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seeking for their knowledge

improvement regarding intercultural education

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Greek secondary school teachers' seeking for their knowledge improvement regarding intercultural education

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Abstract

The present paper analyzes the results of an empirical research among Greek Secondary Education teachers. The empirical research analyses Greek secondary school teachers' seeking for their needs concerning knowledge improvement regarding intercultural education.

The evaluation of teachers' attitudes on knowledge improvement regarding intercultural education is performed using the Correspondence Factor Analysis. The sample consists of 130 respondents whereas 105 are women and 25 men. Of the 130 respondents, 95 are education executives and 35 are just Greek Secondary Education teachers.

The results made it evidence that there is strong group of respondents consider that they are quite interested in improving their knowledge in Psychosocial support for students, Cultivation of a collective spirit, Strengthening the school culture, Organization of language support for foreign students, Exploitation of error in language teaching as well as Teaching Greek as a second or foreign language, knowledge improvement regarding intercultural education related to Utilization of New Technologies in the teaching of Greek as a mother tongue and as a foreign language, Didactic utilization of New Technologies, Personalization of teaching, Differentiation of teaching in the multicultural school, School unit self-assessment as well as in Evaluation of school performance, whereas there is another group of respondents that is neutral in improving their knowledge regarding intercultural education.

Keywords: Greek, teachers, knowledge, improvement, intercultural, education.

Theoretical Framework

Intercultural education became a dispute of a major importance in Europe as a result of the growing ethnic diversity of the population as a consequence of immigration (Leeman & Ledoux, 2003; Karamitrou, 2019a; Karamitrou, 2019b; Karamitrou, 2020a;

Karamitrou, 2020b). According to Sadowski (1999) supported that multiculturalism obliges a policy regarding different cultures based on rules on democracy.

Safovona (2014) argued that is important intercultural communication training not only for educators but also for individuals to be provided. She maintained that this is one of the most appropriate strategies for intercultural channel of communication. Bedeković (2017) debated that school is expected to provide for an education wherein individuals could enjoy general development which would be in a line with the function of knowledge skill and attitude achievement required for the multicultural Europe. Driessen (2000) put an emphasis on the necessity of in-service courses for teachers related to intercultural education. Thapa (2020) supported that it is possible that teachers may lack of knowledge regarding intercultural communication and this fact could limit their practice and turn into an obstacle for an intercultural competence development and a barrier in the profession.

Leeman & Ledoux (2003) and Karamitrou, 2020a; Karamitrou, 2020b) supported that teachers must have competencies in order to prepare students for citizenship in multicultural society. Dănescu (2015) argued that these competencies and skills appropriate to specific diversity are named intercultural competencies or capacity of interculturality. Effective intercultural education is also related to teachers' capabilities to associates different characteristics to different intercultural group (Anastasiadou & Kofou, 2013a). In addition Bedeković (2017) paid attention to respect ion and acceptance of identities of others.

Cucoş (2000) distinguished intercultural competence into three dimensions: the cognitive competence dimension related to the capacity of understanding the culture and customs and knowing the mother language of individuals their history, cultural heritage, institutions etc., the emotional competence dimension related to intercultural adjustment and acceptance and finally operational competence regarding the certain appropriate intracultural behavior. Mother language of individuals is of a major importance (Thapa et al., 2016).

Consequently the national educational policy regarding intercultural education must develop educational programs in order to prepare tethers for a multicultural education where the respect of an individual culture, customs, ethnic, religion, language, human dignity and freedom is instituted. It is common knowledge that education policies regarding intercultural education is not enough if teachers themselves do not want to create an identity and professionalism of a teacher correspond efficiently in an

intercultural education. Thus the resent study examines Greek secondary school teachers' seeking for their needs concerning knowledge improvement regarding intercultural education.

Purpose of the study

The scope of the current paper is to define the degree to which Greek secondary school teachers' want to improve among others their knowledge regarding teaching Greek as a second or foreign language, Didactic utilization of New Technologies, Issues of organization and administration of the school unit, School unit self-assessment, Legal framework for the multicultural school, Enhancing the creativity of teachers, Managing cultural diversity at school, Integration of foreign students in the school environment, Differentiation of teaching in the multicultural school, Personalization of teaching Organization of language support for foreign students, Psychosocial support for students, School delinquency problems, Conflict management, Relationships between teachers and parents.

Participants

Regarding 130 respondents' gender, 105 are women, (80.8%) and 25 men (19.2%). Of the 130 respondents, 95 (73.1%) are education executives and 35 (26.9%) are not. In terms of years of service, 16 have from one to five years of service, 20 (15.4%) from 6 to 10 years of service, 19 (14.6%) from 11 to 15 years of service, 28 (21.5%) from 16 to 20 years, 30 (23.1%) from 21 to 25 years and finally, 17 (13.1%) from 26 to 30 years. For 53 (40.8%) respondents their school or schools in their area of responsibility belong to an urban center area, for 25 (19.2%) in a suburb area, for 28 (2.5%) in a semi-urban area, for 16 (12.3%) in rural and 8 (6.2%) in inaccessible.

Methodology

In the course of the research, absolute and relative frequencies were recorded for the 29 statement items/variables and 4 variables referring to demographic characteristics, using classic statistics methods. These 29 statement variables were then classified into three classes each, resulting in all of the data to be described from 88 classes, namely from a logical table (0-1). Moreover, the demographic variable gender was classified into two classes (man-woman), the variable executive was classified into two classes

(yes-no), the variable years of service was classified into six classes ([0,5], [6-10], [11.15], [16,20], [21,25], [26,30]), the variable school area of responsibility was classified into four classes (urban center area, suburb area, semi-urban area, rural area). By means of the categorization of the variables a double entry table was created for the relative and absolute frequencies with dimensions 88x88. This table is a Burt table and each column in this Burt table is considered a vector with a dimension of 88. The Burt table allowed for each class and each variable to be surveyed individually and then for the classes of variables to be cross-examined.

The objective being to determine these relations employed were the nxn double entry tables, the Burt tables containing all the classes, to which variables have been divided, in their columns and lines. Data Analysis techniques or Multivariate/Multidimensional Statistical Analysis without models were employed for the processing of the data, since this paper necessitated that no a prior hypothesis be made. The approach consisting in an a posteriori categorization of Greek Secondary Education teachers' opinions and attitudes, as such is presented via the questionnaires, is accelerated with the help of factorial axes, namely the composite factors, and the factorial levels providing a packed superintendent vision.

From the Data Analysis methods, referred to earlier, Correspondence Factor Analysis technique was employed to analyse the data. Correspondence Factor Analysis technique allows for the simultaneous statistical processing of categorized qualitative and quantitative variables (Benzecri, 1973; Karapistolis, 2015; Papadimitriou, 1994; Anastasiadou, 2016). This method leads to data reduction and a smaller number of new composite factors are created (Papadimitriou, 1994). These composite factors, independent allow the graphic representation of the items.

The indexes contribution and cohesion are then presented, which constitute the criteria for the selection of the variables for constructing and interpreting the axes and, consequently, the factorial levels (Drosos, 2004; Papadimitriou, 2007).

1. The contribution of a point, line and column, towards the construction of a composite factorial axis. If λ_k is the total inertia along axis k and if λ_k is the total inertia along part of axis k and $f_i F_k^2(i)$ is the inertia of point i in cloud N_I on each axis k, then contribution, which is symbolized as $Ctr_k(i)$ is given from relation (4),

$$Ctr_k(i) = \frac{f_i F_k^2(i)}{\lambda_\kappa}$$ (4)   where $\sum_{i=1}^{n} Ctr_k(i) = 1$ (5) for each axis k (Drosos, 2004;

Papadimitriou, 2007)..

The contribution of points j in cloud N_J is correspondingly defined (Drosos, 2004;

Papadimitriou, 2007). As defined, contribution gives the inertia percentage of the

point with respect to the inertia explained by the factorial composite axis.

Since the contribution index reveals the points that principally contribute towards

the construction of the axis, we seek points with high $Ctr_k(i)$ and on which the

interpretation of the axis may possibly rest, a fact that is significant for the

interpretation of the phenomenon (Drosos, 2004; Papadimitriou, 2007).

2. The square of cosine $\cos_k^2(i)$ (or relevant contribution) signifies the representation

   quality of a point by the composite factorial axis and essentially depicts a form of

   correlation between point i and factorial axis k, while it is symbolized as $Cor_k(i)$

   and given from relation (6), $Cor_k(i) = \dfrac{F_k^2(i)}{d^2(G,i)} = \cos^2 \omega$ (6), where $d^2(G,i)$ is the

   distance of i from the centroid (center of gravity) (Drosos, 2004).

   High value for $Cor_k(i)$ means a small angle ω namely high correlation of point i

   with the axis, that is good quality for the projection of i with the axis, namely good

   projection quality of i axis. Pursuant to the above, index $Cor_k(i)$ expresses the

   percentage of inertia at point i which is interpreted by axis k(Drosos, 2004;

   Papadimitriou, 2007).

   Points with very high Cor also exhibit high Ctr. In case where they exhibit high

   values for Cor and low values for Ctr this means that they have good projection

   quality on the axis but do not participate in the construction there of (Papadimitriou,

   2007). In case where they exhibit low values for Cor and high values for Ctr this

   means that they contribute towards the construction of the axis but are better

   projected on some other axis towards the construction of which they may potentially

   contribute more (Drosos, 2004; Papadimitriou 2007; Anastasiadou, 2016).

Results

The indexes employed to interpret the results of the analysis are the well-known indexes

"inertial", "correlation" and "contribution" (Benzécri, 1980; Papadimitriou, 1994).

These indexes allow one to immediately distinguish the most important and determinative items/ variables or objects that contribute to the creation of factorial axes. The results of this factorial analysis were interpreted by the indexes inertia (criterion 1), which is explained by each factorial axis and correlation (criterion 2) and contribution (criterion 3).

The data table analysis using AFC initially produces Table 1, which presents the eigenvalues of the Burt table as well as the inertia percentages for each factorial axis. Table 1 offers one the capacity to distinguish the number of the most significant factorial axes, which are the most appropriate in order to interpret the results. The inertia percentage of each factorial axis allows one to know the significance percentage expressed by each one.

According to the values complemented by the histogram (Table 1), the significance percentage of the first factorial axis is 62.15%, while that of the second amounts to 13.99%, the third 11.40%, the fourth 3.67% etc. The total information offered by the 12 factorial axes amounts to 98.62%, as can be seen from the table below (Table 1). It is notable that the first three axes amounts to 87.54%, a percentage extremely satisfactory inn order the data to be interpreted by these first three axes.

Table 1: Inertia – Eigenvalues

TOTAL INERTIA 0,40344				
AXIS	INERTIA	%INTERPRETATION	SUM	| EIGENVALUES HISTOGRAM
01	0,2507211	62,15	62,15	|**************************************
02	0,0564418	13,99	76,14	|*************
03	0,0460002	11,40	87,54	|********
04	0,0147891	3,67	91,20	|***
05	0,0131107	3,25	94,45	|*
06	0,0045687	1,13	95,59	|*
07	0,0031509	0,78	96,37	|*
08	0,0028344	0,70	97,07	|*
09	0,0019269	0,48	97,55	|*
10	0,0016851	0,42	97,96	|*
11	0,0014490	0,36	98,32	|*
12	0,0012076	0,30	98,62	|*

Founded on the cumulative frequency the first three factorial axes interpret 87.54% of the total data variance (Table 2). This percentage is deemed satisfactory to interpret the data (Karapistolis, 2015). Moving on and from the table of the results of the factorial analysis of correspondences, pursuant to the aforementioned criteria that were chosen (inertia, correlation and contribution), the variables contributing to the shaping of the

two first factorial axes were detected, using MAD software (Karapistolis, 2000). The abovementioned variables are deduced in compliance with two criteria, correlation ($Cor \geq 200$, criterion 2) and contribution ($Ctr \geq \frac{1000}{88} \approx 11.36364 \approx 11.4$, criterion 3) (Karapistolis, 2015).

Interpretation of the first factorial axis e_1: More specifically, based on the responses by the respondents and as follows from factor analysis, the first axis – factor e_1, with eigenvalue 0.2507211 explaining 62.15% of the total variance is constructed from classes E28.2, E26.2, E11.2, E16.2, E5.2, E19.2, E27.2, E29.2, E4.2, E12.2, E23.2, E21.2, E14.2 and E24.2. More specifically, the first factorial axis e_1 is constructed from those variable classes that project a neutral attitude with respect to knowledge improvement regarding intercultural education (Figure 1). We initially come across the natural respondents' views with respect to items named Conflict management (E28.2), Psychosocial support for students (E26.2), Cultivation of a collective spirit (E11.2), Enhancing the creativity of teachers (E16.2), Didactic utilization of New Technologies (E5.2), Cultivation of anti-racist spirit in school (E19.2), School delinquency problems (E27.2), Relationships between teachers and parents (E29.2), Evaluation of school performance (E4.2), Formation of a collaborative climate (E12.2), Configuration of educational material (E23.2), Differentiation of teaching in the multicultural school (E21.2) School unit self-assessment (E14.2), Configuration and adaptation of the curriculum (E24.2) related to knowledge improvement regarding intercultural education (Figure 1).
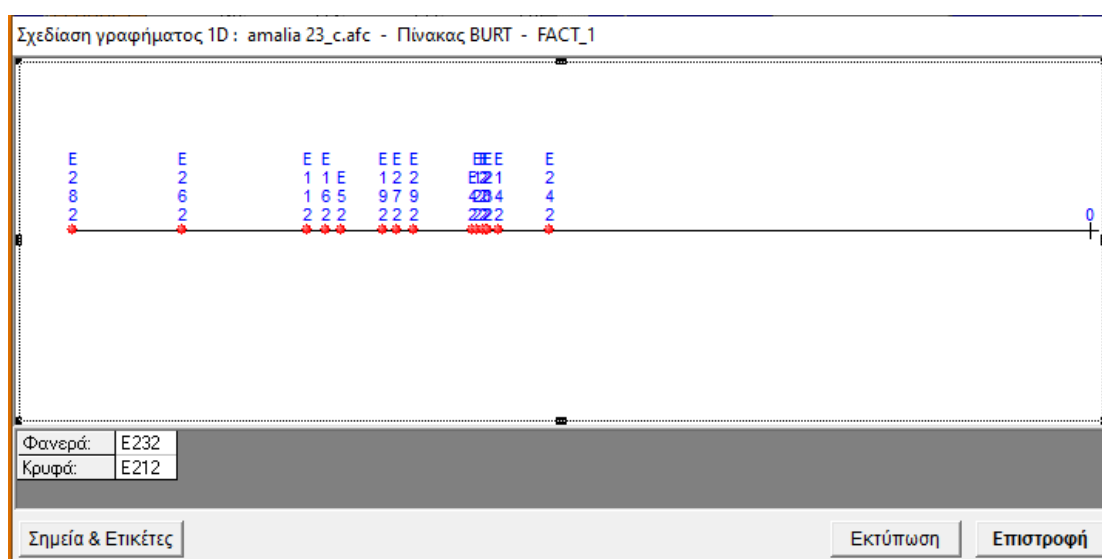

Figure 1: 1st factorial axis

Interpretation of the second factorial axis e₂: More specifically, based on the answers given by the respondents and as followed from factor analysis, the second axis – factor e_2, with eigenvalue 0.0564418 explaining 13.99% of total variance is constructed from classes E22.1, E21.1, E11.1, E10.1, E14.1, E4.1, E13.1, E17.1, E25.1, E2.1, E18.1, E26.1, E10.1, E11.1, E15.1, E3.1 (Figure 2).

To the left of the second factorial axis e_2 one comes across those variable classes projecting the positive attitudes with respect to construct to knowledge improvement regarding intercultural education.

More specifically, quoted on the left are the respondents who stated that they are seeking for their knowledge improvement regarding intercultural education related to Personalization of teaching (E22.1), Differentiation of teaching in the multicultural school (E21.1), Cultivation of a collective spirit (E11.1), Strengthening the school culture (E10.1), School unit self-assessment (E14.1), Evaluation of school performance (E4), Decision making models (E13.1), Managing cultural diversity at school (E17.1), Organization of language support for foreign students (E25.1), Exploitation of error in language teaching (E2.1), Intercultural activities in the multicultural school (E18.1), Psychosocial support for students (E26.1), Strengthening the school culture (E10.1), Cultivation of a collective spirit (E11.1), Legal framework for the multicultural school (E15.1) as well as related to Intercultural education regarding Objective principles (E3.1) (Figure 2).
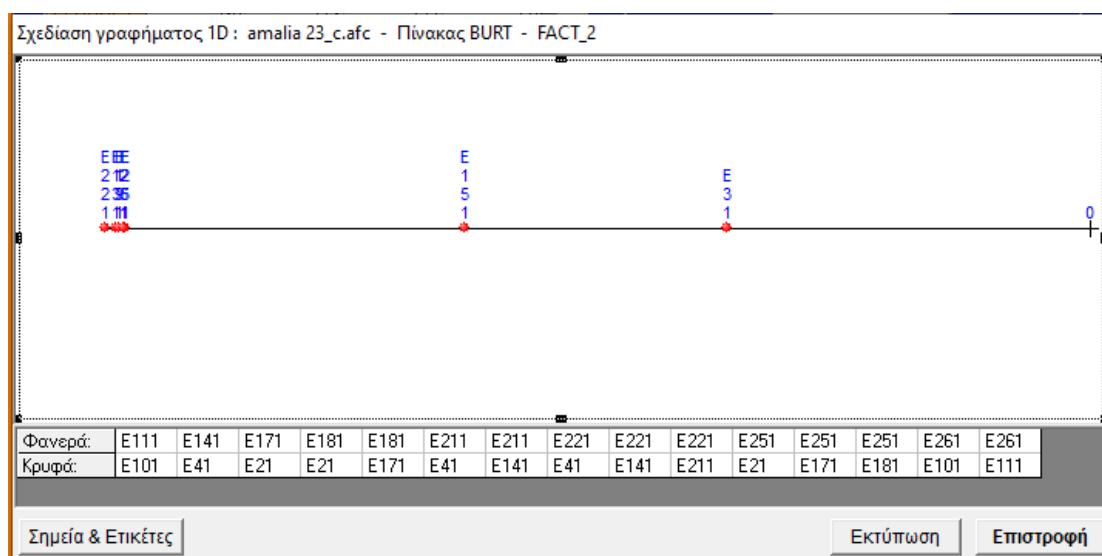

Figure 2: 2ⁿᵈ factorial axis

Interpretation of the third factorial axis e₃: More specifically, based on the responses and as ensued from factor analysis, the third axis-factor e_3, with eigenvalue 0.0460002 explaining 11.40% of total variance and constructed from classes E26.1, E11.1, E10.1, E25.1, E2.1, E1.1, E6.1, E5.1, E22.1, E21.1, E14.1 and E4.1 (Figure 3).

More specifically, in the third factorial axis e_3 and to its left one comes across those variable classes that project the positive attitude with respect to construct knowledge improvement regarding intercultural education. More specifically, to the left are placed variable classes signifying that respondents did not seeking for their knowledge improvement regarding intercultural education related to Psychosocial support for students (E26.1), Cultivation of a collective spirit (E11.1), Strengthening the school culture (E10.1), Organization of language support for foreign students (E25.1), Exploitation of error in language teaching (E2.1) as well as Teaching Greek as a second or foreign language (E1.1), while to the right are placed variable classes signifying that the respondents did not advice seeking for their knowledge improvement regarding intercultural education related to Utilization of New Technologies in the teaching of Greek as a mother tongue and as a foreign language (E6.1), Didactic utilization of New Technologies (E5.1), Personalization of teaching (E22.1), Differentiation of teaching in the multicultural school (E21.1), School unit self-assessment (E14.1) as well as Evaluation of school performance (E4.1) (Figure 3).
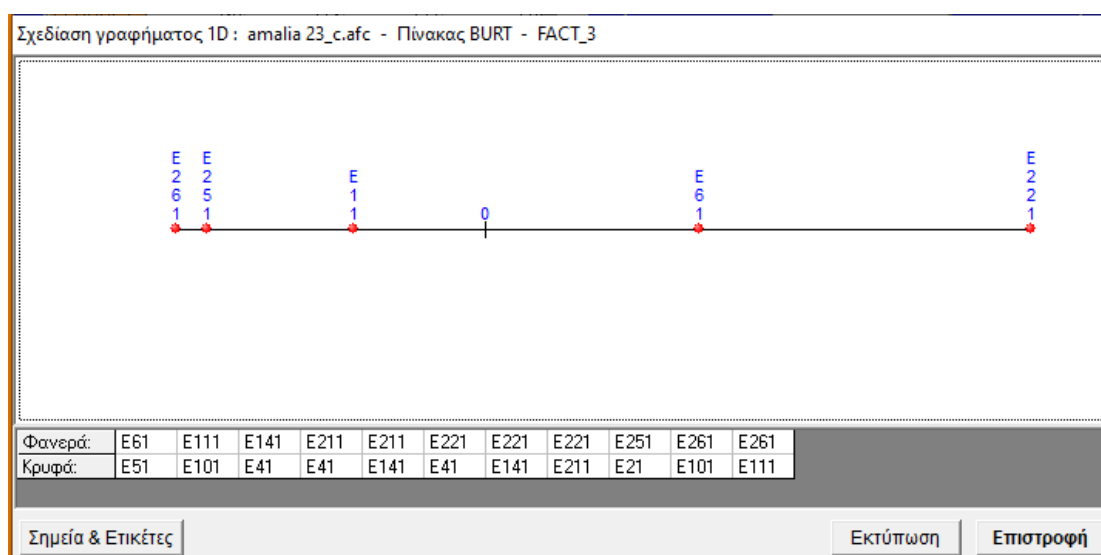

Figure 3: 3rd factorial axis

The first factorial level $e_1 \times e_2$: The variables which are most significant for the first factorial level $e_1 \times e_2$ and pursuant to the criteria of inertia, contribution and correlation are analysed in what follows.

The first factorial level $e_1 \times e_2$ (Figure 4) interprets 76.14% of total inertia– information, a satisfactory percentage.

The first factorial axis juxtaposes the extreme cases and the second those in-between of the extreme ones.

On the first factorial level and at the second quadrant $\left(e_1+, e_2-\right)$ and third quadrant (e_1-, e_2-) and on either side of the first factor axis that group of respondents may be distinguished which do not have a crystallized view with respect items named Psychosocial support for students (E26.2), School delinquency problems (E27.2), Conflict management (E28.2), Relationships between teachers and parents (E29), Didactic utilization of New Technologies (E5.2), Enhancing the creativity of teachers (E16.2), Cultivation of anti-racist spirit in school (E19.2), Evaluation of school performance (E4.2), School unit self-assessment (E14.2), Formation of a collaborative climate (E12.2), Integration of foreign students in the school environment (E20.2), Personalization of teaching (E22.2), Configuration of educational material (E23.2) and Configuration and adaptation of the curriculum (E24.2) (Figure 4).

In the third quarter (e_2-, e_3-) and in the center down group of respondents may be distinguished which a positive view with respect items named Intercultural activities in the multicultural school (E18.1), Cultivation of anti-racist spirit in school (E19.1), Decision making models (E13.1), Personalization of teaching (E22.1), Differentiation of teaching in the multicultural school (E21.1), Organization of language support for foreign students (E25.1), Psychosocial support for students (E26.1), Managing cultural diversity at school (E17.1), Intercultural education: Objective principles (E3.1), Legal framework for the multicultural school (E15.1), Evaluation of school performance (E4.1), Exploitation of error in language teaching (E2.1), Strengthening the school culture (E10.1), Cultivation of a collective spirit (E11.1) and School unit self-assessment (E14.1).
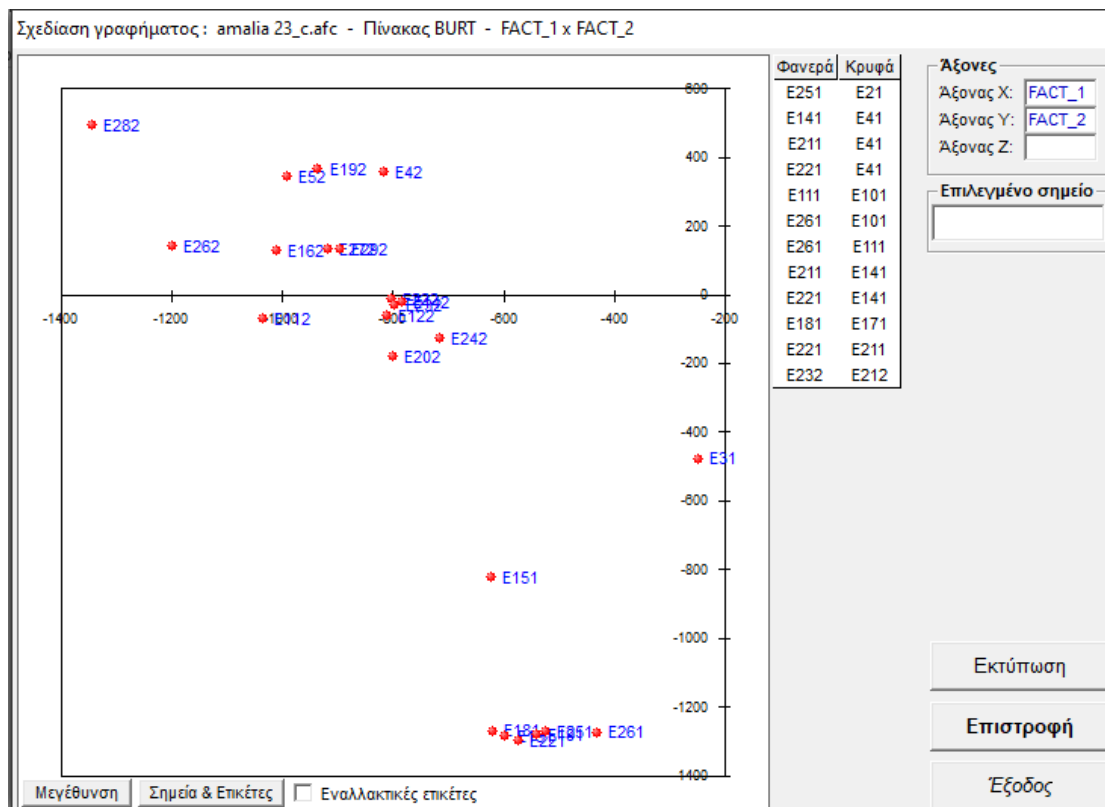
Figure 4: *First factorial level* $e_1 \times e_2$

The second factorial level $e_1 x e_3$ **:** The second factorial level $e_1 x e_3$ (Figure 5) interprets 73.55% of total inertia – information, a satisfactory percentage.

In the second quadrant, $(e_1 -, e_3 +)$ one finds that group of respondents who have a positive attitude towards construct knowledge improvement regarding intercultural education and on account of this they stated that they are not seeking for Utilization of New Technologies in the teaching of Greek as a mother tongue and as a foreign language (E6.1), Evaluation of school performance (E4.1), School unit self-assessment (E14.1), Differentiation of teaching in the multicultural school (E21.1) and Personalization of teaching (E22.1) (Figure 5).

Between the second quadrant, $(e_1 -, e_3 +)$ and third quadrant, $(e_1 -, e_3 -)$ and on either side of the first factor axis that group of respondents may be distinguished which have neutral attitudes towards the items named Psychosocial support for students (E26.2), School delinquency problems (E27.2), Conflict management (E28.2), Relationships between teachers and parents (E29.2), Cultivation of a collective spirit (E11.2), Formation of a collaborative climate (E12.2), School unit self-assessment (E14.2), Enhancing the creativity of teachers (E16.2), Cultivation of anti-racist spirit in school (E19.2), Integration of foreign students in the school environment (E20.2),

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Differentiation of teaching in the multicultural school (E21.2), Configuration of educational material (E23.2) and Configuration and adaptation of the curriculum (E24.2).

Finally, in the third quadrant, (e_1-, e_3-) there is a group of respondents who have a positive attitude towards the items named Strengthening the school culture (E10.1), Cultivation of a collective spirit (E11.1), Differentiation of teaching in the multicultural school (E21.1), Organization of language support for foreign students (E25.1) and Psychosocial support for students (E26.1) (Figure 5).
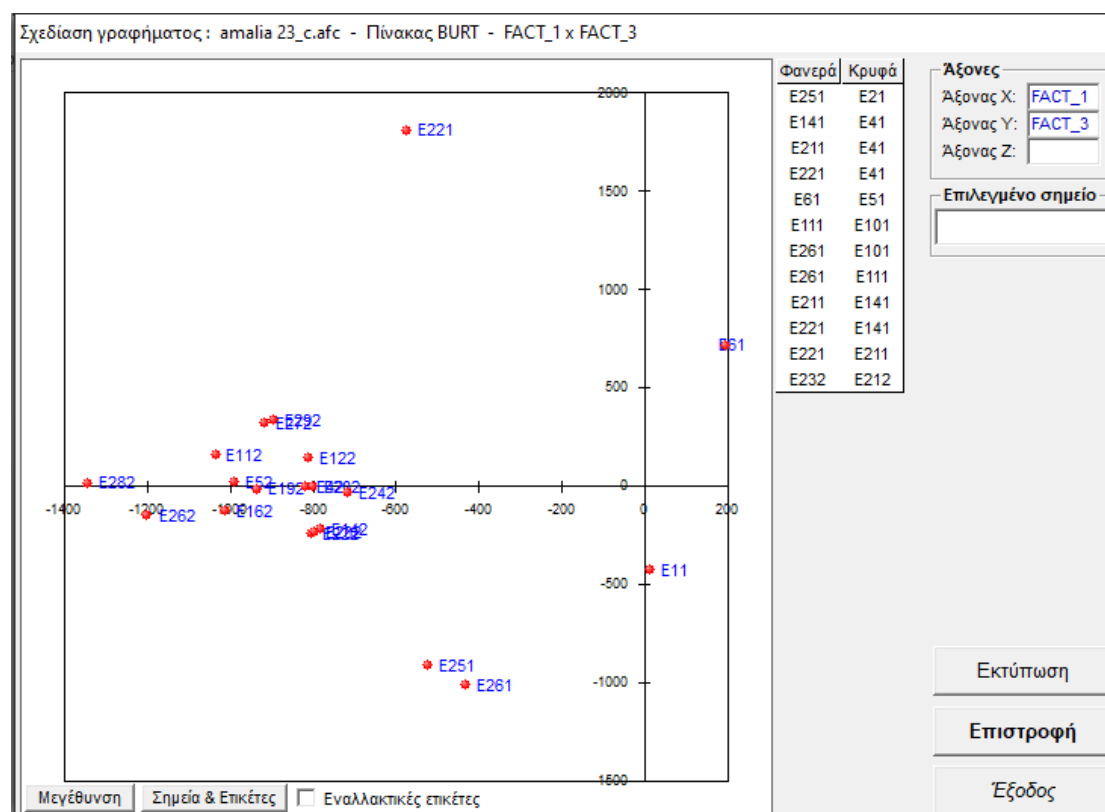

Figure 5: *Second factorial level $e_1 x e_3$*

The third factorial level $e_2 x e_3$: The third factorial level $e_2 x e_3$ *(Figure 6)* interprets 25.39% of the total inertia-information, a satisfactory percentage. In the second quadrant (e_2+, e_3-) one comes across that distinct group of respondents which has a positive view regarding the role of Differentiation of teaching in the multicultural school (E21.1), Personalization of teaching (E22.1), Evaluation of school performance (E4.1), School unit self-assessment (E14.1), Utilization of New Technologies in the teaching of Greek as a mother tongue and as a foreign language (E6.1), Didactic utilization of New Technologies (E5.1), Decision making models (E13.1), Legal framework for the multicultural school (E15.1) and Cultivation of anti-racist spirit in

school (E19.1) as their knowledge improvement elements regarding intercultural education. In the third quadrant (e_2-, e_3-) one comes across that distinct group of respondents which has a positive view regarding the role of Cultivation of a collective spirit (E11.1), Intercultural activities in the multicultural school (E18.1), Managing cultural diversity at school (E17.1), Organization of language support for foreign students (E25.1), Exploitation of error in language teaching (E2.1), Psychosocial support for students (E26.1), Cultivation of a collective spirit (E11) and Strengthening the school culture (E10) on the topic of their seeking for their knowledge improvement elements concerning intercultural education (Figure 6).
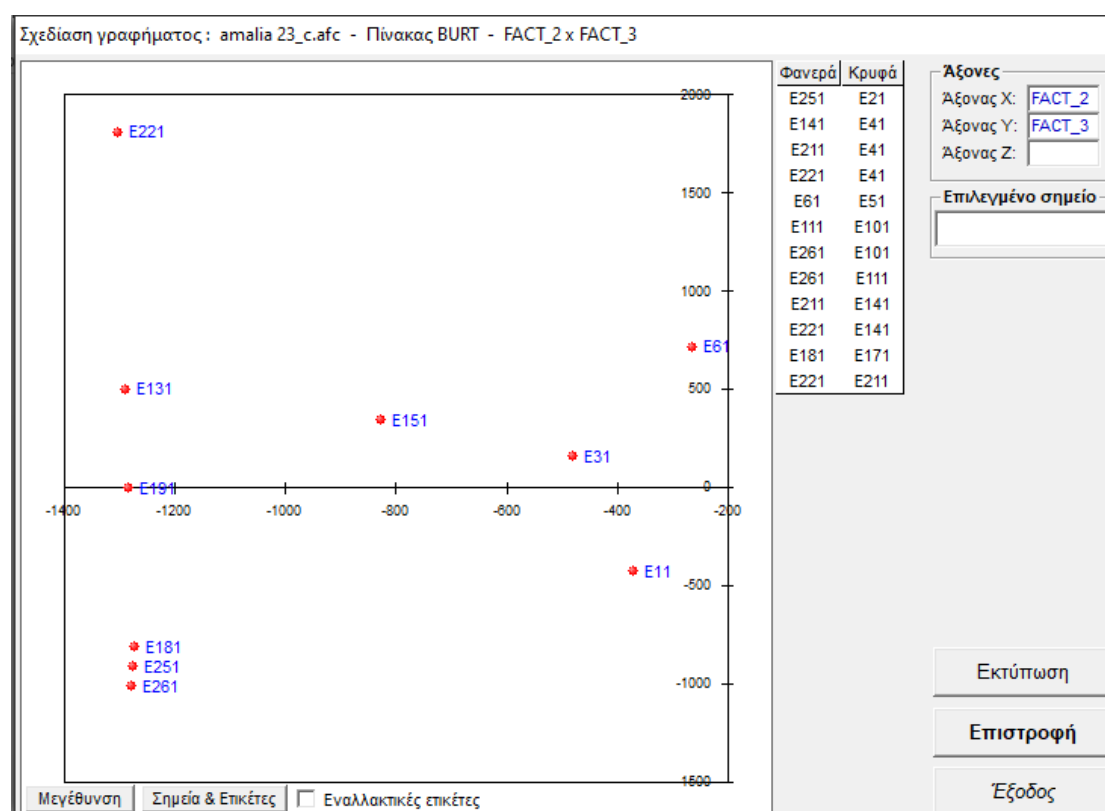

Figure 6: *Third factorial level $e_2 x e_3$*

The reliability of the instrument was related to items E1 to E29 was estimated by Cronbach alpha coefficient (*a*). The value of Cronbach's *α* coefficient for this instrument was equal to 0.962 and it is a very high value in terms of internal consistency (Alevriadou et al., 2014; Anastasiadis, 2020;, Anastasiadis & Christoforidis, 2019; Anastasiadou, 2007; Anastasiadou, 2008; Anastasiadou, 2009; Anastasiadou et al., 2010a ; Anastasiadou et al., 2010b; Anastasiadou, 2011; Anastasiadou, 2012; Anastasiadou, 2013a, Anastasiadou, 2013b; Anastasiadou, 2013c; Anastasiadou, 2018b; Anastasiadou et al., 2014; Anastasiadou, 2018a; Anastasiadou, 2018b;

Anastasiadou, 2018c; Anastasiadou, 2018d; Anastasiadou, 2019a; Anastasiadou 209b; Anastasiadou & Anastasiadis, 2011; Anastasiadou & Anastasiadis, 2019; Anastasiadou et al., 2016; Anastasiadou & Giossi, 2018; Anastasiadou & Karakos, 2011; Anastasiadou & Kofou, 2013a; Anastasiadou & Kofou, 2013b; Anastasiadou & Loukas, 2009; Anastasiadou & Pappa, 2009; Anastasiadou & Pappa, 2019; Anastasiadou & Panitsides, 2014; Anastasiadou & Taraza, 2019; Anastasiadou & Taraza, 2020a; Anastasiadou & Taraza, 2020b; Anastasiadou et al., 2014; Anastasiadou & Zirinoglou, 2014; Anastasiadou & Tiliakou, 2014; Florou, et al., 2015; Fotiadis. & Anastasiadou, 2019; Kofou, & Anastasiadou, 2013; Nikolaou et al., 2017; Ntotsi & Anastasiadou, 2019;   Souravlas & Anastasiadou, 2020; Souravlas, et al., 2020; Petridou, et al., 2017; Panitsides & Anastasiadou, 2015; Thapa et al., 2016; Theodoridou, et al., 2014).

Conclusions

Karamitrou (2020b) supported that intercultural education ground rules as acquaintance with cultures, mutual respect, empathy, parity, equity, justice, recognition of diversity, social cohesion, absence of discrimination and intolerance, fanaticism and bigotry, ethnocentrism as discrimination, xenophobia, racism as well as stereotypes and prejudices are of a major importance regarding intercultural education. It is the duty of teachers to establish these principles in school environment. Teachers must have competencies in order to prepare students for citizenship in multicultural society. (Leeman & Ledoux, 2003; Karamitrou, 2020a; Karamitrou, 2020b; Kofou, I., Anastasiadou S.2013).

Accordingly the current paper analyzes the results of an empirical research among 130 Greek Secondary Education teachers concerning their needs for knowledge improvement regarding intercultural education.

The results made it evidence that there is strong group of respondents consider that they are quite interested in improving their knowledge in Psychosocial support for students, Cultivation of a collective spirit, Strengthening the school culture, Organization of language support for foreign students, Exploitation of error in language teaching as well as Teaching Greek as a second or foreign language, knowledge improvement regarding intercultural education related to Utilization of New Technologies in the teaching of Greek as a mother tongue and as a foreign language, Didactic utilization of New Technologies, Personalization of teaching, Differentiation of teaching in the

multicultural school, School unit self-assessment as well as in Evaluation of school performance, whereas there is another group of respondents that is neutral in improving their knowledge regarding intercultural education.

Their demographic characteristics such as gender, executive, years of service and variable school area of responsibility have not been appeared on the factorial levels. Thus, there is any significant impact of demographic characteristics of teachers' attitudes and opinions on the matter. Still, further research have to be done, both quantitative and qualitative.

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