /understanding, skills and attitude/values with the employment relationship of the respondents. Specifically, in terms of knowledge and understanding, F (2) = 4,944, p = 0,008 <0,05, for skills F (2) = 8,993, p = 0,000 <0,05 and for attitude / values we have F (3) = 4,025, p = 0,019 <0,05.

Comparisons of the mean values show that the statistically significant differences in the dimensions of Global Capacity with the additional studies are identified in terms of Knowledge/understanding between the categories: "Permanent" and "Headmaster" (p = 0,011 <0,05). This difference shows that the average value of the level of knowledge and understanding for those who are "Permanent" is 0,490 points lower than those who are "Headmaster" and vice versa. Regarding Skills, the differences are located between the categories: a) "Permanent" and "Non Permanent" (p = 0,001 <0,05). This difference shows that the average value of the skill level for those who are "Permanent" is 0,435 points lower than those who are "Non Permanent" and vice versa b) "Permanent" and "Headmaster" (p = 0,016 <0,05). This difference shows that the average value of the skill level for those who have "Permanent" is 0,532 points lower than those who are "Headmaster" and vice versa. Regarding the Attitude and the values, the differences are located between the categories: "Permanent" and "Non Permanent" (p = 0,038 <0,05). This difference shows that the average value of the skill level for those who are "Permanent" is 0,222 points lower than those who are "Non Permanent" and vice versa.

Correlation of Global Competence with years of service

One Way Anova analysis was used to check the difference between the mean values of knowledge/ understanding, skills and attitude/values between the categories of years of service of the participants. The findings of the analysis of variance for the three dimensions of Global Competence show that there is equality through values for Knowledge/understanding with years of service. Therefore there is no statistically significant difference (F (3)=1,888, p=0,131> 0,05) of Knowledge/understanding with years of service. However, there is no equality of average values of years of service with the other two dimensions. There is therefore a statistically significant difference in the level of skills and attitude and values with the years of service of the respondents. Specifically in terms of skills is recorded F(3)= 5,005, p=0,002<0,05. For the attitude and the values we have F (3)=3,659, p=0,013<0,05.

Comparisons of average values show that the statistically significant differences in Global Capacity gaps with years of service are located in terms of Skills between the categories of years of service: "0-10" and "11-20" (p = 0,002 <0, 05). This difference shows that the average value of the Skills level for those who have "0-10" years of service is 0.450 points higher than those who have "11-20" years of service and vice versa. In terms of Attitude and values, the differences are located between the categories of years of service: "21-25" and "26 and above" (p = 0,030 <0,05). This difference shows that the average value of the level of

attitude and values for those who have "21-25" years of service is 0,385 points higher than those who have "26 and more" years of service and vice versa.

Correlation of Global Competence with the level of ICT knowledge

One Way Anova analysis was used to check the difference between the mean values of knowledge/understanding, skills and attitudes/values between the categories of additional studies of the participants. The findings of the analysis on variance for the three dimensions of global competence show that there is no equality of average values with the level of ICT knowledge. Therefore, there is no statistically significant difference according to the perceptions of the level of knowledge and understanding, skills and attitude and values with the level of ICT knowledge of respondents. Specifically in terms of knowledge and understanding F (2)= 1,687, p= 0,187> 0,05. For skills F (2)=0, 361, p=0,698> 0.05. Regarding attitude/values we have F (2) = 1,039, p = 0,355> 0,05.

Multiple regression with Knowledge and Understanding as a dependent variable

The control of the effect of the independent variables (Skills, Attitude and values, Gender, Education level, Additional studies, Employment, Years of service) on the dependent variable Knowledge and understanding was done by the analysis of the linear multiple regression. The normality of the dependent variable was first checked with the One Sample Kolmogorov-Smirnov Test according to which a normal distribution follows (p> 0,05). The independent variables (Table 8) affect the dependent variable (p <0,05) and therefore the regression model exists.

Table 8 *Model Variance Control*

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14087,617	7	2012,517	70,088	0,001[b]
	Residual	9820,223	342	28,714		
	Total	23907,840	349			

a. Dependent Variable*: Knowledge and understanding*
b. Predictors: *(Constant), gender, level of education, additional studies, employment relationship, years of service, skills, attitudes/values*

Gender, level of education, additional studies, employment relationship, years of service, skills, attitudes and values explain 58,1% (R2 = 0,581) of respondents' perceptions of knowledge/understanding (Table 9).

Table 9 *Model Summary*[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0,768*	0,589	0,581	5,359	2,045

a. Predictors*: (Constant), gender, level of education, additional studies, employment relationship, years of service, skills, attitudes/values*
b. Dependent Variable: *Knowledge and understanding*

The equation of the regression model is of the form Y = bo + b1x1 + b2x2 + b3x3, the Knowledge/understanding = 7,727-2,211 * Gender + 0,354 * Skills + 0,243 * Attitude/values. Therefore, if gender increases by one unit (woman based on coding) and the other independent variables remain constant, then Knowledge/understanding decreases by 2,211 units. If skills increase by 1 point and the other variables remain constant then knowledge/understanding will increase by 0,354 points. If attitude/values increase by 1 point and the other variables remain constant then knowledge/understanding will increase by 0,243 points. The variable gender seems to be the most important variable as its absolute value is the largest of all the other variables (B=-2,211). The variables (education level, additional studies, employment relationship and years of service) do not affect the dependent variable Knowledge and Understanding (p> 0,05).
The regression control after the completion of the model shows that there is a normal distribution of residues (Figure 1). The Durbin-Watson test = 2,045~2,00 indicates that there is residual independence (Figure 2).

Figure 1 *Residual Distribution Curve*

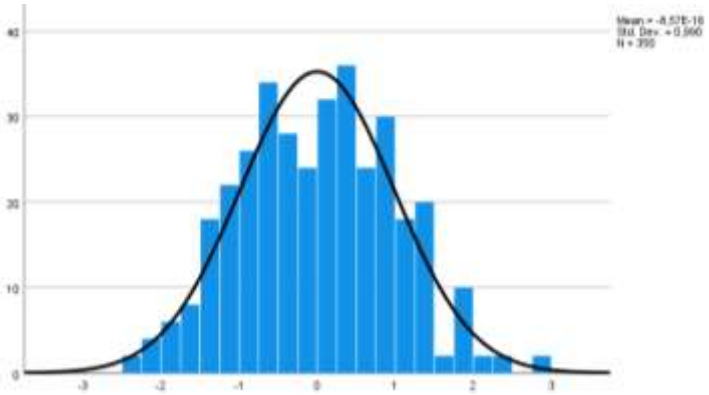
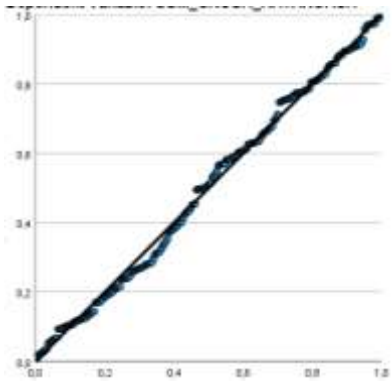
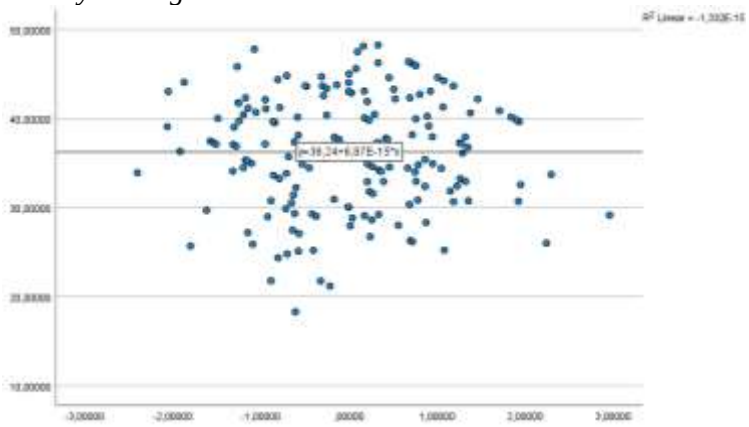


Figure 2 *Control of Normal Residue Distribution*



Homoscedasticity testing shows that the residues are not related to each other (Figure 3).

Figure 3 *Residue Homoscedasticity Testing*



Also, the Pearson correlation test shows that there is no correlation of residue variables (p = 1,000> 0,05). Finally, collinearity testing shows that there is a marginal independence of the variables and therefore the regression model is not affected (VIF <2,00 or 2,00).

Multiple regression with Skills as a dependent variable

The control of the effect of the independent variables (Knowledge/understanding, Attitude/values, Gender, Education level, Additional studies, Employment relationship, Years of service) on the dependent variable Skills was done by the analysis of the linear multiple regression. Initially, the normality of the dependent variable was checked with the One Sample Kolmogorov-Smirnov Test according to which a normal distribution follows (p> 0.05). The independent variables affect the dependent variable (p <0.05) and therefore the regression model exists.

Gender, level of education, additional studies, employment relationship, years of service, knowledge and understanding, attitude and values explain by 66.1% (R2 = 0.661) the perceptions of the respondents about the skills.

The equation of the regression model is of the form Y= bo + b1x1 + b2x2 + b3x3 + b4x4, the Skills = 8,363 + 4,704 * Gender -1,649 * Additional studies + 2,057 * Employment + 0,597 * Attitude/values + 0,7. Therefore, if gender increases by one unit (woman based on coding) and the other independent variables remain constant, then skills increase by 4,704 units. If additional studies increase by 1 point (postgraduate based on coding) and the other variables remain constant then skills will increase by 1,649 points. If the employment relationship increases by one unit (non permanent/headmaster based on the coding) then skills will increase by 2,057 units. If attitude and values increase by 1 point and the other variables remain constant then skills will increase by 0,597 points. If knowledge/understanding increase by 1 point and the other variables remain constant then skills will increase by 0,743 points. The variable gender seems to be the most important variable as its value is the largest of all the other variables (B=4,704). The variables employment relationship (2,057) and additional studies (-1,649) are also important. The variables (level of training and years of service) do not affect the dependent variable skills (p> 0.05) (Table 10).

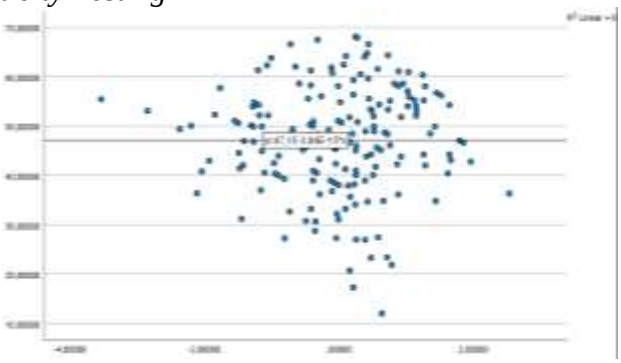
Table 10 *Coefficients*[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-8,363	3,041		-2,750	,006		
	Gender	4,704	,996	,152	4,723	0,001	,937	1,067
	Level of education	1,093	,877	,040	1,246	,214	,921	1,086
	Additional studies	1,649	,470	-,110	-3,510	0,001	,997	1,003
	Employment relationship	2,057	,727	,096	2,829	,005	,853	1,173
	Years of service	-,148	,262	-,019	-,566	,572	,861	1,161
	Attitudes/values	,597	,066	,373	8,984	0,001	,564	1,772
	Knowledge/understanding	,743	,067	,461	11,042	0,001	,557	1,795

a. Dependent Variable: *skills*

The regression control after the completion of the model shows that there is a normal distribution of residues. The Durbin-Watson test = 2,045~ 2,00 indicates that there is residual independence. Homoscedasticity testing shows that the residues are not related to each other (Figure 4).

Figure 4 *Residue Homoscedasticity Testing*



Also, the Pearson correlation test shows that there is no correlation of residue variables (p = 1,000> 0.05) (Table 11).

Table 11 *Correlations*

		Unstandardized Predicted Value	Standardized Residual
Unstandardized Predicted Value	Pearson Correlation	1	,000
	Sig. (2-tailed)		1,000
	N	350	350
Standardized Residual	Pearson Correlation	,000	1
	Sig. (2-tailed)	1,000	
	N	350	350

Finally, collinearity testing shows that there is independence of the variables and therefore the regression model is not affected (VIF <2.00).

Multiple regression with Attitude/values as a dependent variable

The control of the effect of the independent variables (Knowledge/understanding, Skills, Gender, Education level, Additional studies, Employment relationship, Years of service) on the dependent variable attitude/values was done by the analysis of the linear multiple regression. The normality of the dependent variable was first checked with the One Sample Kolmogorov-Smirnov Test according to which a normal distribution follows (p>0,05). The independent variables affect the dependent variable (p <0,05) and therefore the regression model exists.

Gender, level of education, additional studies, employment relationship, years of service, knowledge and understanding and skills explain by 53,4% (R2 = 0,534) the participants' perceptions of Attitude and values (Table 12).

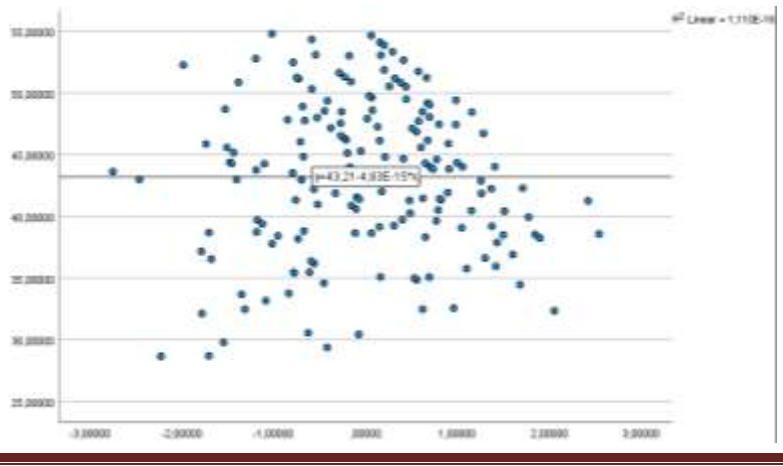
Table 12 *Model Summary*[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0,737*	0,543	0,534	5,682	1,895

a. Predictors: *(Constant), gender, education level, additional studies, employment relationship, years of service, knowledge/understanding, skills*
b. Dependent Variable*: attitude/values*

The equation of the regression model is of the form Y=bo + b1x1 + b2x2, the Attitude and the values = 18,506 + 0,273 * Knowledge and understanding +0,320 * Skills. Therefore, if knowledge/understanding increase by one point and the other independent variables remain constant, then attitude/values will increase by 0,273 points. If skills increase by one point and the other variables remain constant then attitude/values will increase by 0,320 points. The variables (Gender, Level of education, Additional studies, Employment relationship and Years of service) do not affect the dependent variable attitude/values (p>0,05).
The regression control after the completion of the model shows that there is a normal distribution of residues (figure 5). The Durbin-Watson test = 1,895 <2,00 shows that there is residual independence.

Figure 5 *Residue Homoscedasticity Testing*



Also, the Pearson correlation test shows that there is no correlation of residue variables (p=1,000>0.05). Finally, collinearity testing shows that there is independence of the variables and therefore the regression model is not affected (VIF <2,00).

IV. Discussion

Global competence is a multidimensional construct that has led to many questions concerning the number of its dimensions and how to measure them (Deardorff, 2006; Fantini & Tirmizi, 2006; Li, 2013;Van de Vijver & Leung, 2009). According to relevant bibliography, there are different approaches regarding global competence dimensions. For instance, Fantini (2009) argues that it includes knowledge, skills, attitude and awareness (Fantini, 2009), Olson and Kroeger (2001) propose substantive knowledge, perceptual understanding and intercultural communication, while Morais and Ogden (2011) focus on social responsibility and global civic engagement.

However, for the needs of the present study, Liua, Yinb and Wuc's global competence scale was chosen. The elaboration of this research demonstrates important findings regarding the basic dimensions of global competence.

To begin with, regarding teachers' perceptions on knowledge and understanding, the average value for the global knowledge dimension is 3,53 (a lot), for the understanding of globalization 3,81 (a lot) and for the international academic knowledge 3,47 (enough). In total for the dimension of knowledge/understanding the average value is 3,62 (a lot).

Regarding the participants' answers for the Skills factors, the average value for the use of tools is 3,90 (a lot), for cross-cultural communication 3,68 (a lot) and for international academic knowledge 2,67 (enough). Overall for the Skills dimension the average value is 3,37 (enough).

Finally, regarding the answers of the respondents for the factors of attitude/values, the average value for intent to interact is 3,72 (a lot), for Open Attitude 4,38 (a lot) and for the values 3,82 (a lot). In total for the dimension of attitude/values the average value is 3,93 (a lot). In terms of global competence as recorded by the respondents' answers in all three dimensions (nine factors) the average value is 3,62 (a lot).

In addition, the control of the Pearson correlation coefficient of the nine factors for global competence shows a statistically significant positive correlation between them, while the control of the three-dimensional Pearson correlation coefficient for global competence shows a statistically significant positive correlation between them at relatively high levels: knowledge/understanding with skills (r=0,727) and attitude/values (r=0,647) and skills with attitudes/values (r=0,704).

A key question of the present study was also the correlation of global competence with various variables. This correlation was achieved either by using T-test independent samples or by One Way Anova analysis. Gender seems to vary participants' responses as for skills the mean values for men and women differ statistically significantly [t (348) = - 2,911, p-value = 0,004 <0,05] as women agree to a greater extent (mean= 3,45) than men (mean =3,11).

Regarding the relationship between the level of education (primary and secondary) and the individual dimensions of global competence, there are statistically significant differences in all dimensions. Specifically, secondary education teachers show a greater degree (mean= 3,78) of knowledge and understanding compared to primary education teachers (3,40), secondary education teachers agree to a greater degree (mean = 3,56) in relation to the teachers of primary education (mean = 3,11) for skills and the teachers of secondary education agree to a greater extent (mean = 4,06) than the teachers of primary education (mean = 3,74) for attitude and values.

In addition, a statistically significant difference in knowledge/understanding, skills and attitudes/values with the additional studies of the respondents was observed through the One Way Anova analysis. Specifically, for knowledge/understanding we have F (3) = 6,590, p = 0,000 <0,05, for skills F (3) = 24,471, p = 0,000 <0,05 and for attitude/values we have F (3) = 3,630, p = 0,013 <0,05.

Similarly, a statistically significant difference was observed between knowledge/ understanding, skills and attitude/values with the employment relationship of the respondents (permanent, non permanent, headmasters). Specifically, in terms of knowledge and understanding, F (2) = 4,944, p = 0,008 <0,05, for skills F (2) = 8,993, p = 0,000 <0,05 and for attitude /values we have F (3) = 4,025, p = 0,019 <0,05. This difference shows that the average value of the level of knowledge /understanding for those who are "Permanent" is 0,490 points lower than those who are "Headmasters" and vice versa.

Regarding skills, the differences are located between the categories: a) "Permanent" and "not permanent" (p = 0,001 <0,05). This difference shows that the average value of the skill level for those who are "Permanent" is 0,435 points lower than those who are "not permanent" and vice versa. b) "Permanent" and "headmaster" (p = 0,016 <0,05). This difference shows that the average value of the skill level for those who are "Permanent" is 0,532 points lower than those who are "headmasters" and vice versa. Regarding the Attitude and the values, the differences are located between the categories: "Permanent" and "not permanent" (p = 0,038 <0,05). This difference shows that the average value of the skill level for those who are "Permanent" is 0,222 points lower than those who are "not permanent" and vice versa.

Finally, there is a statistically significant difference in the level of skills and attitude and values with the years of service of the respondents. Specifically in terms of skills: F (3) = 5,005, p = 0,002 <0,05. For the attitude and the values: F(3) = 3,659, p = 0,013 <0,05.

In an intensively diverse and globally connected world, it is important for the societies and the schools to have teachers who possess intercultural and global competencies, a body of knowledge about world regions, cultures and global issues, and the skills and dispositions to engage responsibly and effectively in a global environment (Kopish, 2016). Similarly, the importance of this competence is highlighted by the international discourse as well. Thus, according to the UNESCO (2020) the foundation of education is learning to know, learning to be, learning to do and learning to live together globally.

Researchers also recognise the importance of global competence at the evolution of multicultural societies (Deardorff, 2011; Hunter, 2004) especially because of the flattened global economy and changing demands of work, the unprecedented global migration, the climate instabiltiy and environmental stewardship (Mansilla & Jackson, 2011).

However, we should also bear on mind that measuring one's competence is the first step, the stage of self-reflection, the starting point, where teachers are encouraged to explore their own values and norms from which they undestand their world. This process should move on to the next step, that of critical awareness and dialogical environment where everybody who is involved in the school community can respectfully make critical sense of their experiences and learn from each other (Trede, Bowles, & Bridges, 2013).

In addition, teachers are those who are called to teach students and help them flourish their global competencies. So there are many more factors that should also be taken into consideration. How well trained are teachers in order to teach global competence? What practices and strategies do they implement in classes?

A qualitative research conducted in Greece (Karanikola, Katsiouli, & Palaiologou, 2022) reveiled that teachers believe that education does not seem to have sufficient results at students' developing of this competence, mainly because they are not sufficiently trained in order to apply effective practices. Similarly, Kerkhoff and Cloud's (2020) research show that despite the fact that teachers value and desire to enact globally competent teaching, they need right training and practical direction for classroom effectiveness. Towards this direction, Parmigiani, Jones, Kunnari and Nicchia (2022) support that global competence topics should be faced mainly during workshops, seminars, project-based learning. Constructive discussion, texts, stories, videos, team games, students' active engagement are some of the most appropriate practices as well (Karanikola, Katsiouli, & Palaiologou, 2022; OECD, 2018; Van Werven, Coelen, Jansen, & Hofman, 2021). Finally, teachers can use differentiated curricula or develop innovative and interdisciplinary curricula, alter the traditional method and process, enrich their resources and the required learning activities (Palaiologou & Karanikola, 2021).

V. Conclusion

This research comes to shed light on teachers' conceptualizations, understandings, skills, attitudes and values of global competence. In addition and given that no other similar research has been conducted so far based on this scale and in this geographical area, it could be a cause for fruitful dialogue, reflection and further research. At the same time to act as a stimulus for the orientation of the contemporary teachers' role and the initiatives that the official state should take for establishing the right conditions (such as teachers' training, new curricula, appropriate policies in alignment with the international discourse in all levels of education) for global competences development.

However, as the literature proves, it is inevitable for each study to come up against limitations, no matter how well-prepared it may be (Babbie, 2011). This particular research is no exception. Its main limitation is

that the results cannot be generalized for the whole population. The inquiry was carried out in the region of Western Greece in a specific time period. Thus, a survey that includes a sample with a larger geographical distribution would provide a comparative and safer view of the topic. Finally, the combined use of a quantitative and a qualitative methodological approach could also identify additional aspects and enrich the research with new or supplementary findings.

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