

Article

A Comparative Study of Burnout among Several Teachers' Specializations in Secondary Schools of Thessaloniki

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Abstract: The aim of this paper was to assess secondary education teachers' burnout in the Thessaloniki area. More specifically, the teachers of humanities (THs) and the teachers of sciences (TSs) were examined. In these groups, a comparative approach to burnout was performed. The sample consisted of 142 THs and 108 TSs. The Maslach and Jackson burnout measurement scale and the burnout sources questionnaire, as adapted by Mouzoura, were used to collect data. Based on the results of the survey, moderate burnout level was found in the teachers as a whole. It was also proved that between the two groups, there was no difference in the degree of burnout. In addition, THs record lower rates of depersonalization than TSs. Thus, it seems that demographic characteristics, level of education, and type of school differentiate burnout levels. Moreover, both groups of teachers' specialties identified issues related to educational organization and administration as the most important cause of burnout. Individually, however, THs appear to be more exhausted emotionally due to professional obligations that magnify the workload and time pressure compared to TSs, who are particularly "affected" by the lack of material teaching resources. Moreover, this paper explores and records several dimensions of burnout faced by the participants in the survey and reports certain recommendations that can practically influence their workplace.

Keywords: burnout; secondary education; educational specialties; teachers



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1. Introduction

Schaufeli and Enzmann [1] attempt to present the area, the general symptomatology of burnout, and the conditions under which it can manifest. Therefore, they define burnout as a persistent and negative state of mind. Burned-out employees have some common traits. They feel exhausted and weak, full of anxiety, and inefficient in fulfilling their work-related duties. They are poorly motivated and adopt dysfunctional and problematic behaviors and attitudes in the workplace. This is a psychological syndrome that develops gradually, and it is also possible that the exhausted worker will not become aware of their condition for a long time. This psychological state arises from a mismatch between the intentions and expectations of the employee and the reality at the workplace. Burnout is a condition that is often perpetuated, as the exhausted worker has not developed adequate and appropriate strategies to fight it.

Burnout syndrome manifests itself in many fields, but mainly in those professions where the level of employee–“client” interaction is high [2]. One of these professions is the teaching profession, which is charged with the responsibility of the safety of the children, and their education and instruction, while at the same time, it has administrative tasks to perform. In this profession, the degree of exposure of the employee is high if we take into consideration the volume and variety of groups (students, parents, and colleagues) with which the teacher coexists and is accountable. This overexposure is positively correlated with the syndrome of work fatigue. As the emotional demands of the work expand, work responsibilities and the workload also increase, while work pressure escalates [3].

At the same time, the financial crisis, both in Greece and internationally, has negatively affected the working conditions and the rights of workers in all professions, including that of the teacher. As a result, the employee offers more and is paid less, which makes his exhaustion even greater [4].

Dimensions and Symptoms of Teacher Burnout

Symptoms of teacher burnout include anger, anxiety, uneasiness, depression, fatigue, boredom, feelings of guilt, cynicism, and psychosomatic reactions. All these may lead, in extreme cases, to emotional breakdown [5,6]. In these circumstances, innovative solutions should be invented both at individual and organizational levels in order to face teachers' burnout.

More specifically, teachers who experience burnout lack motivation, patience, and a positive mindset about their job [7,8] described teacher burnout as a state of exhaustion in which teachers feel they have given everything they could. Fully committed to their job, they had invested all the effort and energy they possessed and finally ran out of all resources. These symptoms correspond to the dimension of emotional exhaustion according to Maslach's model for measuring burnout, the so-called Maslach Burnout Inventory (MBI). The phases of burnout and their correlation has been discussed by several scholars and practitioners in many research works [9].

Thus, teachers develop an unpleasant, impersonal, and possibly cruel attitude toward students. They are likely to treat the children's parents and their colleagues with a similar disposition [4,10]. For the most part, teachers who are burned out are expected to behave in a less compassionate way towards their students [11], they have less tolerance for the problems that arise during the teaching process [12], are less able to adequately prepare for the classroom, are less productive, and lack dedication [5]. They are also dogmatic regarding their daily professional practice. Subsequently, they hardly deviate from what they always do, from their routine and its structure. At this point, the elements described above are consistent with Maslach's depersonalization component.

Tikkanen et al. have found that differences exist in burnout among several school units, with an emphasis given to cynicism and emotional exhaustion [13]. Other scholars have found that teacher burnout was related to almost all teachers' demographic variables and attitudes [14]. In a study regarding inclusive schools, non-specialty teachers appear to have a higher level of burnout than specialty teachers [15]. Another study has suggested that we should provide teachers with information on the factors that affect the quality of education (such as burnout). It would be very useful in recognizing their behaviors and feelings [16]. The dimensions of teacher burnout may offer plenty of remarkable symptoms that raise the essential need for useful training programs, which may contribute to the decrease in teacher attrition [17].

In another study, a negative correlation has been revealed between teacher self-efficacy and the dimensions of burnout depersonalization and emotional exhaustion [18].

Over time, tired teachers develop feelings of diminished personal achievement when they perceive themselves as ineffective in fulfilling their teaching and educational duties and in assuming their school responsibilities [19,20]. Finally, these symptoms can lead to increased neurotic and psychosomatic diseases, many absences, and early retirement [5,21,22] and correlate with the inefficiency in the Maslach model.

2. Objectives of the Research

The Objectives of the Research Are

1. To examine the levels of burnout experienced by teachers of different educational specialties working in school units in Thessaloniki.
2. To study the relationship between the burnout of teachers serving in public schools in Thessaloniki and their demographic and employment characteristics.

This study explores and compares the levels of burnout and the factors of occupational stress experienced by teachers of humanities and literature (philologists from now on THs/1st group) and teachers of sciences (TSs/2nd group) in which two subgroups are

included, which are mathematicians (1st subgroup), and physicists, chemists, geologists, and biologists (2nd subgroup). This comparative study focused on these two educational groups, as the teaching hours of the respective courses are more than the teaching hours of other specialties. Furthermore, both specialties teach the highest number of subjects, especially the THs.

3. Method

This research was designed and conducted based on the principles of concerning quantitative research. More specifically, a quantitative approach is carried out [23]. Stratified sampling was chosen as the sampling method. According to it, the population was divided into two distinct and as homogeneous as possible layers, while the criterion for distinction was the educational specialty [24]. Specifically, the two groups consist of the group of THs and the group of TSs. Then, random sampling was carried out, taking a proportional sample from each layer. Thus, the estimate carried out on each layer was quite accurate, since the variability of each layer was low. Finally, all the individual samples from the two groups were collected in the final sample, in which it was possible to have a balanced representation of the two groups [24,25].

According to the research objectives set, we had to collect data from secondary school teachers, who are also the target population. Therefore, teachers who worked in secondary public schools in Thessaloniki during the school year 2021–22 took part in the survey. The teacher specialties on which the research focuses are 1st group (philologists/THs) who are referenced by the code PE2, and the 2nd group/TSs consists of mathematicians (code PE3), and physicists, chemists, geologists, and biologists (code PE4).

3.1. Population and Sample

A total of 250 secondary school teachers in Thessaloniki participated in the survey. Their demographic data, as shown in Table 1, are as follows: 69 are men (27.6%), and 181 are women (72.4%). Their age distribution ranges from 21 to over 60 years, with an average age of 48.38 years and a standard deviation of 9.2 years; thus, the majority of the participants belong to the group of 41 to 50 years. The vast majority of the respondents are married at a rate of 73.2%, while 18.4% are single, and 8.4% selected “other”. Additionally, regarding marital status, 28.4% stated they have no children, 20.8% that they have one child, 40.8% that they have two children, 6% that they have three children, and 4% stated that they have more than three children.

Table 1. Demographic characteristics of the sample (N = 250).

Demographic Characteristics	N	Relative Frequency (%)
Gender		
Men	69	27.6%
Women	181	72.4%
Total	250	100.0%
Marital status		
Married	183	73.2%
Single	46	18.4%
Other	21	8.4%
Total	250	100.0%
Number of children		
0 children	71	28.4%
1 child	52	20.8%
2 children	102	40.8%
3 children	15	6.0%
More than 3 children	10	4.0%
Total	250	100.0%
Age	Mean	S.D.
	48.38	9.2

Source: Processing of primary research data.

In terms of their work characteristics, the distribution of specialties in the sample is 142 THs (56.8%) and 108 TS teachers, i.e., mathematicians, physicists, chemists, and biologists (43.2%). The distribution of their educational experience ranges from 1 to over 30 years, with an average teaching experience of 17.75 years and a standard deviation of 8.8 years, while the majority of the participants belong to the group between 11 and 15 years. The vast majority of the participants are permanent teachers (82%), while the remaining percentage are substitutes or hourly paid. 39.6% of the respondents hold a bachelor's degree, 5.2% hold two Bachelor's degrees, 47.2% hold a master's degree, and finally 7.6% hold a Ph.D. In terms of the type of school they serve, 51.2% are teachers working in middle school, 41.2% in *general Lyceum*, and 7.6% in *vocational Lyceum*. Finally, 76% of the respondents serve in school units in Thessaloniki, while 24% are in educational units of the general region of Thessaloniki (Table 2).

Table 2. Job-related characteristics of the sample (N = 250).

Job-Related Characteristics	N	Relative Frequency (%)
Specialty		
THs	142	56.8
TSs	108	43.2
Total	250	100
Employment Relationship		
Permanent	205	82
Substitute–Hourly paid	45	18
Total	250	100
Educational Level		
University/Polytechnic	99	39.6
Second Degree	13	5.2
Master's degree	118	47.2
Ph.D.	19	7.6
Did not respond	1	0.4
Total	250	100
School Type		
high school	128	51.2
high school	103	41.2
vocational school	19	7.6
Total	250	100
Work Area		
Urban	190	76
General Region	60	24
Total	250	100
Educational Experience	Mean	S.D.
	17.75	8.8

Source: Processing of primary research data.

3.1.1.1. Data Collection Tools

In order to serve the objectives of the survey, a questionnaire was designed and developed as a data collection tool. The questionnaire consists of two parts.

The first part of the questionnaire contains 10 questions related to the demographic and employment characteristics of the survey participants (independent variables). In these questions, the participants are asked to indicate their gender, age, marital status, specialty, years of service in education, employment relationship, level of education, type of school, and area of the workplace. The aim of these questions is to determine the profile of the teachers participating in the survey since the literature [4,26,27] suggests that these characteristics contribute to the burnout of teachers.

The second part of the questionnaire concerns the measurement of burnout. The modified version of the Maslach Burnout Scale (Maslach Burnout Inventory/MBI) by Maslach and Jackson [28] was used, which is specific to teachers. The MBI consists of 22 questions–statements of self-assessment, which in turn are subdivided into three sub-

scales [27,28]. These subscales correlate with the three dimensions of burnout (emotional exhaustion, cynicism/depersonalization, and personal achievement). Specifically, nine questions–statements measure the emotional exhaustion of the respondents, eight pertain to their sense of personal achievement, and finally, five questions refer to the component of depersonalization. The answers–statements in each sub-scale are not taken into consideration, as the sub-scales are considered independent. Thus, respondents are asked to judge and assess, utilizing the seven-point Likert scale (0 = never, 1 = a few times a year, 2 = once a month, 3 = a few times a month, 4 = once a week, 5 = a few times a week, 6 = every day), the frequency with which they experience the situations or the emotions described by each question on the Maslach scale. Higher scores in emotional exhaustion and depersonalization show a higher level of burnout, and lower scores on personal achievement show a higher level of burnout [29].

The MBI, the tool that we use in that paper, has already been used in several research projects in the Greek population [30,31].

3.1.2. Reliability of the Research

Regarding the reliability factor, internal consistency reliability was applied in order to check the accuracy of our measurements [24]. This was checked using Cronbach's alpha coefficient [24] since the questionnaire consists mainly of questions–statements that are rated as continuous variables, from “never” to “every day” and from “none” to “extremely”. In detail, for each factor of the questionnaire, we measured Cronbach's alpha internal consistency index, accepting 0.6 as the minimum threshold of the coefficient. The Cronbach's alpha values of the burnout subscales were 0.90 for emotional exhaustion, 0.79 for depersonalization, and 0.071 for personal achievement. Regarding the present study, the pertinent values were 0.922 for emotional exhaustion, 0.758 for depersonalization, and 0.864 for personal achievement.

4. Results

4.1. Teachers' Burnout Levels in Terms of Its 3 Dimensions

Burnout consists of three components; emotional exhaustion, personal achievement, and depersonalization, the identification of which also determines the levels of burnout. The burnout level is obtained as a result of measurements for each of its three dimensions, as shown below in Table 3.

Table 3. Categorization of burnout levels.

Subscales	Low	Moderate	High
Emotional exhaustion	≥27	17–26	0–16
Personal achievement	≥37	31–36	0–30
Depersonalization	≥14	9–13	0–8

Source Adapted from [30].

Table 4 shows the results of the survey on the three dimensions of burnout.

Table 4. Frequencies and percentages for the three levels of burnout (N = 250).

Burnout Levels	N	Relative Frequency (%)
Emotional Exhaustion		
High (0–16)	101	40.4
Moderate (17–26)	65	26.0
Low (≥27)	84	33.6
Sense of Personal Achievement		
High (0–30)	61	24.4
Moderate (31–36)	63	25.2
Low (≥37)	126	50.4

Table 4. *Cont.*

Burnout Levels	N	Relative Frequency (%)
Depersonalization		
High (0–8)	212	84.8
Moderate (9–13)	15	6.0
Low (≥ 14)	23	9.2

Source: Processing of primary research data.

Table 4 shows the results of the survey on burnout levels.

Tables 3–5 show that the majority of teachers in Thessaloniki show moderate emotional exhaustion (59.6%), moderate personal achievement (75.6%), and low depersonalization (84.8%). In conclusion, the above findings converge on the fact that the burnout of teachers in Thessaloniki is at moderate levels.

Table 5. Mean and standard deviation for the three burnout levels (N = 250).

Subscale	Mean	S.D.	Level
Emotional Exhaustion	22.41	12.22	Moderate
Sense of Personal Achievement	35.81	7.48	Moderate
Depersonalization	4.62	5.04	Low

Source: Processing of primary research data.

4.2. Comparison of Burnout Levels of Secondary School Teachers of Different Specialties in Relation to Its 3 Dimensions

To investigate a possible relation between specialty and burnout, we apply criterion X^2 . First, we assume that there is no correlation between the variable “Specialty” with any of the three components of burnout, and we analyze their independence [32].

From the statistical check X^2 for the first component, “Emotional Exhaustion”, in relation to the variable “Specialty”, we indeed find that $X^2(2) = 0.646$, $p = 0.724 > 0.05$. Therefore no statistically significant difference is observed, and the independence of the variables is confirmed.

In Figure 1, we observe that 35.9% of THs versus 40.7% of TS teachers report low emotional exhaustion. 26.1% of THs express moderate emotional exhaustion compared to 23.1% of TS teachers. 38% of THs experience great emotional exhaustion, while TS teachers report a similar percentage of 36.1%. The results show that emotional exhaustion fluctuates at similar levels regardless of specialty.

In order to investigate a possible correlation between specialty and personal achievement, we apply criterion X^2 as before. From the statistical analysis, we find that $X^2(2) = 0.798$, $p = 0.671 > 0.05$; therefore, there is no statistically significant difference between specialty and personal achievement, and their independence is confirmed.

In Figure 2, we see that 52.1% of THs, compared to 47.2% of TSs, state low personal achievement. 23.2% of THs declare moderate personal achievement compared to 27.8% of TSs. Great personal achievement is noted by 24.6% of THs, while a similar percentage of 25% is shown by TSs. The results show that personal achievement in relation to the specialty fluctuates at similar levels in the three subscales.

Regarding the third component (depersonalization) in relation to the variable specificity, from the statistical control X^2 , we find that $X^2(2) = 4.071$, $p = 0.031 < 0.05$, so a statistically significant difference is observed, and the variables are dependent.

In Figure 3, we observe that the vast majority of THs (87.3%) and 77.8% of TSs report little depersonalization and, therefore, a low level of burnout. Similarly, a low percentage of THs (6.3%) notes moderate depersonalization compared to 10.2% of TSs. Great depersonalization is noted by 6.3% of THs, as opposed to 12% of TSs. In comparison, THs show lower levels of depersonalization than TSs, and the difference is statistically significant.

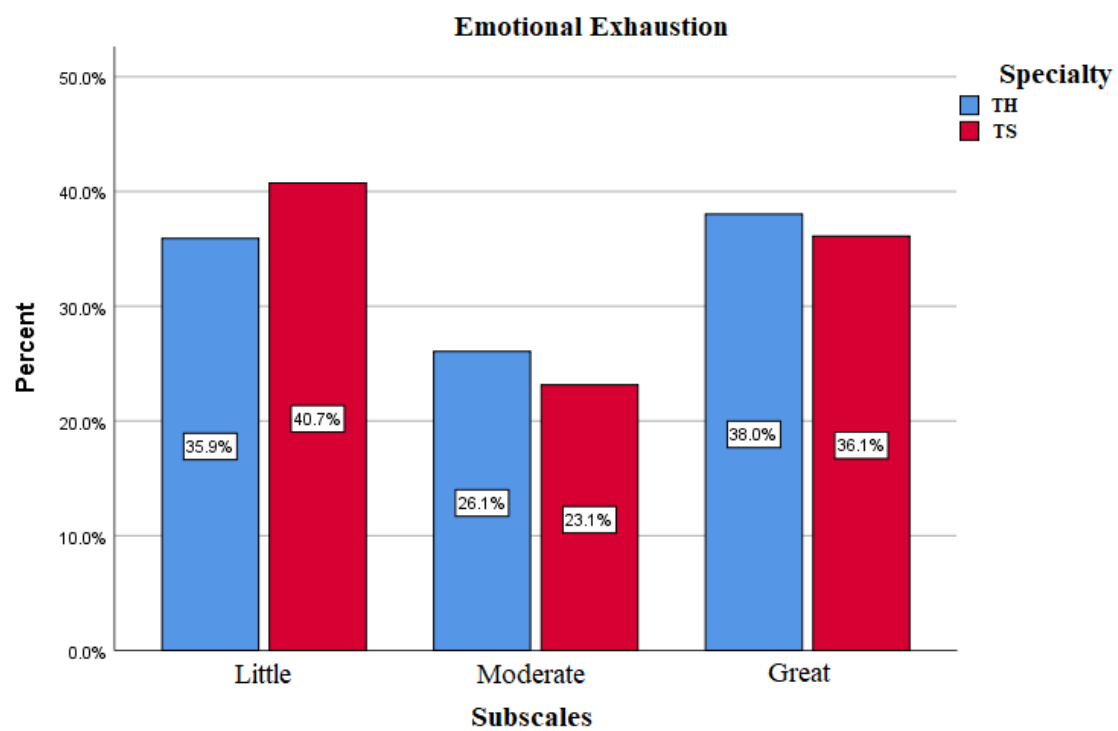


Figure 1. Emotional exhaustion levels by specialty. Source: Processing of primary research data.

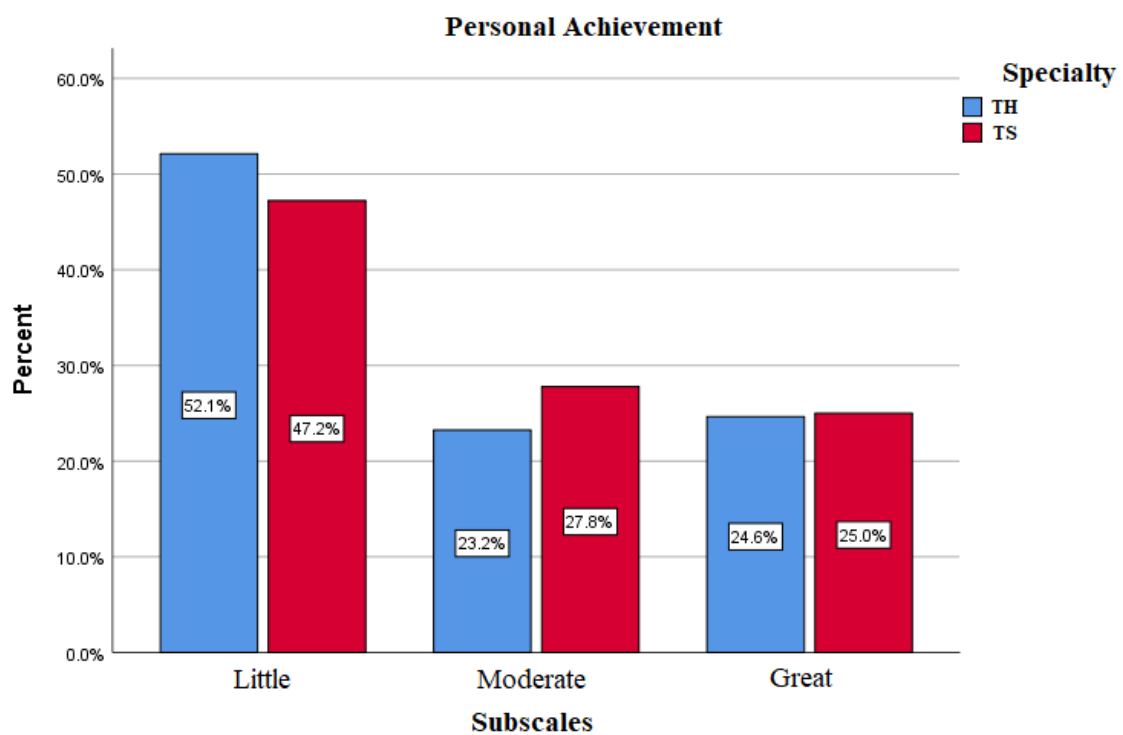


Figure 2. Levels of personal achievement by specialty. Source: Processing of primary research data.

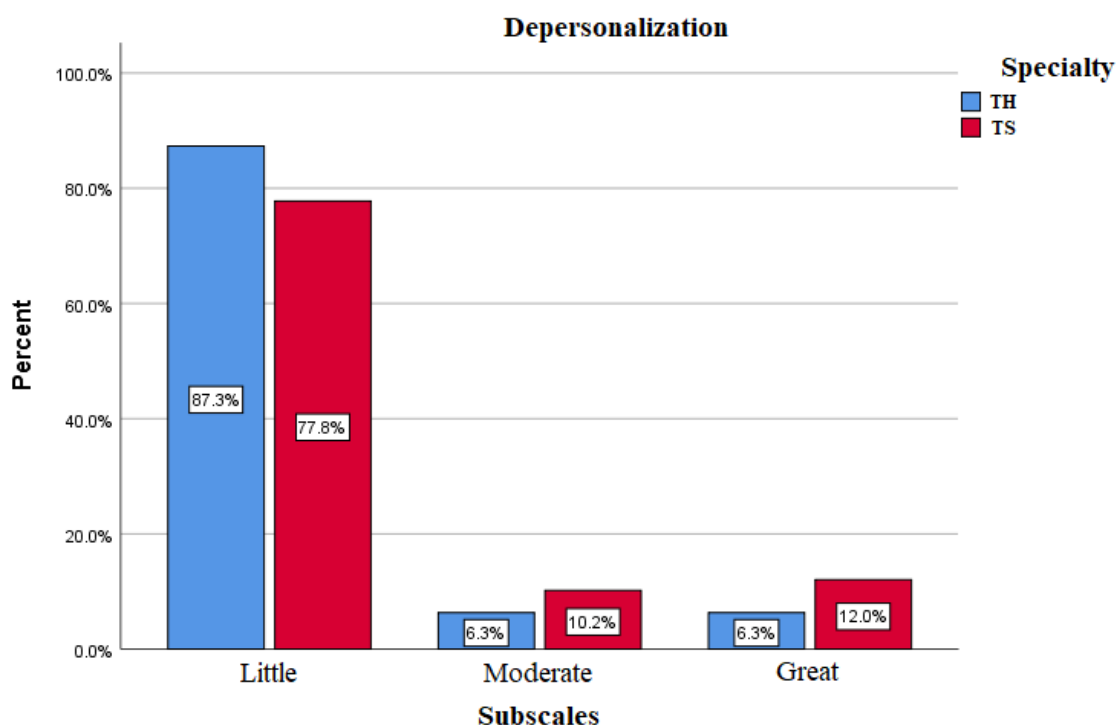


Figure 3. Depersonalization levels by specialty. Source: Processing of primary research data.

4.3. Examination of the Relation between the 3 Components of Burnout for Secondary School Teachers and Their Specialty

Initially, the regularity of the distributions of the three components of burnout should be investigated so that we can then proceed to statistical checks. From the regularity test with the non-parametric test Kolmogorov–Smirnov, it was found that none of the three components follows the normal distribution. In more detail, normality was not confirmed in any of the factors of emotional exhaustion (Kolmogorov–Smirnov $p = 0.00 < 0.05$), sense of personal achievement (K-S $p = 0.00 < 0.05$), and depersonalization (K-S $p = 0.00 < 0.05$).

Therefore, we should proceed to non-parametric statistical checks, investigating the difference of the means of each of the three components of burnout with the categorical variable specificity, using the non-parametric Mann–Whitney U test. To this end, we formulate the following research hypotheses:

H0. *There is homogeneity in the burnout experienced by THs, and TSs.*

H1. *There is no homogeneity in the burnout experienced by THs, and TSs.*

The statistical check showed the following results (Table 6): THs show slightly greater emotional exhaustion (mean = 2.532) compared to their colleagues' TSs (mean = 2.434), but this difference is not statistically significant ($p = 0.365 > 0.05$). In addition, THs show a marginally higher sense of personal achievement ($M = 4.543$) than TSs ($M = 4.389$); this difference, though, is not statistically significant ($p = 0.324 > 0.05$). On the contrary, THs show lower levels of depersonalization ($M = 0.762$) than TSs ($M = 1.135$), with the difference being statistically significant ($p = 0.001 < 0.05$).

Therefore, for the first two components of professional exhaustion, the zero hypothesis is confirmed; that is, there is a homogeneity of emotional exhaustion and the sense of personal achievement experienced by THs and TSs. On the contrary, no homogeneity was observed in the levels of depersonalization experienced by teachers of different specialties.

Table 6. Comparison of teachers' burnout levels by specialty (N = 250).

Level	Specialty	Mean	<i>p</i>
Emotional Exhaustion	THs	2.532	0.365
	TSs	2.434	
Sense of Personal Achievement	THs	4.543	0.324
	TSs	4.389	
Depersonalization	THs	0.762	0.001 *
	TSs	1.135	

* = $p < 0.05$. Source: Processing of primary research data.

4.4. Correlation of Teachers' Burnout with Their Demographic and Work Characteristics

Initially, to test the homogeneity of the means of the three components of burnout in relation to the independent variable Gender, we used the non-parametric Mann–Whitney U test. A statistically significant difference was found in the component of Emotional Exhaustion ($p = 0.002 < 0.05$), where women appear more burdened ($M = 2.63$, $SD = 1.3$) than their male colleagues ($M = 2.12$, $SD = 1.43$). In contrast, there is no statistically significant difference in the other components of burnout.

The non-parametric Kruskal–Wallis test was used to check the homogeneity of burnout among the different age groups of teachers. A statistically significant difference was indeed found in all three components of burnout. Specifically, in the age groups 25–30 years ($M = 3.11$) and 31–40 years ($M = 3.02$), a fairly high and statistically significant emotional burden ($p = 0.005 < 0.05$) is observed, which follows a downward trend for the next age groups of 41–50 years ($M = 2.42$), 51–60 years ($M = 2.49$) and over 60 years ($M = 2.21$). Correspondingly, the feeling of personal achievement is reduced in the ages of 25–30 years ($M = 3.83$) and 31–40 years (average = 4.03), compared to the other age groups 41–50 years ($M = 4.52$), 51–60 years ($M = 4.47$) and over 60 years ($M = 24.32$). Finally, the differences in the third component of depersonalization appear statistically significant ($p = 0.001 < 0.05$), where the first two age groups of 25–30 years ($M = 2.33$) and 31–40 years ($M = 1.98$) record higher values compared to the age groups of 41–50 years ($M = 0.87$), 51–60 years ($M = 0.82$) and over 60 years ($M = 1.15$). The findings show a disparity in burnout among teachers of different ages, with younger teachers appearing more exhausted than their older colleagues.

In terms of marital status, the non-parametric Kruskal–Wallis test showed statistically significant differences in Emotional Exhaustion ($p = 0.032 < 0.05$) and depersonalization ($p = 0.005 < 0.05$). More specifically, married teachers appear less emotionally exhausted ($M = 2.29$) compared to their unmarried colleagues ($M = 2.75$). In addition, in the component of depersonalization too, married teachers appear less cynical with their students ($M = 0.84$) than single teachers ($M = 1.36$).

In terms of number of children, the Kruskal–Wallis test showed no statistically significant difference in any of the components of Emotional Exhaustion ($p = 0.94 > 0.05$), Feeling of Personal Achievement ($p = 0.055 > 0.05$) and depersonalization ($p = 0.15 > 0.05$).

In the component Work Experience, the Kruskal–Wallis test also showed no statistically significant difference in any of the components of Emotional Exhaustion ($p = 0.089 > 0.05$), Feeling of Personal Achievement ($p = 0.15 > 0.05$), and depersonalization ($p = 0.214 > 0.05$).

Similarly, the results of the Mann–Whitney U test did not confirm heterogeneity in measurements at any of the three levels of burnout for teachers with different employment relationships.

On the contrary, using the Kruskal–Wallis statistical test, a statistically significant difference was found for two of the three components of burnout related to the level of education of the teachers in the sample. More specifically, for the component of Emotional Exhaustion with probability $p = 0.026 < 0.05$, Ph.D. holders appear the least emotionally burdened ($M = 2.01$), followed by postgraduate degree holders ($M = 2.37$). On the contrary, holders of a second degree ($M = 2.68$) and especially teachers with only a Bachelor's degree ($M = 2.75$) appear to be the most burdened. Similarly, regarding the Feeling of Personal

Achievement ($p = 0.041 < 0.05$), Ph.D. holders appear to be the most satisfied ($M = 4.98$) compared to other teachers.

Using the non-parametric Kruskal- Wallis test criterion, a statistically significant difference was found for the components Emotional Exhaustion ($p = 0.034 < 0.05$) and Depersonalization ($p = 0.022 < 0.05$). More specifically, teachers serving in vocational Schools show higher levels of emotional exhaustion ($M = 2.95$), followed by those serving in middle Schools ($M = 2.62$) and high schools ($M = 2.24$). In addition, vocational School teachers show high cynicism in their answers ($M = 1.45$), with a significant difference compared to teachers in middle Schools ($M = 1.00$) and lyceums ($M = 0.73$). Overall, vocational School teachers ($M = 3.1$) appear the most professionally exhausted ($p = 0.009 < 0.05$) compared to their colleagues in middle Schools ($M = 2.92$) and high schools ($M = 2.73$).

Furthermore, there is a statistically significant difference in the burnout of teachers in the sample in relation to their area of work. More specifically, at the level of emotional exhaustion (with $p = 0.013 < 0.05$), teachers working in schools in the urban area show higher values ($M = 2.60$) compared to their colleagues in the general area of Thessaloniki ($M = 2.13$). Overall, teachers active in urban areas ($M = 2.91$) appear to be more overworked than teachers in general areas ($M = 2.68$).

5. Discussion and Conclusions

The broader purpose of our research was to investigate the representations of teachers of different specialties serving in school units in Thessaloniki regarding burnout syndrome. Subsequently, the individual objectives and the corresponding research questions were identified. In particular, the degree of burnout and the factors that contribute to the creation of the syndrome were examined, and the relation between the demographic data and work characteristics and burnout was studied.

This section begins with an attempt to explain, interpret, and comment on the results obtained from the descriptive analysis and statistical control of research data. Subsequently, the limitations of research are listed, and finally, ideas are developed that can be the seed for future research work.

Answer to the 1st research question concerning teacher burnout levels.

1st research question: What are the levels of burnout experienced by teachers of different educational specialties working in school units in Thessaloniki?

5.1. Levels of Burnout of Teachers as a Whole

The teachers who participated in the survey during this time and in these specific conditions showed overall moderate burnout. In particular, the examination of the three components of the Maslach scale showed that the levels of emotional exhaustion and personal achievement are also moderate, while the degree of depersonalization is low. This result is consistent with the results of other surveys conducted at the same educational level—i.e., secondary [23]—as well as with a different research project carried out in primary education [33], but also with a research project that studied both levels simultaneously [34].

However, it is important to mention that concerning the levels of burnout, the findings of the research that have been conducted in Greece and abroad differ. Thus, research carried out internationally reveals that teachers experience intense burnout [19,35–40]. Similarly, research that focused on teachers in Greece showed that the degree of burnout is high [41]. In contrast, research conducted mainly in Greece has led to the conclusion that Greek teachers experience low levels of burnout [27,41–44].

The fact that Greek teachers are less affected by burnout, showing moderate levels of burnout compared to their foreign colleagues, can be explained by the different culture that is particular to each country and also by the differences in the education systems. The main characteristic of Greek culture is the development of close work relations and family ties, a fact that acts encouragingly and supportively for the employee, restraining and mitigating the degree of burnout. Furthermore, the working hours, the high number of public holidays, and the long vacations favor the Greek teachers and give them the opportunity to discharge

and reduce work intensity, as well as to engage in other activities that offer them pleasure and help them mitigate burnout. In addition, the fact that teachers in Greece are permanent offers them greater job security compared to their foreign colleagues. This is one of the advantages of the profession and significantly alleviates burnout. Even though the weaknesses of the Greece education system as a whole, on the one hand, often may not encourage innovative actions and initiatives, on the other hand, it relieves the school—and, therefore, its teachers, too—from the stress of securing material and human resources.

In addition, the fact that the surveys in Greece were carried out at different time periods may explain the difference in their findings, whether they show lower or more intense burnout.

5.1.1. Teacher Burnout Commentary by Specialty

The comparative study of participants' burnout by specialty showed that there are no significant differences between the two groups. We recall that the first group is that of THs, while the second group is composed of mathematicians, physicists, chemists, biologists, and geologists. This finding contradicts the findings of other research [45–47]. According to them, humanities teachers show more symptoms of burnout. Mouzoura [46], in particular, makes specific reference to THs, presenting them as more overworked than their colleagues of different specialties.

This discrepancy regarding the surveys of Khatun [45] and Brutnik [47] can be explained by the fact that each country is characterized by distinct educational and cultural data, an observation that is also analyzed in the previous section. The disharmony of this research with that of Mouzoura [46] can be explained by the fact that in the last decade, the appointments of permanent and substitute students in public schools have decreased significantly due to the financial crisis (Law 3833/2010, article 10).

So, in order to cover the employment gaps, a series of measures were implemented which affected the specialties of the second group. In particular, the teaching hours of physicians, chemists, biologists, and geologists were greatly reduced. Indicatively, we mention that in high school, only one hour per week is allocated to most of their subjects. As a result, they are assigned multiple teaching subjects, teach in many different departments, and are often employed in more than one school in order to cover their hours. Furthermore, most TSs oversee the physics laboratory of their schools. Previously, they enjoyed a three-hour reduction in their teaching hours due to this additional duty, which is not the case today.

Even the mathematicians, who were forced to teach 1st and 2nd choice courses in order to make up for the shortfall in their total hours worked, were not left unscathed. It should be mentioned that philological subjects were also affected by the reduction of teaching hours. However, THs' duties always covered multiple subjects, a fact that, compared to teachers of other specialties, protected them from the consequences that the financial crisis brought to public education.

For all these reasons, the workload of the specialties of the second group has increased significantly, which explains the similar values observed in the two groups concerning burnout syndrome. Similarly, it can explain the disharmony with Mouzoura's results [46], as the present research is carried out in a different period, where the educational and socio-political data are completely different.

On the other hand, concerning the component of depersonalization in particular, THs show a significant statistical difference, recording low rates. The results of this research are also in line with the research of Saloviita and Pakarin [14], who found that TSs appear more depersonalized than humanities teachers.

This is the case, as philological subjects are assigned more teaching hours than mathematics, physics, chemistry, biology, and geology (Law 4186/2013; Law 2817/2000).

As a result, THs teach more hours in the same class and have greater contact with their students. Having a mutual impact on each other, they bond with them. The character of the philological subjects, which is particularly humanistic, also contributes to this. These

bonds and the corresponding feelings that are created significantly limit the more cynical and impersonal attitude recorded by the teachers of the second group.

At this point, the importance of social and emotional learning is highlighted, which can lead to the development of supportive relations between teachers and students, which limits levels of cynicism and ultimately reduces work fatigue. Of course, social skills, which are a prerequisite for social-emotional learning, are not innate. Instead, they can be cultivated by pertinent programs. Thus, it is important to emphasize that teachers should be trained and develop professionally in order to achieve personal development, improve their professional performance and cope with burnout.

2nd research question: Is the degree of burnout experienced by teachers working in school units in Thessaloniki differentiated, regarding their demographic and work characteristics?

5.1.2. Gender

Statistical checking proved that Gender is positively correlated with burnout syndrome and therefore influences it. In particular, women are more vulnerable to emotional exhaustion than men, a finding that is also consistent with other studies [22,39,43,44,48–50]. A possible interpretation of this finding is that working women, despite the great increase in their status, are still entrusted with many roles, obligations, and responsibilities in the work, family, and social environment. These obligations often conflict with each other, leading them to burnout.

5.1.3. Age

Regarding the impact of age on the manifestation and exacerbation of burnout, the results of the research revealed that younger teachers appear more burdened with work than their older counterparts. This finding is also confirmed by other studies [27,51,52]. This is because adverse working conditions and the inadequacy of infrastructure quickly belie the expectations and high aspirations they had when they entered their profession. In addition, older teachers have already developed a philosophy and knowledge of life that helps them better manage the occupational stress that may lead them to burnout. On the other hand, this particular result disagrees with prior research [34] that shows that older teachers are more exhausted, a fact that is related to declining stamina and strength due to age.

5.1.4. Marital Status

In terms of marital status, based on the findings, married teachers turn out to be less burned out overall, recording low exhaustion and cynicism. This result coincides with previous studies [4,26] and is related to the family environment, which acts as a compensatory, healthy, and supportive counterweight to the damage that burnout can cause.

5.1.5. Years of Service

Checking the years of service as the first work characteristic, it did not emerge from the statistical analysis to act on the manifestation of the syndrome. In fact, teachers with fewer years of service record higher burnout averages, which reveals a trend, but in the statistical check that preceded it, no statistically calculable differences arose. This result is in line with Mouzoura [46], who, in her research, concluded that the findings did not reach a clear conclusion.

5.1.6. Employment Relationship

Substitute teachers note similar burnout values as their permanent colleagues, which leads us to conclude that there is no correlation between employment relations and burnout. Prior research also revealed similar results [26], which suggest that permanent teachers and their substitute colleagues are not differentiated in terms of their burnout levels. On the other hand, there are studies that show that permanent teachers are more worn out than substitutes [41] as well as the research work of Antoniou and Dallas [34], which shows

that substitutes are more exhausted due to the uncertainty they experience each year at the beginning of the school year.

5.1.7. Level of Education

The level of education has been shown to have an effect on burnout. In particular, teachers who hold a Ph.D. degree note less emotional exhaustion and higher personal achievement. The negative correlation between high educational qualifications and burnout is in line with some studies and contradicts others [46]. This is because these teachers are likely to be equipped and knowledgeable enough to develop strategies to defend against burnout, while the perception that teachers have of the levels of their personal achievement mitigates the levels of burnout.

5.1.8. Type of School

The type of school appears to contribute to the manifestation of burnout. Specifically, teachers working in vocational schools are more exhausted, noting high values in the components of emotional exhaustion and depersonalization. Next up are those who serve in middle schools, and last in the ranking are those who teach in general high schools. The research of Chrysafidou and Alexandropoulos [53] also agrees that vocational school teachers are the most burned out.

This finding can be explained by the special characteristics of vocational schools, which are schools with a large number of students and numerous departments. In recent years, there has been an increase in the number of students interested in entering higher education, which is undoubtedly a pleasant fact that, on the other hand, creates a great disparity in the departments in terms of educational level, as the majority of the students are mostly of low educational level with corresponding performance. Subsequently, their interest in education is limited, and they often devalue it completely. Furthermore, they often exhibit problematic behavior that sometimes reaches even delinquent acts. It is understood from the above that the teachers who work there are more threatened by burnout compared to their colleagues who serve in a different type of school.

On the other hand, less tired appear the teachers of general high schools. Even though they are charged with the responsibility of the preparation for the university entry exams, which inevitably come with higher difficulty subjects, the students of this age are more understanding, more mature, and calmer, having also been relieved of the psychological transitions of adolescence that characterize mainly the students of middle school.

5.1.9. Work Area

In closing, the area of work as a last work characteristic also affects burnout, as teachers working in the urban area show greater emotional exhaustion than their counterparts operating in the general area of Thessaloniki. Prior research coincides with this finding [35,54].

The above finding might be easily explained if we consider that the schools in the urban area are crowded with numerous departments, which multiplies the strain on teachers. Another aggravating factor is the interference of certain parents in the educational process, who sometimes, being holders of university degrees, question the knowledge of the teacher while undermining their authority. This parental involvement in the learning process is not so much observed in the schools of the general area of Thessaloniki. On the contrary, the educational level of parents in the region is lower, resulting in greater confidence in the teacher, upgrading his role and increasing his authority. This attitude is also transferred to their children, who show better behavior and greater respect for their teachers, thus facilitating the educational work.

Several limitations of the study which offer possibilities for future research are: (a) we did not use a qualitative approach to enrich the findings of the paper through an ethnographic standpoint, (b) the outbreak of COVID-19 pandemic a few months before the beginning of data collection may have influenced the levels of burnout among teachers, (e) we did not contact longitudinal investigation of the same teachers (f) the national features

of the Greek educational system might have influenced the results, and that fact should be taken into account, if one wishes to interpret the latter. (g) the limited geographical area of the research contacted.

Furthermore, a wider in-depth study on the correlations of teachers' burnout with the various phases of the latter (enthusiasm, stagnation, frustration, hyperactivity, and apathy and being burnt out) may be contacted in future research.

5.1.10. Conclusions

In this research, the burnout of teachers in Thessaloniki was examined, and a comparative study of burnout levels between specialties was made.

The processing of the data led to the conclusion that the teachers of Thessaloniki as a whole experience moderate burnout with corresponding values in the components of emotional exhaustion and personal achievement and low values of cynicism. Checking the overall burnout of the teachers by specialty, it appears that they did not differ from each other. However, in the dimension of cynicism in isolation, THs appear significantly less cynical than TSs.

Furthermore, it was found that women have significantly higher values of emotional exhaustion compared to men. Similarly, younger teachers appear more exhausted than their older colleagues. Married teachers turn out to be less cynical and emotionally exhausted than their unmarried colleagues. A high level of education can also mitigate burnout, as Ph.D. holders manifest low emotional exhaustion and a high sense of self-efficacy. More overworked, on the other hand, appear the teachers who serve in vocational high schools as well as those who work in urban Thessaloniki.

The findings revealed the representations of the participants in the research regarding burnout syndrome, illustrating the complexity of the teaching profession and the pressure experienced by teachers. This pressure and, by extension, the burnout syndrome is expected to increase as the globalized knowledge society in which we live evolves and requires the appropriate knowledge and skills in order for teachers to participate and coexist in the professional arena and in the society in general in a constructive and orderly way.

The results also support essential recommendations regarding actions that assist teachers and prevent burnout. On the one hand, flexible training programs at the organizational level may enrich teachers' social skills and stress management abilities. On the other hand, tailor-made programs that enhance well-being, mental health, behavior management, personal development, and mindfulness could benefit both the teaching staff and the school community as a whole.

Furthermore, the social responsibility of the teaching profession is crucial since the teacher does not just teach dry technocratic knowledge but also transmits ideals and values and shapes consciences. Thus, increased levels of burnout syndrome and a lack of interest from the part of the teacher in his work and its recipients, i.e., his students, negatively affect the educational system and, in the long term, society.

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