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STRESS EFFECTS AND COPING STRATEGIES IN THE CASE OF TEACHERS AND PUPILS

DOCTORAL THESIS

- Summary -

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KEY WORDS: stressors, perceived stress, transactional models, coping mechanisms, coping strategies, anxiety, burnout (professional exhaustion), emotional exhaustion, depersonalization of interpersonal relations, professional involvement, self-esteem, locus of control, self-efficacy, resilience.

CHAPTER I

STRESS AND COPING MECHANISMS -THEORIES AND EXPLICATIVE MODELS-

1. Definitions of stress and coping

In psychology, *stress* refers to the dysfunctional mental states which are due to the difficulties that the individual has to face, while **coping** refers to the mechanisms and the means that individuals have at their disposal in order to deal with those problems. **Coping** or **stress management** consists of people's cognitive and behavioural effort to reduce, control or tolerate the internal or external demands that go beyond their personal resources. This is a three-stage process: anticipation (warning), confrontation (impact) and post-confrontation. **Coping** comes as an answer to the assessment of a threat, being defined as a network of cognitive and behavioural efforts meant to manage the specific internal and/or external requirements that appear to exhaust or exceed a person's resources (Lazarus, Folkman, 1984).

2. The relation of stress to negative emotions

Stress-emotions depend on cognitive assessment. It is essential to study the cognitive bases of emotions and the cognitive mechanisms involved in the assessment of events or situations likely to cause stress-emotions. Scherer and Scherer (1990) have studied coping in relation to stress-emotions, as well as the complexe configuratios of stress management strategies.

3. Stress, frustration and anxiety

Rivolier (1992) suggests that *stress* is a term which should be related to *frustration*, to *the emotional response to danger, or to threat*, to *everyday annoyance*, to *the perception of the signification of danger*, and, respectively, to concepts larger than that of emotion. *Stress* relates, for instance, to *anxiety*. According to the principle of interrelation between *the somatic* and *the psyche* any cognitive change can induce physiological or somato- physiological changes.

4. Theories and models regarding stress and coping

Various researchers have developed different models meant to explain the manifold aspects of stress: *The Physiological Model of Stress and the Response Theory; The Causal Model and the Stimuli Theory; The Transactional Model of Stress (Lazarus, Folkman, 1984);* The Resource Conservation Model; The Interactionist-Ecological Modelul of Stress (Cohen, 1986).

Although any of the above-mentioned theories can be used in discussing stress, the most widely employed is *The Transactional Model* when an analysis of stress and of the reactions to stress is performed (Lazarus, Folkman, 1984; Lazarus, 1990).

The Transactional Model of Stress and Coping designed by Lazarus and Folkman (1984) is based on the way in which undesirable events can bring about stressful episodes in the context of transactions between persons and their environment. According to the transactional theory, coping consists in the cognitive, physiological and behavioural effort meant to reduce/minimalise, eliminate, master or tolerate internal or external demands in the context of a "person – organizational environment" transaction, demands that go beyond the real personal resources and possibilities of that individual. (Folkman et al. 1986).

The Transactional Model of Stress can be compared to the psychological-health model designed by Bruchon-Schweltzer and Dantzer (1994).

The Ineractionist Model of Anxiety, Stress and Coping (Rolland, 1998) offers a better understanding and explanation of coping behavioural types and of the anxiety and stress effects on psychological and physical health in stressful social and psychological situations.

CHAPTER II

DEFENSE MECHANISMS, COPING STYLES AND STRATEGIES

A new theory regarding the functional organization of defense and coping mechanisms has gained popularity in recent years. Whereas the traditional view (Menninger, 1963; Haan, 1977) maintained that coping mechanisms preceed defense mechanisms, more recent research has poved that, in fact, defense mechanisms preceed coping mechanisms (Chabrol, Callahan, 2004).

Most often, we devise strategies in order to eliminate negative emotional states caused by stressors; in other words, we use **coping mechanisms**.

A large number of works focus on the two *coping mechanisms* first analysed by Lazarus and Folkman (1984): *a) Problem-centered Coping*, involving event-management strategies; *b) Emotion-centered Coping*, involving emotion-regulation strategies, meant to manage the emotional response brought about by the stressful event.

Miclea (1997, pp. 21-24 and 26) uses an approach based on cognitive-psychology to devise a comprehensive taxonomy, a bi-axial classification of *coping mechanisms*, covering

heuristic and methodological aspects, function of the *functionality vector* (confrontationavoidance) and of the *type of mechanism* (behavioural, cognitive and neurobiological). Regarding emotion-management coping, it is mentioned that "*emotional-subjective feelings are the acknowledged result of the combination of neurobiological components (especially biochemical ones), and of cognitive and behavioural ones; the alteration of one of these factors leading to modifications in the signification of the subjective perception*" (Miclea, 1997, p.10).

Coping mechanisms presuppose *an ability to control situations*, a certain "*controllability*". Believing that the situation can be controlled offers one the possibility to modify or eliminate the amount of stress by using the discovered coping strategy. There are **two types of control:** *behavioural control and cognitive control*.

Coping styles cover combinations of certain personality traits, appreciative judgments, rational or irrational thoughts, beliefs and attitudes resulted from experience with stress. *Coping styles* can be described by taking into account their dimensions and their degrees of complexity (Lazarus and Folkman, 1984). A rigid coping style has proven to be less efficient than a flexible one.

Pro-active Coping Theory is an approach which integrates the temporal aspects of coping, especially future-events coping. *Pro-active Coping Theory* (Schwarzer and Taubert, 2002) comprises, at the same time, self-regulated goal attainment strategies and the concept of "personal growth".

When we desire to reduce stress as much as possible, we have to identify the potential sources of stress, to assess, in a realistic fashion, our personal resources for dealing with problematic situations and to familiarize ourselves with the stress control techniques, putting into practice *efficient coping mechanisms and strategies*.

CHAPTER III

SELF-ESTEEM, PERCEIVED STRESS AND SELF-EFFICACY

1. The relation between self-esteem, anxiety and the perception of personal self-efficacy

Self-esteem is defined as the positive or the negative evaluation of oneself expressed through various degrees of approval or disapproval and indicating the extent to which one sees oneself as a capable, valuable, important being (Coopersmith, 1967; Rosenberg, 1965, 1979, Demo, 1985). Starting from the hierarchical model of self-esteem, Shavelson and co. (quoted by Denis, 1996) postulate that besides global self-esteem there can be identified the degrees of appreciation of a certain person in various fields of activity. Function of the importance of the respective fields of activity for the articulation of the self, each of these has a different bearing in the construction and expression of global self-esteem.

Success increases the level of self-appreciation and personal value, raising the selfesteem, while failure decreases these levels, lowering the self-esteem. *Low self-esteem* becomes part of a vicious circle in which negative expectations bring about low levels of achievement translated into failure. These, in turn, have negative repercussions on the level of self-esteem. Under stressful situations, it is especially the anxious person and the one with low self-esteem that have fewer chances of success and, thus, they may encounter failure.

2. Stressful situations, failure and its causes

Control Psychology (Dubois, 1979, 1984) rests, on the one hand, on *attribution theory* and, on the other hand, on "*locus of control*" (Rotter, 1966). Rotter elaborated a scale on the basis of which a distinction can be made among people function of the way in which they explain their success or their failure as determined by: (a) their own behavior ("*internal control*") or (b) some factors beyond their own person and behavior, factors dependant on external forces ("*external control*").

Perceived stress plays the role of a mediator in the relation between social support, on the one hand, and perceived performance on the other hand. *Perceived control* is based on the assessment of the threat and on the personal resources. The environmental and the situational factors of the perceived stress and of the perceived control are: the nature of the situation, of the event, its duration, its ambiguity, its controllability and the available support (Bruchon-Schweitzer, 2001, p. 73-74). The benefic effects of the perceived control are a result of both the assessment of the aversive situation that the individual performs, and of the individual's assurance that s/he is capable of an efficient behavioural response.

CHAPTER IV

STRESS FACTORS, ANXIETY, SELF-ESTEEM AND COPING STRATEGIES IN ADOLESCENCE

In adolescence a great number of stress factors accumulate, these being seen as normative, and reaching the highest intensity during puberty. Many of these are actually real tasks that have an impact upon the teenagers' development, tasks that they must carry out in order to be granted the status of responsible adults. Here are some of these factors: acceptance of corporal modifications, acknowledgement of the social importance of sex roles, establishment of relations with other young people, attendance of school classes and continuation of their studies in preparation of a career, achievement of independence and personal freedom, especially financial autonomy, preparation for family life, etc.

Research shows that a change in living conditions can bring about an accumulation of minor and major events that may be construed as stressful. If the teenager cannot cope with the stressors *his/her self-esteem could lower and anxiety might appear*. (Simmons et al., 1987).

A survey conducted by Seiffge-Krenke (1994, p.177-178) on 1.028 German teenagers aged 12 to 19, showed that they seem capable of dealing with stressors and of competently solving problems encountered in all the areas of development. *Functional coping* clearly dominates, dysfunctional coping being only rarely employed and solely for certain kinds of problems. Interiorization was only mentioned in a fifth of the total reactions. These results point out that self-control and competence are the dominant characteristics, regardless of the kinds of problems that teenagers face.

The most striking differences for active coping and for self-reliance are encountered when *comparing the sexes*. One of the main differences refers to *the use of social resources*. Thus, as they mature, regardless of the nature of the problems, girls seek out advice, counseling, help in order to get comfort but also understanding from others, much more often than boys do. No matter what the problem might be, girls discuss it openly almost immediately with significant others whom they consider important and, generally, they are likely to solve the problem together with the other individual(s) concerned.

Teenagers most often decide to deal with **parent-related problems** directly, but they are quite frequently tempted to avoid the issue by throwing a tantrum, as a red herring. In such situations they look for comfort among peers who might have had similar problems, and discuss with them possible solutions.

It is obvious that when it comes to **school-related problems** teenagers choose more and more frequently, as they grow up, to reflect on the posiible solutions. Once more mature,

teenagers most often resort to internal coping – analyzing the problem in search for a solution, being even open to compromise. (McCrae, 1982). Most of the teenagers in all the age groups, although to different degrees and with various frequencies, discuss some school-related problems with their parents. However, they also resort very often to emotional reactions, manifested in anger and aggression.

Teenagers rarely discuss with their parents and with other adults **the problems** they might have **with their friends**, choosing to deal; directly with the one(s) involved. This tendency is even more dominant in the case of *sentimental problems*, which are usually discussed directly with the partner, in an attempt to identify the best solutions, being obvious that each of the two must be willing to communicate, to accept the influence of the other, so as to reach an agreement

Regarding the use of social resources, gender differences are especially clear, with girls resorting to social support more often than boys, in the case of school issues, parent-related problems and psychological quandaries involving their very person.

<u>CHAPTER V</u> TEACHER BURNOUT AND PROFESSIONAL STRESS

1. Burnout: definitions and features.

In 1969, Loretta Bradley was the first to state that *burnout* is a specific process related to stress, one linked to the demands and to the conditions offered at the work-place. The term *burnout* was then used in 1974 by H. J. Freudenberger, and by Christina Maslach in 1976, in their studies on professional exhaustion. There are many definitions of the term *burnout*, some of these mentioned at the following on-line source: http://fr.wikipedia.org/ wiki/Syndrome_d%C3%Aepuisement_professionnel.

Here are some definitions of the term *burnout:*

- *Burnout* is a state of emotional exhaustion, of depersonalization and of diminished performance, likely to occur in the case of persons working in jobs like Public Relations (Christina Maslach, Susan Jackson, 1986).

- Maslach (2001) sees *burnout* as a syndrome of physical and emotional exhaustion implying the development of negative self-esteem and of a negative professional attitude, leading to loss of involvement and to a lack of positive feelings. *Burnout* is a syndrome of emotional exhaustion, of depersonalization and of diminished involvement in professional development (Susan Jackson, Michael Leiter, Christina Maslach).

Professional exhaustion is, therefore, the result of chronic stressful conditions and of the feeling that at the work-place there is a discrepancy between personal abilities and the real working conditions.

Maslach (1986) identified three dimensions of professional exhaustion.

a). Emotional exhaustion (excessive emotional demand, the feeling that one is at the verge of emotional collapse);

b). **Depersonalization** or the **dehumanization of interpersonal relations** (seen as a decrease in empathy, insensitive relations, aloofness-detachment, indifference and/or cynicism towards those who normally are the beneficiaries of one's services);

c). Diminishing motivation and professional involvement, a decrease in *performance* (accompanied by a feeling of incompetence, of inability to accomplish anything, of a reduced work capacity).

There are several types of **professional exhaustion symptoms**:

a) Psychosomatic and somatic symptoms;

b) Psychological symptoms;

c) Psycho-social and occupational symptoms.

The onset of professional exhaustion is progressive, insiduos, and its evolution takes a significant amount of time. Burnout has negative consequences that incur *psychological costs* in the individual's case, *financial costs* for the *organization* and *sociale costs* for the family and for the community.

2. Models regarding the sources of burnout and professional stress

Along the years many different models regarding the sources of burnout and professional stress have been devised.

The "Demand-Comtrol" Model elaborated by Karasek (1990) is, according to Fessier and Moulin (2005, p. 34), one of the most renowned models that explain professional stress. This model focuses on vizează two dimensions: a) "*psychological job demands*", namely the organizational requirements and limitations imposed on the individual; b) *the freedom of making decisions* granted to the employee, namely the opportunities to decide and to control what goes on at the work-place.

Faessier and Moulin, in "*Santé et bien-être des enseignants en Suisse romande*" (2005), show that Karasek's model was reused, completed and developed by many researchers based on the particularities of their respective fields of activity and the results of their own research. Here are some **versions of Karasek's model**:

a) Johnson (1986; 1989) added to Karasek's model a third dimension: the social support, which refers to three aspects: a) *hierarchical support* (directorial), having two components: the practical support and the emotional support; b) *peer support;* c) *extra-professional support* (within the family, among friends, etc.).

b) Friedman's model (2000), in which the onset and the evolution of burnout are analysed in two different ways: a) on the cognitive level, it is seen as resulting from the feeling of personal and professional failure; b) on the emotional level, when the teacher feels overwhelmed by work overload, a state that may be followed by emotional exhaustion. Stressful events have a negative impact on the person either on one of these levels or on both.

c) Lourel and co. (2004, p. 558) put forward a **multicausal model** according to which job demands and freedom of decision are seen as interrelated exogenous variables that have a direct impact on the three dimensions of burnout, whose residual variables are correlated.

d) Some researchers who worked on establishing models pertaining to the causes of burnout in the case of teachers (Elfering and co., 2000) also take into consideration *the idealistic expectations of the teachers*, especially of the ones new to the field, *expectations often not met by the reality of school-life*. Othere models include *the inappropriate organizational structure and the insufficient social support* (Winnubst, 1993).

CHAPTER VI

RESEARCH REGARDING TEACHER BURNOUT, STRESS AND COPING

Numerous studies have shown that a huge number of teachers have suffered from stress or professional exhaustion (Cox and co., 1985; Corten and co., 2007).

The European Trade Union for Education (ETUE) devised a project entitled "The Optimisation of the Expertise on Teachers' Professional Stress and of the Assistance Offered to Organisations which Are ETUE Members.". The project was devised between November 2006 and December 2007 and was based on the answers given to the Professional Stress Questionnaire by teachers form 27 European countries, Romania being one of them. Dta analysis pointed to similarities but also to some differences in the way that teachers from different countries classify stressors and stress indicators. In Bulgaria, *Romania* and Hungary there featured a relatively high number of stressors and stress indicators.

The figure below outlines our comprehensive model of the influence that stress factors have on professional exhaustion in the case of teachers. To a considerable extent, this is the model that we have used in our investigations, and data analysis worked to confirm its efficiency.

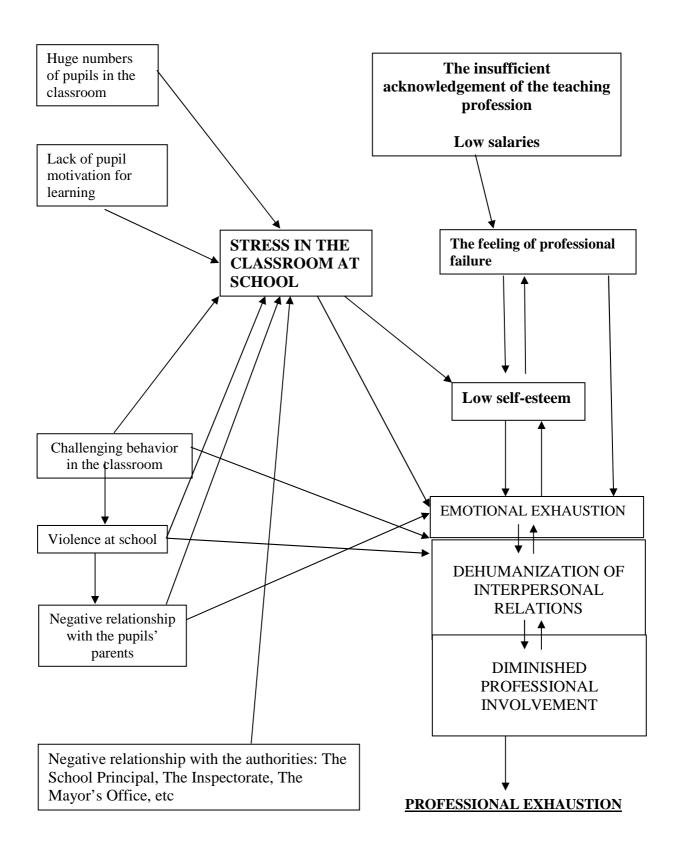


Fig. VI.2. The model showing the influence of stressors on teachers' professional exhaustion (V. R. Preda)

<u>STUDY 1</u>:

STRESSORS PERTAINING TO TEACHERS' PROFESSIONAL ACTIVITY

1. RESEARCH METHODOLOGY

The objective of this study: Pointing out the stress factors perceived by teachers at school.

The general hypothesis of this research: Although primary-school, secondaryschool and high-school teachers face similar stress factors, there are certain differences in what concerns the ranking of these stressors in the respective institutions.

Specific hypotheses:

- a) It is assumed that the extremely low salaries and the high level of difficulty involved in teaching a much too dense curriculum, together with the problems of time management and challenging behavior, constitute the major stress factors for teachers working in any of the three types of school.
- b) There will be differences regarding the frequency with which the various forms of violence at school are perceived as stressors by primary-school teachers on the one hand, and by secondary-school and high-school teachers on the other hand, as well as regarding their ranking.

Investigation procedure:

The research was carried out in two stages: initially, during the first stage of our investigation, during the 2006-2007 and 2008-2009 school years, 450 primary-school, secondary-school and high-school teachers were asked to fill in a list regarding the main stressors that they face during their professional activity. The teachers mentioned 53 stressors which we included in 15 categories of stress factors that we used to design a questionnaire.

The questionnaire regarding the stressors linked to teachers' professional activity that we thus elaborated comprises 15 categories of stressors encountered at school. These are assessed on the basis of the frequency with which they are perceived by teachers on a Lickert-like four-level scale: 1- never; 2 – rarely; 3 – quite often; 4- often; 5 – very often.

Table VI.1

Categories of stressors perceived by teachers

Stress sources
1.Financial limitations due to low salaries
2. Teaching difficulties due to curriculum overload
3. Time management problems
4. Everchanging educational policies and regulations
5. Failure to meet their professional expectations
6. Number of pupils in the classroom
7 Challenging behaviour
8. Pupil assessment
9. School environment
10. Relationship with some of the pupils' parents
11. Financial limitations due to the school's lack of material resources
12. Autocracy of school management
13. Pupils' verbal violence
14. Pupils' destructive behaviour
15. Pupils' physical violence

Table VI.2. presents the **socio-demographical characteristicis of the sample of teachers.**

Table VI.2.

	Women	Men
Total number of participants (N=236)	155	81
Age-groups (N):	<u>N:</u>	<u>N:</u>
23 - 30 years of age	38	15
31 – 40 years of age	45	26
41 - 50 years of age	42	25
51 – 57/60 years of age	30	15
Age: average / standard deviation	38.6 12.4)	42.5 (9.5)
Teaching experience: mean / standard deviation	19.5 (11.4)	23.6 (10.8)
School type:	<u>N:</u>	<u>N:</u>
Primary-school	40	$\overline{21}$
Secondary-school	50	30
High-school	65	30

The socio-demographical characteristicis of the sample of teachers (N=236)

The research was carried out during the 2007-2008 and the 2008-2009 school years. The investigation was performed at the respective schools, but sometimes the teachers filled in the forms home and at other times they were consulted during different training courses (preparation for Definitivat, Gradul Didactic II, the Magister Programme).

2. Data analysis: Comparing the frequency with which different stressors are perceived by primary-school, secondary-school and high-school teachers.

Data analysis shows that for the **primary-school teachers** that we consulted *the main stressors* are: *financial limitations due to low salaries, teaching difficulties due to curriculum overload, everchanging educational policies and regulations time management problems, failure to meet their professional expectations, the number of pupils in the classroom, some pupils' challenging behavior.*

For **secondary-school teachers**, the first three stressors are the same as the ones mentioned by primary-school teachers: *financial limitations due to low salaries, teaching difficulties due to curriculum overload, everchanging educational policies and regulations time management problems*. Then there follow *time management problems* (a normal result of curriculum overload), *failure to meet their professional expectations and some pupils' challenging behavior*. As different from the primary-school, where, they occupy the end-of-list positions, in the secondary-school environment *pupils' verbal and physical violence, and their destructive behaviour* are mentioned as frequent sources of stress.

Our data analysis emphasized the fact that, to a considerable extent, **high-school teachers** mention the same main stressors as secondary-school teachers: *financial limitations due* to low salaries, teaching difficulties due to curriculum overload, everchanging educational policies and regulations time management problems, time management problems, the number of pupils in the classroom, some pupils' challenging behavior. In high-school, pupils' verbal and physical violence and their destructive behavior is mentioned as occurring almost as frequently as in the secondary-school environment.

For primary-school, secondary-school and high-school teachers the stressors having the most serious (values between 3 and 5) negative impact are the following: financial limitations due to low salaries that cannot ensure a decent material and spiritual lifestyle; the lack of social recognition and appreciation of teachers' activities; teaching difficulties due to curriculum overload, leading to time management problems; pupils' inappropriate behavior (decreased motivation for learning, challenging behavior, pupils' verbal and physical violence).

The hypothesis that a higher number of female teachers display greater levels of perceived stress than male teachers do **was confirmed.** We have also confirmed the hypothesis that in the case of female teachers the frequency of perceived medium-level and above medium-level stress is higher than in the case of their male counterparts.

STUDY 2: PERCEIVED STRESS AND ITS EFFECTS IN THE CASE OF TEACHERS. THE EXTENT AND THE SYMPTOMS OF TEACHER BURNOUT.

1. RESEARCH METHODOLOGY Research objectives:

1) To study the relation between perceived stress, anxiety and self-efficacy

2) To assess the effect of moderating variables (teaching experience, anxiety, locus of control) on the professional exhaustion syndrome

on the professional exhaustion syncronic

3) To identify the stress management strategies employed by teachers

4) To study the relationship between locus of control and coping strategies

The variables of our research:

Independent variables: age, gender, school-type, stressors.

Moderating/Intermediary variables: teaching experience, anxiety as a constitutive trait, locus of control.

Variable dependente: perceived stress, anxiety as a state, burnout symptoms, coping strategies, self-efficacy.

The participants:

The same sample of teachers included in our first study was employed in this second study: **236 teachers (155 female şi 81 male)** from Cluj-Napoca and from other schools in Cluj (see table VI. 2). The research was carried out during the 2007-2008 and the 2008-2009 school years. The investigation was performed at the respective schools, but sometimes the teachers filled in the forms home and at other times they were consulted during different training courses (preparation for "Definitivat", "Gradul Didactic II", the Magister Programme). Most of the questionnaires (64 %) were filled out by the teachers either at the respective schools or at home, and 36 % during different training courses.

The **236** teachers who filled out *The Questionnaire for the Identification of Stressors Linked to Teachers' Professional Activity* also participated in the other stages of our investigation, filling in all the other questionnaire that we have used in order to carry out this study.

Research hypotheses:

Hypothesis 1: Perceived stress is higher in the case of female teachers than in the case of male teachers. In the case of female teachers the frequency of **perceived stress** is higher than in the case of their male counterparts.

Hypothesis 2: For both female and male teachers there is a strong connection between **the level of perceived stress and that of emotional exhaustion.** Female teachers are especially predisposed to emotional exhaustion when the level of perceived stress is above-medium.

Hypothesis 3: For both female and male teachers there is a strong connection between **the level of perceived stress and that of the depersonalization** at the level of interpersonal relations.

Hypothesis 4: For both female and male teachers there is a strong connection between **the level of perceived stress and that of anxiety as a state**. The teachers whose anxiety is high have a negative perception of their work environment, which they consider stressful. The anxiety-state of female teachers is more pronounced than that of male teachers, especially under stressful circumstances.

Hypothesis 5: Because the **modality of control** internal locus of control intern or external locus of control have an influence on the level of perceived stress at school and in problematic situations, we postulate that:

- a) The teachers who manifest, predominantly, **external control** will be more stressed and will view problematic school situations as a threat, to a greater extent than those teachers who display higher internal control.
- b) The teachers who manifest, predominantly, **internal control** will be less stressed and will view problematic school situations as a challenge, rather than as a threat.
- c) When the level of perceived stress is above-medium, there are significant gender differences regarding the display of internal or external control.

Hypothesis 6: The feeling of self-efficacy is negatively correlated to professional stress:

- a) The stronger the feeling of self-efficacy, the lower the level of stress;
- b) The weaker the feeling of self-efficacy, the higher the level of stress.

Hypothesis 7: The stronger teachers' **professional self-efficacy** is, the more they get emotionally and cognitively involved in school-activities;

- a) The stronger teachers' **professional self-efficacy** is, the more likely they are to establish appropriate interpersonal relationships, so there is a negative correlation between high self-efficacy and the dehumanization of interpersonal relations.
- c) The stronger the teachers' feeling of professional self-efficacy, the more likely they are to get involved in the creation of a pleasant environment at school.

Hypothesis 8: Professional stress and the degree of professional involvement are negatively correlated.

We postulate the following specific hypotheses

- a) Professional stress has a negative impact on one's emotional state, and it may cause emotional exhaustion as well as a diminished professional involvement on the teachers' part;
- b) Professional stress has a negative impact on teachers' **professional involvement**, and it may cause the **dehumanization of interpersonal relations**.

Hypothesis 9: There are significant gender differences in what concerns the employment of coping strategies. *It is predicted that male teachers use active coping and problem-centered strategies more frequently than their female counterparts, while female teachers use emotion-centered coping strategies and avoidance strategies.*

Research instruments:

1) The questionnaire regarding the stressors linked to teachers' professional activity – which we have designed – comprises 15 categories of stressors encountered at school; they are assessed function of the frequency with which they are percpted by teachers on a Lickert-like four-level scale: 1- never; 2 – rarely; 3 – quite often; 4- often; 5 – very often.

2) The Spielberger Anxiety Inventory - *State/Trait Anxiety Inventory (STAI)*, translated and adapted. For the Romanian population the average score STAI X1 is of 41.18 for women and of 36.32 for men, with standard deviations of 9.9 for women and 8.75 for men. On STAI X2 the average score is of 42.11 for women and of 40.16 for men, with standard deviations of 7.08 and, respectively, of 8.33.

The psychometric qualities of the Spielberger anxiety have been demonstrated by several researchers (Bruchon-Scweitzer and co., 1993).

3) The Perceived Stress Scale, elaborated by Cohen and Williamson in 1988 – translated and adapted – is a self-administred type of questionnaire that measures the feeling of daily stress. The scale was designed starting from the transactional approach to stress. The internal coherence of the scores obtained by Lourel, Gana and Wawrizyniak (2005, p. 231) with *the Perceived Stress Scale* has proven to be satisfactory (alfa = 0.82).

4) The stress level self-assessment questionnaire (translated and adapted from P. Légeron). This questionnaire contains 12 statements with reference to the frequency and the intensity of the perceived stress.

5) The Levenson Control Scale ("*The Internal, Powerful Other and Chance Scales*" - *IPC*) – translated and adapted – assesses the extent to which people establish a causal relation between the appreciation obtained and their own behavior, respectively, between what Rotter calls internal control and external control. As different from Rotter's scale (1966), which outlines only one axis: *internal – external, Levenson's scale is multidimensional.* Besides the *internal control* dimension (*I*), the scale differentiates between

two types of externality: an *unpredictable externality*, chance-related, (C), and a *predictable externality*, which can be manipulated, person-related, (P).

6) The Maslach Burnout Inventory (MBI) – translated and adapted – is a 22-item questionnaire, in which the items are assigned to three groups, in order to assess three DIMENSIONS on a Lickert-like scale of intensity/frequency:

- *emotional exhaustion*, defined as the feeling of exhaustion on the emotional level that results from one's activity at the workplace, is assessed using 9 items (numbered 1, 2, 3, 6, 8, 13, 14, 16, 20);

- *depersonalization (dehumanization of interpersonal relations)*, taking the form of indifference, insensitivity towards the people that one comes in contact with at the workplace, is assessed using 5 items (numbered 5, 10, 11, 15, 22);

- *personal professional involvement/development task (fulfillment)*, consisting in the feeling that one is competent and benefits from rewarding achievements in one's professional life (self-accomplishment), is assessed using 8 items (numbered: 4, 7, 9, 12, 17, 18, 19, 21).

The following scores are viewed as significant:

a) emotional exhaustion >29 in terms of frequency and >39 in terms of intensity;

b).dehumanization of interpersonal relations ("*cinicism*") >11 in terms of frequency and >14 in terms of intensity;

c) professional involvement, the feeling of professional fulfillment: < 33 in terms of frequency and < 37 in terms of intensity.

7) The Brief COPE (translated into Romanian and adapted after: S. C. Carver, 1997) You want to measure coping but your protocol's too long: Consider the Brief COPE. *International Journal of Behavioral Medicine*, 4, 92-100). The questionnaire contains 28 statements. The scales of the Brief COPE questionnaire are presented below.

Brief COPE Questionnaire Scales	Items
Active coping	13, 20
Self-distraction	1, 17
Denial	3, 21
Substance use	4,22
Use of emotional support	5, 14
Use of instrumental support	10, 19
Behavioral disengagement	6, 15
Venting	9, 18
Positive reframing	11, 26
Planning	2, 24
Humor	16, 28
Self-blame	12, 25
Acceptance	8, 23
Religion	7,27

8) General self-efficacy scale – the Romanian version created by Băban, Schwarzer, Jerusalem, 1996: Romanian Version of General Self-Efficacy Scale: http://userpage.fu-berlin.de/~health/rumania.htm). This scale aims to assess (perceived personal efficacy).

9) The questionnaire regarding *pedagogical reactions and attitudes under stressful classroom circumstances.* This questionnaire that we designed and validated contains 15 items regarding the various pedagogical reactions and attitudes displayed by teachers in relation to their students.

10) The questionnaire regarding models of classroom behavior management designed by us.

<u>CHAPTER VI</u> presents the DATA ANALYSIS AND THE INTERPRETATION OF THE RESULTS regarding PERCEIVED STRESS AND ITS EFFECTS IN THE CASE OF TEACHERS.

In order to verify the hypothesis that female teachers display a level of perceived stress which is higher than that of their male counterparts, we have processed the data obtained in the school year 2008-2009 from 155 female teachers and from 81 male teachers working in an urban environment who were asked to fill in **the stress level self-assessment questionnaire** (translated and adapted from P. Légeron). *We must add that these were the only samples of teachers willing to fill in this questionnaire and provid us with the completed forms*.

The data regarding the level of perceived stress that we obtained after the administration of **the stress level self-assessment questionnaire** to the group of participants are presented in the table below and in the sectorial diagrams.

The statistic processing was made by using the SPSS 13 program.

1. The classification of teachers function of the level of perceived stress

Stress level	Stress below medium-level (Global score of 6 to 12)	Medium-level stress (Global score of 13 to 20)	Stress above medium- level (Global score higher than 20)
Women (N= 155)	31.81% (N=49)	9.09% (N=14)	59.10% (N=92)
Men (N= 81)	44.45 % (N=36)	22.22% (N=18)	33.33% (N=27)

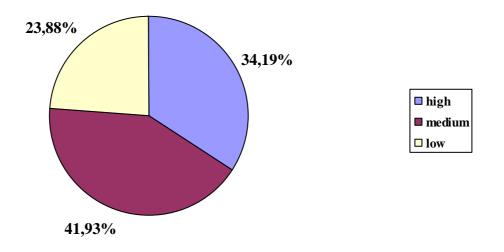
The classification of teachers (%) function of the level of perceived stress

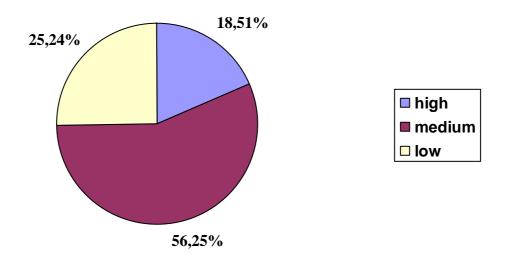
The data presented above show that we have verified the hypothesis that female teachers display a level of perceived stress which is higher than that of their male counterparts. We have also confirmed the hypothesis that in the case of female teachers the frequency of perceived medium-level and above medium-level stress is higher than in the case of their male counterparts.

2. The analysis of the degree of burnout occurrence manifestation and of burnout intensity in female and male teachers

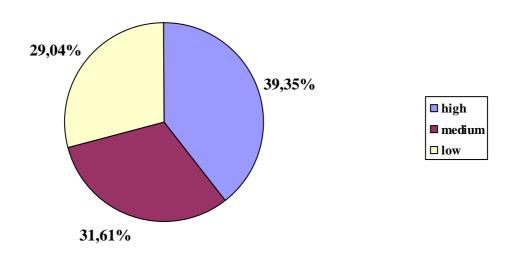
The sectorial diagrams below show that the level of **emotional exhaustion** and of **personal relations dehumanization** is higher in the case of female teachers than in the case of male teachers. However, in both female and male teachers emotional exhaustion and personal relations dehumanization do not influence negatively to a great extent the feeling of professional involvement and fulfillment. Thus, only 27.18 % of the male teachers and 26.46 % of the female teachers declared that they have reduced feelings of **professional involvement and fulfillment**, such feelings rating high in the case of 43 % of the teachers interviewed. Consequently, despite emotional exhaustion, only about ¹/₄ of the teachers display diminished motivation and lower degrees of professional involvement.

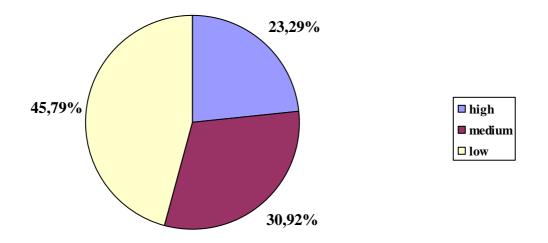
The classification of female teachers according to the degree of emotional exhaustion



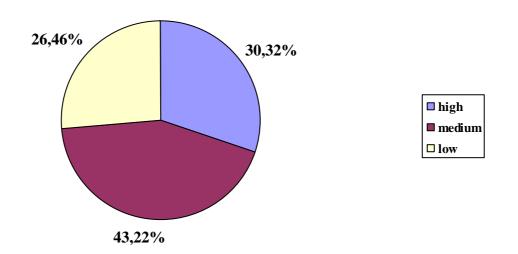


The classification of female teachers according to the degree of depersonalization

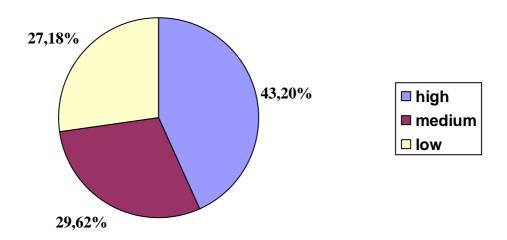




<u>The classification of female teachers according to the degree of professional</u> <u>involvement/satisfaction</u>



<u>The classification of male teachers according to the degree of professional</u> involvement/satisfaction



- Data analysis showed that 42.9% of the male teachers that display above average perceived stress exhibit invreased emotional exhaustion. This percentage is not as high as the one noticed in the case of female teachers, where the frequency of increased emotional exhaustion is 55.3 %. Thus, *female teachers are more predisposed to emotional exhaustion under increased professional stress than male teachers*.

- When the Chi-Square ($\chi 2$) test was administered, highly significant differences (p < 0.000) were noticed in wht regards the effect of perceived stress on emotional exhaustion, not in the case of all teachers who displayed below and above average perceived stress, regardless of gender. For female teachers with above average perceived stress levels, emotional exhaustion appears more frequently and reaches higher levels.

Thus, the hypothesis that there is a strong connection between the frequency and the intensity of stress, on the one hand, and teachers' emotional exhaustion, on the other, has been confirmed.

The data obtained through our research, which are in agreement with that of other researchers (Genoud, Brodard and Reicherts (2009), shows that various stressful contexts and situations which constitute part and parcel of the teaching profession can cause negative emotions due to pupils' behavior, to the lack of social appreciation when it comes to their activities and efforts, to the low salaries, to the much too great amount of work due to an overloaded curriculum, due to time management problems, to the inappropriate environment in schools, and, last but not least, to the lack of organizational support. Besides these stressors,

there are also others, such as confusing issues in what regards the roles and responsibilities of people supposed to take part in the school's social environment (different persons from the City Council, the Mayor's House, the Isnpectorate, etc.); the paradoxical requirements of a society that casts violent criticism at the school, making unrealistic demands of this institution, as if the school could on its own regulate each and every instructional or/and educational isuue of each student.

Taking into account the significance of the scores for the three burnout dimensions, here is a comparison between the level of manifestation of the professional exhaustion symptoms in female and male teachers investigated by using The Maslach Burnout Inventory.

Percentual reprezentation of female and male teachers function of the different degrees of manifestation of the burnout dimensions (male teachers: N=81; female teachers: N=155)

Burnout dimensions	Emot	ional Exh	austion	-	rsonaliza personal ons	tion of	-	feeli ssional vement/ ment	0
Burnout degree	High	Medium	Low	High	Medium	Low	High	Mediu	n Low
Female Teachers (N) (%)	53 34.19	65 41.93	37 23.88	61 39.35	49 31.61	45 29.04	66 43.22	47 30.32	42 26.46
Male Teachers (N) (%)	15 18.51	45 56.25	21 25.24	19 23.29	25 30.92	37 45.75	35 43.20	24 29.62	22 27.18

The table above shows that both female and male teachers display medium scores for the dimensions of *emotional exhaustion* and the *depersonalization of interpersonal relations*. However, male teachers exhibit *a lower degree of professional involvement/fulfillment*, which means that they are less motivated than female teachers. Moreover, many female teachers whose score was above medium are more actively involved in the instructional/educational activities with their pupils, due to their increased empathy and motivation.

The Correlations between the Dimensions of Professional Exhaustion

Regarding *the correlations between the three dimensions of professional exhaustion* (tabelul VI.XVI), data analysis points to correlation coefficients (r) that have a smaller value than the one of those obtained by Maslach and Jackson (1986), by Dion and Tresier (1994) and by Genoud, Brodard and Reicherts (2009).

Burnout dimensions/Correlation	Α	В	С	D
coefficients				
Emotional exhaustion -	0.45**	0.52**	0.34*	0.48*
Depersonalization of interpersonal				
relations				
Emotional exhaustion - Degree of	- 0.32*	-0.22	-0.27	- 0.33*
professional involvement/fulfillment				
Depersonalization of interpersonal	- 0.28	-0.26	-0.26	- 0.32*
relationships - Degree of professional				
involvement/fulfillment				

The correlations (r) between the three dimensions of professional exhaustion

* p < 0.05; ** p < 0.001; A – our study (N=236); B – Maslach and Jackson's study (N = 1.067); C – Dion and Tessier's study (N=228); D – Genoud and co. (N=787).

The analysis of the results shows that *emotional exhaustion* is an important factor in the process of **professional exhaustion**, a fact previously noticed by Maslach and Jackson (1986) and by Dion and Tresier (1994).

The relations between perceived stress, anxiety and locus of control

-Our investigations demonstrated that there is a strong link between the level of anxiety as a trait and that of anxiety as a state and the level of stress perceived by teachers, which means that our hypothesis was confirmed. Thus, highly significant differences (p<0.001) were noticed in what concerns the effect of perceived stress on teachers whose level of perceived stress was above average, when compared to those whose level was below average. The relationship is, however, bilateral, in anxiety as a trait and anxiety as a trait can lead to an increase in the frequency and in the intensity of perceived stress, while the increased level of perceived stress impacts upon anxiety as a state, thus creating a vicious circle.

The relations between perceived stress, anxiety and locus of control in the case of female teachers are presented in the table below.

			III ICIIIa	ie teachers (II-133)
	Perceived	Anxiety	Internal locus	External locus
	stress		of control	of control
Perceived	-	.71 **	47 *	.75 **
stress				
Anxiety	.71**	-	41 *	.77 **
Internal locus of	47*	41*	-	61**
control				

The correlations (r) between anxiety, locus of control and perceived stress in female teachers (N=155)

External locus of	.75**	.77**	61**	-
control (through				
other people)				

* p<.002; ** P<.001

The relations between perceived stress, anxiety and locus of control in the case of male teachers are presented in the table below.

	Perceived stress	Anxiety	Internal locus of control	External locus of control
Perceived stress	-	.69 **	34 *	.69 **
Anxiety	.69 **	-	32 *	.65 **
Internal locus of control	34*	32*	-	51**
External locus of control (through other people)	.65**	.72**	51*	-

The correlations (r) between anxiety, locus of control and perceived stress in male teachers (N=81)

* p<.002; ** P<.001

The tables above show that in the case of both female and male teachers there are highly significant positive correlations (at p < 0.001) between *perceived stress, anxiety* and *external locus of control. However, there are negative correlations between the perceived stress and the internal locus of control in stressful situations.*

The hypothesis according to which, in highly stressful situations, male teachers manifest an internal locus of control more frequently or more intensely than female teachers <u>was not</u> <u>confirmed</u>. We believe that locus of control – in both women and men – is influenced by the person's nature and temperament, these being variables that we have not taken into account when doing this study.

- In the case of teachers we witness a certain connection between *the frequency and the intensity of perceived stress and the degree of depersonalization of personal relationships.* Thus, upon the administration of the Pearson Chi-Square (χ 2) test we noticed that the differences regarding the effect of perceived stress on female teachers with above-average levels as compared to those with average or below average levels of perceived stress are of little statistical significance (p = 0.02). However, in the case of the female teachers with above-average levels of perceived stress the depersonalization of interpersonal relationships occurs more often and with greater intensity.

Upon the administration of the Pearson Chi-Square ($\chi 2$) test we noticed higly significant differences (p < 0.000) in what concerns the effect of perceived stress on the depersonalization of interpersonal relationships in male teachers with above average levels of perceived stress as compared to those with below average levels. In the case of male teachers with above average levels of perceived stress the depersonalization of interpersonal relationships occurs more often and with greater intensity.

The hypothesis according to which in the case of teachers there is a strong link between the frequency and intensity of perceived stress and the degree of depersonalization of interpersonal relationships was only partially confirmed.

- In the case of teachers there is a certain connection between **emotional exhaustion** and **the degree of depersonalization of interpersonal relationships,** the hypothesis that this link is strong being only partially confirmed. Therefore, we can argue that the depersonalization of interpersonal relationships is the result of cummulative multifactorial agents, as there are certain personality traits that shape the stressors, thus modifying their impact.

In the case of **all the male teachers** there is a highly significant very strong connection (p <0.000) between emotional exhaustion and the degree of depersonalization of interpersonal relationships. Our research shows the existence of a strong link between emotional exhaustion and the degree of depersonalization of interpersonal relationships (at significance tresholds between p < 0.002 şi p <0.000) in the case of male teachers aged 23 to 50; this link is even stronger for the age-groups 23 - 30 and 31 - 40. On the other hand, the age-group analysis based on the criterion Chi-Square Tests (χ 2) shows that in the case of female teachers there is no significant link between emotional exhaustion and depersonalization. Consequently, age itself has neither a strong, nor a direct influence on the degree of association between emotional exhaustion and the depersonalization of interpersonal relationships in the case of female teachers.

- There are statistically significant differences between the means obtained by the populations from which the two samples (male and female teachers) were extracted in what concerns the *depersonalization of interpersonal relationships*, the significance threshold being p = 0.01. Due to stressful factors, female teachers exhibit a stronger depersonalization of interpersonal relationships than male teachers do.

- There is a certain link between the teachers' level of perceived stress, on the one hand, and their degree of professional involment and their feeling of professional fulfillment on the other hand. Thus, even under conditions of above-medium perceived stress, most female **teachers** (58.5 %) *display a medium or an above-medium level of professional involvement*. However, 41.5 % of the female teachers displaying an above-medium lavel of professional stress *display low levels of professional involvement*, being demotivated and unsatisfied by the results obtained.

- Of the **male teachers** with above-medium levels of professional stress, 25.7 % show decreased professional involvement, being quite demotivated and unsatisfied with their results and with their professional status. As different from female teachers, under conditions of *below-medium stress*, fewer male teachers show high levels of professional involvement, (only 8.7 % of the cases), most of them displaying low levels of professional involvement (54.3 %) and some exhibiting mean levels of involvement (37.0 %).

At first sight, the data presented above may seem surprising, **but** *we have to take into account the fact that the degree of professional involvement in the teachers' case, be it low or high, is determined by many factors.* Other researchers point out, as well, that there is no direct straight link between teachers' perceived stress and a lower level of professional involvement or their lack of motivation (Dionne-Proulx, 1995; Di Fabio, Majer şi Taralla, 2006), and this is due to the many factors involved in personal professional involvement and development.

- Another objective of our research was the analysis of **the relations between the level** of perceived stress and emotional exhaustion, on the one hand, and **the level of professional** involvement and the self-efficacy of teachers, on the other hand. By using the Pearson Chi-Square, Kendall and Gamma statistic criteria, wew have shown that there is a strong link (at p < 0.0001) between the level of perceived stress, emotional exhaustion and lower levels of professional involvement, in the case of both male and female teachers. Nevertheless, we cannot qualify this link as straight and direct, because the decrease in teachers' professional involvement is not always and in all kinds of circumstances related to the level of perceived stress and to that of emotional exhaustion, being definitely influenced by a multitude of cumulative factors. *The degree of teachers' professional involvement is connected to their feelings of self-efficacy*.

The teachers' level of perceived stress influences their self-efficacy in school activities. Thus, above-medium perceived stress diminidhes teachers' self-efficacy in the case of both females and males. The syntagm "teachers' self-efficacy" coined by Armour and co. (1976), was subject to various experimental approaches by means of many different instruments devised on the basis of two distinct theoretical trends: Rotter's 1966 theory about "locus of control" and Bandura's 1986 sociocognitive theory.

Successful task accomplishment provides the most important source of self-competence expectations. Successful experiences increase expectations of task-solving, while repeated

failures decrease expectations of professional success. In practice, these realizations urge the implementation of *a pedagogy of success*.

- Teachers with high-level stress and with an increased anxiety level, as well as with a diminished, predominantly external locus of control, must learn to master efficient coping strategies, by asking for psychological counseling or for psychopedagogical interventions, in order to prevent professional exhaustion. Moreover, in schools, it is essential to optimize classroom management, school management and the educational environment.

<u>Practical recommendations</u>: Teachers with high-level stress and with an increased anxiety level, as well as with a diminished, predominantly external locus of control, must learn to master efficient coping strategies, by asking for psychological counseling or for psychopedagogical interventions, in order to prevent professional exhaustion. Moreover, in schools, it is essential to optimize classroom management, school management and the educational environment.

Therefore, it is compulsory to ensure that the initial training and, especially, the continuous lifelong training of teachers, both offer more intensive psychopedagogical training regarding educational management, challenging behavior management and conflict solving management. At present, this can be accomplished mainly by offering such training during the MA program and by designing a specific curriculum for training courses.

COPING MECHANISMS EMPLOYED BY TEACHERS

In order to identify **the coping mechanisms used by teachers** we have analysed the data from the **Brief Cope questionnaire** filled in by the 236 teachers who participated in our investigations. In the Brief COPE questionnaire the alfa Cronbach coefficients for the various sub-scales vary between 0.601 and 0.902, except for that of active coping, which is of 0.502.

The relations between perceived stress, some psycho-social variables of the teachers and the coping strategies employed are systematized in the table below.

For the sample of teachers under investigation we have postulated *the hypothesis that there are highly significant correlations between the frequency and intensity of perceived stress, on the one hand, and anxiety, external locus of control and emotion-centered coping, on the other hand.*

In order to verify the hypothesis the correlation coefficient \mathbf{r} was calculated.

The correlations (r) between perceived stress, some psycho-social variables of the teachers and the coping strategies employed

	Anxiety	Internal locus of control	External locus of control	Social support	Problem -solving coping	Emotion centered coping	Avoida nce coping
Teachers' perceived stress (N=236)	. 75 ***	. 54 **	. 58 ***	25 *	. 45 **	. 55 ***	. 42 **

*** = highly significant correlation at **p** < **.001**

** = significant correlation at **p** < **.002;** (-) negative correlation

The table above shows that for the sample of teachers that we investigated *there are* highly significant correlations (p<0.001) between perceived stress, on the one hand, and anxiety, external locus of control and emotion-centered coping on the other hand. There is also a significant correlation (p<0.002) between teachers' perceived stress, on the one hand, and internal locus of control and problem-centered, as well as avoidance coping, on the other hand.

Our research data show that male teachers resort more often than female teachers to active coping (vigilent, problem-centered coping), while female teachers are likely to express their feelings, so they resort more often to emotion-centered coping. For the other forms of coping the employment frequency is similar in the case of both male and female teachers.

CHAPTER VII – dedicated to Study 3 – comprises the methodology and the data analysis regarding PERCEIVED STRESS IN THE CASE OF HIGH-SCHOOL PUPILS AND THEIR COPING STRATEGIES

2. RESEARCH METHODOLOGY

2.1. Research objectives:

- a) To identify the stressors perceived by female and male high-school pupils
- **b**) To investigate pupils' level of perceived stress

c) The factorial analysis of the *Adolescent Coping Orientation for Problem Experiences* questionnaire (B. Plancherel, R. Nunnez, M. Bolognini, C. Leidi and W. Bettschart, 1992).

d) To identify the stress management strategies employed by high-school pupils

2.2. Hypotheses:

- a) There are some significant differences between male and female 11th and 12th grade pupils regarding the assessment of stressors at school;
- b) There are some significant differences between 11th and 12th grade pupils regarding the assessment of the impact that the stressors at school might have upon perceived stress;
- c) There are some significant differences between male and female 11th and 12th grade pupils regarding the anxiety levels;
- **d**) There are some significant differences between 11th and 12th grade pupils regarding self-esteem;
- e) There are some significant differences regarding the use of certain coping strategies by male and female high-school pupils.

1.3. Participants:

217 pupils form Cluj-Napoca, of whom:

- 105 pupils in the 11th grade (60 girls and 45 băieți, of mean age 15 years and 3 months).
- 112 pupils in the 12th grade (62 girls and 50 boys, of mean age 17 years and 5 months).

Grade / Gender	Number	Mean age (standard
		deviation)
Girls – 11 th grade	60	15.2 (0.7)
Boys – 11 th grade	45	15.4 (0.6)
Girls – 12 th grade	62	17.4 (0.5)
Boys -12^{th} grade	50	17.6 (0.4)

The research was carried out in the 2007-2008 and in the 2008-2009 school year, during the second semester – the months of February through March.

1.4. Instruments of research:

a) The questionnaire regarding pupil stressors – which we have designed

b) The *Perceived Stress Scale – PSS*, elaborated by Cohen, Kamarack and Mermelstein, 1983) – translated and adapted.

c) The Spielberger Anxiety Inventory - *State/Trait Anxiety Inventory (STAI)* – translated and adapted.

d) The Coopersmith Self-Esteem Inventory – translated and adapted.

e) The A-COPE Questionnaire (translated into Romanian and adapted after The Adolescent Coping Orientation for Problem Experiences (Plancherel, Nunnez, Bolognini, Leidi and Bettschart, 1992).

2. The analysis of the data regarding perceived stress and its effects on high-school pupils

Data analysis showed the existence of great differences between the percentage of affirmative answers regarding *perceived stressors* in the case of 11th grade pupils as compared to 12th grade pupils at items referring to:

a) the necessity to study more intensively (stressor perceived by 67.8 % of the 12th grade pupils as compared to 52.2 % of the 11th grade pupils);

b) *the amount of work to be done at home for homework and class preparation* (stressor perceived by 54.4 % of the 12th grade pupils as compared to 30.4 % of the 11th grade pupils);
c) *a much too busy schedule* (stressor perceived by 61.0 % of the 11th grade pupils as compared to 68.6% of the 12th grade pupils);

d) *oral assessment and grading of knowledge and skills* (stressor perceived by 30.4 % of the 11th grade pupils as compared to 22.3 % of the 12th grade pupils);

e) *oral assessment and grading of knowledge and skills* (stressor perceived by 23.8 % of the 11^{th} grade pupils as compared to 16.9 % of the 12^{th} grade pupils).

Thus, the stressors perceived most frequently and more intensely by pupils are those related to study tasks, as well as to oral and written assessment, especially since the curriculum and the schedules are overloaded, requiring more intensive study. 12th grade pupils, who also have to prepare for the Baccalaureat, perceive to a greater extent the stress caused by *the need to study more intensively* and that due to the *the amount of work to be done at home for homework and class preparation*. In some cases, the effects of these stressors are intensified by the extremely high expectations, sometimes even exaggerated, on the part of teachers and parents.

Data analysis shows that the hypothesis regarding the existence of differences regarding perceived stressors in the case of 11^{th} grade pupils as compared to 12^{th} grade pupils has been confirmed.

With the exception of pupils' opinions on their parents expectations concerning their results at school, where there are insignificant differences (p=0.10), there are highly significant differences between the opinions of 11th grade pupils and those of 12th grade pupils in the case of the other major stressors regarding school activities.

By using the *Perceived Stress Scale* we studied and compared the scores pertaining to **the frequency of perceived stress in the case of 11th and 12th grade pupils**. The highest score possible in the case of perceived stress is 70.

Perceived score stress	Perceived score stress	Testul t
(medium and above-	(medium and above-	Pragul de semnificație (p)
medium level) for male	medium level) for male	
11 th graders (N=45)	12 th graders (N=50)	
m = 29.87	m = 35.70	t = 11.9639
$\sigma = 2.25$	$\sigma = 2.50$	p <0.01
Perceived score stress	Perceived score stress	Testul t
(medium and above-	(medium and above-	Pragul de semnificație (p)
medium level) for female	medium level) for female	
11 th graders (N=60)	12 th graders (N=62)	
m = 30.75	m = 41.40	t = 30.8160
σ = 1.35	$\sigma = 2.35$	p <0.01

The significance of the difference between the mean scores of perceived stress in the case of 11th and 12th grade pupils

The table above shows that in the case of 11th graders and especially in the case of 12th graders there are highly significant differences between male and female pupils regarding perceived stress frequency.

We identified highly significant differences (at p<0.01) between the mean scores of stress perceived by 11^{th} and 12^{th} graders, both in males and in females. There are significant differences between the scores of stress perceived by 11^{th} and 12^{th} graders, as well as between the scores of stress perceived by males as compared to those perceived by females. In both cases female shave higher scores than males, the frequency and the intensity of stress being higher in females than in males.

High-school students perceive stress quite often, with a frequency of 3 up to 5 depending on the questionnaire items. The scores for edium and above-medium levels of perceived stress are higher in 12th graders, as they also need to prepare for the Baccalaureat exam.

We must add that the tensions regarding the possible physical and psychological exhaustion of pupils, especially emotional exhaustion, at such times as those of testing knowledge and competencies, can cause **a state of anxiety and diminish their feeling of self-efficacy**. Thus, perceived stress in high-school students can determine an increase in their anxiety-state.

Our data show that even though in the case of female pupils the mean *anxiety as trait* is a little higher than in male pupils, there are actually no statistically significant differences

between female and male 11th graders, nor between female and male 12th graders in what concerns this form of anxiety.

Of great interest are also the data that we obtained in what concerns female and male high-school pupils' **anxiety-state**. The table below shows that even though female 9th graders display a mean of anxiety-state a little higher than that of male 9th graders, there are no statistically significant differences between males and females in this respect.

Comparing STAI – state scores obtained in the case of 9 th graders						
STAI – state scores	Mean	Standard	Test t			
(anxiety as state)		deviation	р			
Male 9 th graders	36.50	9.8	t=1.0394			
N=45						
Female 9 th graders	38.50	9.7	p=0.05			
N=60			(insignificant			
			difference)			

Data analysis shows that even though the mean scores in females are a bit higher. there still are no statistically significant differences, neither regarding anxiety as state, nor

anxiety as trait.

Comparing STAI – state scores obtained in the case of 9 th graders						
STAI – state scores	Mean	Standard	Test t			
(anxiety as state)		deviation	р			
Male 12 th graders	37.50	9.8	t=0.9395			
N = 50						
Female 12 th graders	39.25	9.8	p=0.05			
N = 62			(insignificant			
			difference)			

In both male and female 9th and 12th graders *the anxiety as state level is higher than* that of anxiety as trait, this being the result of everyday stressors, both situational and schoolrelated. Although both 9th and 12th grade female pupils display a mean score of **anxiety-state** a bit higher than the respective mean score in the case of males, there are no statistically significant differences between male and female pupils in this respect.

As for self-esteem, our investigations pointed out that there are highly significant statistical differences (p<0.005) în between the scores obtained by male 9th graders and female 9th graders regarding general self-esteem and social self-esteem (with regard to peers and friends, etc.). Male pupils got higher scores, which point to a higher level of self-esteem than that of females.

Mean scores	Male 9 th	Female 9 th	Male 12 th	Efemale 12 th
and	graders	graders	graders	graders
coefficients	(N=45)	(N=60)	(N= 50)	(N= 62)
regarding self-				
esteem per				
participant				
samples				
General self-	20.17	18.62	21.00	19.50
esteem	σ=2.29	σ=2.15	σ=2.54	σ=2.21
Social self-	6.07	5.67	6.00	5.86
esteem (with	$\sigma = 0.55$	σ=0.35	σ=0.52	σ=0.48
regard to peers				
and friends,				
etc.)				
Family-related	6.25	6.12	5.50	6.48
self-esteem	σ=0.67	σ=0.54	σ=0.37	σ=0.73
School-related	4.86	4.82	5.00	5.00
self-esteem	σ=0.24	σ=0.23	σ=0.28	σ=0.29
TOTAL	37.35	35.23	37.50	36.84

High-school pupils' self-esteem function of the gender and calss variables

The table above shows that there are differences between the mean scores obtained by male and, respectively female 9th graders, as well as between those obtained by male and, respectively, female 12th graders regarding *self-esteem (general self-esteem, family-related self-esteem and school-related self-esteem)*.

The analysis of the data concerning the comparison between the scores obtained by female 9th graders and 12th graders points to the fact that all the self-esteem coefficients for female 12th graders are higher than those for female 9th graders.

There are significant differences at p < 0.05 between the scores obtained by male 9th graders and 12th graders regarding general and school-related self-esteem, the latter having higher levels of self-esteem. In what concerns social self0-esteem (with regard to peer relations and friendships, etc.) there are no statistically significant differences.

There are no statistically significant differences between the results obtained from male versus female 12th graders regarding school-related and social self-esteem.

The analysis of the data concerning the scores of 9^{th} graders versus those of 12^{th} graders shows that there are statistically significant differences (p<0.005) *only in what concerns family-related self-esteem*, the former having higher self-esteem than the latter.

CONCLUSIONS REGARDING THE COPING STRATEGIES USED BY HIGH-SCHOOL TEACHERS AND PUPILS

1. The investigations that we carried out on **all the samples of teachers** show that *there* are highly significant statistical differences regarding the frequency with which the following stress management strategies are used by male and female teachers:

- *Active coping* – used more frequently by male teachers (p < 0.001);

-*Self-distraction* – used more frequently by male teachers (p < 0.001);

-Use of emotional support – used more frequently by female teachers (p < 0.001);

-Use of instrumental support – used more frequently by female teachers (p < 0.002);

-*Religion* – used more frequently by female teachers (p < 0.002);

-Venting – coping strategy used more frequently by female teachers (p < 0.000);

-Substance use – avoidance strategy used more frequently by female teachers (p < 0.000);

-*Behavioral disengagement* – avoidance strategy used more frequently by female teachers (p < 0.005);

-Denial – avoidance strategy used more frequently by male teachers (p < 0.005);

-Self-blame – avoidance strategy used more frequently by male teachers (p < 0.005);

We have noticed that *male teachers resort more often to active coping (vigilent problemcentered coping), while female teacehrs resort much more often to venting, to emotion-centered coping, so the hypothesis was confirmed.* When the situations are extremely stressful, many teachers enter a state of anxiety and use emotion-centered coping strategies or avoidance strategies.

2. In what regards the stress management strategies used by high-school male and female pupils, our data show that in order to solve various problems and cope with stressful situations pupils employ more types of strategies, depending on the specificity of each problem or situation that they have to face at school or elsewhere. Thus, the answers that pupils gave to questionnaire items point to the use of both avoidance strategies and active strategies, so problem-centered stress management strategies are used along with emotional coping.

On the basis of the results obtained by factorial analysis we have emphasized the way in which pupils choose the various stress management and/or problem-solving strategies, specifying the high-school pupils' manner of response to stressful situations.

Factors	Males	Males	Females	Females	Test t
	(N=95)	Standard	(N=112)	Standard	р
	Mean	deviation	Mean	deviation	-
F 1 – humour and fun	3.24	1.13	2.69	1.12	t=3.5037
					p<0.005
F 2 – substance use/ problem	2.86	1.21	2.87	1.18	t=0.0599
avoidance					p = 0.05
F 3 – negative feelings	2.41	1.08	2.47	1.04	t=0.4051
					p =0.05
F 4 – social relations/use of	2.84	1.15	3.30	1.13	t=2.8907
social support					p<0.005
F 5 – involvement in activities	3.42	1.18	3.45	1.05	t=0.1917
					p=0.05
F 6 – use of family support	2.82	1.11	2.81	1.15	t=0.0635
					p=0.05

The significance of the differences between the mean scores obtained by male and female high-school pupils regarding the coping strategies that correspond to the six factors

The data that we obtained show that the favourite response to problem situations is *the involvement in activities*, the mean score for males being 3.42 and for females 3.45. Consequently, both male and female high-school pupils choose active coping strategies, rational strategies of solving problem situations, in other words they prefer cognitive coping strategies.

The differences between male and female pupils are present when it comes to other stress management strategies. Thus, we noticed that male pupils focus more that female pupils on entertainment strategies, humour and fun (mean score = 3.24), while girls use more often than boys social relations, looking for social support (mean score = 3.30). However, both boys and girls look for family support very seldom when dealing with stressful problems, which can be explained by the age-specific psycho-social features, teenagers attempting to distance themselves for the authority of the family.

Female and male high-school students resort almost equally to avoidance strategies, the mean scores for "substance use/problem avoidance" being very close (2.86 for boys and 2.87 for girls). Consequently, in some problem situations high-school pupils resort to avoidance strategies, which, however, fail to solve their problems.

Both boys and girls resort to emotion-centered coping strategies, choosing to express their negative emotions and feelings to approximately the same extent (m = 2.41 for boys and m = 2.47 for girls).

Data analysis shows that <u>the hypothesis</u> according to which *the coping strategies used* by female pupils are relatively different from those used by male pupils has been partially **confirmed**, statistically significant differences being obtained only in the case of the following factors: "humour/fun" and "social relations/use of social support".

Our data show that, generally, the interviewed high-school pupils have insufficient trust in some of their teachers, school counselors or priests, in what concerns the support these might offer in order to help them solve stressful situations. Taking into account these data, we believe that teachers and, especially, school counselors should be more involved in the activities offering support to pupils, so that these may find solutions for the stressful situations confronting them. But, at the same time, we must state that some school counselors have to take care of more high-schools, being assigned huge numbers of pupils, which can explain the situation outlined above.

The way in which teachers and pupils deal with stress constitutes an important aspect both for their psychological adjustment and for the prevention of undesirable consequences that might affect school life.

2.THE IMPORTANCE OF OUR RESEARCH.

- Our investigations pointed out the usefulness of exploratory-correlational research for the identification of school stressors, of the effects that stress has and of the coping mechanisms used by teachers and students.

- An original contribution of this Ph.D. thesis lies in the interactionist model devised by its author, namely the interactionist model of the stressful factors' influence on the occurrence of professional exhaustion symptoms in the case of teachers, a model whose usefulness was confirmed during the investigations that we carried out.

- Once the most frequent and most intense major stressors in school were identified, we have brought to light the way in which one can analyse the dynamics of burn-out symptoms occurrence, the correlation between these symptoms, as well as the management strategies that have a positive effect in burn-out prevention.

- Up to now, the prevention of stress and of teacher burn-out symptoms was based mainly on the implementation of measures meant to develop individual competencies. However, these interventions have proven to be insufficient, because they should be accompanied by measures that can optimize the work environment. This is precisely why we have devised and recommended for implementation in schools the resilience increase intervention program, which is based on two modalities: a). the development of personal organizational stress management strategies by making use of cognitive-behavioural techniques; b). resilience development strategies and methods by using stress management techniques at the organizational level, in all the educational institutions. By employing coping mechanisms, one can develop one's personal problem-solving abilities, and, at the organizational level, supportive relationships are optimized and so are the opportunities to participate in and to exercice some influence upon the decision-making process within schools, all these having a positive influence on *resilience*.

- The data we obtained bring arguments in favour of the necessity to increase the preoccupation with the prevention of stress in the educational environment, by using *preventive measures centered on professional environment and activity management, employee-oriented measures* and, especially, *combined measures*.

- It is important for professional training to be organized in order to offer information regarding stress-prevention and stress-management, and also concerning the use of efficient coping strategies (preventive coping strategies, problem-centered coping strategies).

- The results that we obtained bring forth new arguments regarding *the importance of psycho-pedagogical counseling in schools, as this has a positive impact on the prevention of dysfunctional effects that stress has on both teachers and pupils, this working to activate their effective coping strategies.*

We must state that the initial training and the continuous training of teachers by revising the curriculum in a constructivist way play a crucial role in the construction of professional identity, of a strong educational environment, in the facilitation of teachers' professional development and self-efficacy, of their positive self-image and self-esteem.

SOME OF THE LIMITATIONS OF OUR RESEARCH

Due to the fact that most of our subjects, both the teachers and the pupils, were female and not representative on the national level, given that they were all from Cluj county, the validitz of our observations is somewhat limited. It may be assumed that in other counties the hierarchy of the stressors perceived by teachers and pupils might be different, depending on the specific of each institution.

We must also take into account the fact that the predictive validity of some results yielded by our research should not be viewed as definitive, given the dynamics of change within the Romanian educational system, still marked by changes impossible to predict, such as those affecting the structure of the educational system, the curricula, the salaries, the vacancy-filling competitions, etc.

NEW DIRECTIONS OF RESEARCH

The issues discussed in this doctoral thesis and the results of this research most definitely open new avenues for further research, given the cumulative multifactorial determination of the stress perceived by teachers and pupils, as well as the multiple biopsychological and socio-cultural factors that influence stress-reactions and coping mechanisms.

Future research attempts might take into account the results of this research while investigating larger groups of teachers and pupils, from various educational institutions, both from the urban and from the rural areas throughout our country. Thus, on the basis of ecologically valid research, going beyond situational variations, one could find, at least for short-and medium-term periods, the bearing of the invariants pertaining to the stressors and stress situations perceived in schools, which are likely to cause emotional exhaustion in the case of some teachers, or challenging behavior on the part of some pupils.

Moreover, we are well aware of the fact that at various times in the future such research will have to be undertaken again, in order to assess the stressors and the stressful situations perceived by teachers and pupils, especially because the results of the implementation of the present legislation should be evaluated, as well as due to the lack of any clear views or perspectives on the evolution of our national educational system on medium- and long-term.

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