

The Impact of Teachers' Reactivity to Stress on Gestures

Alina Mărgărițoiu

Educational Sciences Department, Petroleum-Gas University of Ploiești

Abstract

Professional and personal life of Romanian teachers knows nowadays an accentuated dynamics due to major and rapid changes regarding assessment, curricula, methodology, organizational management, and informational technologies etc. In this context of educational changes, our paper aims to present an investigation with reference to the influence of teachers' stress reactivity on gestures and the impact of this correlation on teacher – student relationship. Developed in three high schools from Ploiești city, the design of the research comprises three stages: investigation of stress reactivity with the questionnaire on a sample of 227 teachers, of which we have selected 100 to be observed by students; the stage of selecting and preparing the sample of high school students to be observed; the stage of observing the gestures the observance grid of the 100 teachers by students, each teacher being observed by 5 independent students. The results of the research reveal a rather large number (30%) of teaching staff with high reactivity to stress. An important finding is the high frequency of dysfunctional gestures to teachers with the high reactivity to stress: rigid posture, threatening or bored face expressions, up-down visual contact with students, tapping with hand or pencil on the desk, pointing the index finger to the chosen student etc. with negative effects on students. Based on research findings, we proposed a program meant to develop skills for stress management and efficiency of gestures in didactic communication, which to be implementing in all schools, etc.

Keywords: reactivity to stress, gestures, didactic communication.

Theoretical background

In the context of actual educational reform, major and rapid changes represent a possible source of stress for teachers, which could negatively influence the level of teachers' relationship with their students. The new standards and skills provisioned for teachers in procedures and methodologies transform them in "Olympics" in the bureaucratic marathon of the education system. *Centring on student* (on their interests, skills and expectancies) is often overshadowed by *centring on criteria* (evaluation criteria, research criteria, promotion or even holding one's job). This situation – reaching professional standards and problem solving – makes teachers' roles and responsibilities be much more complex: from preparing teaching contexts (selection, synthesis, customization, contextualization, valorisation etc.) and engaging students in learning activities, to conducting educational researches, participating in Conferences and Commissions, implementation of national and international educational projects, etc.

We consider that it's necessarily to investigate the influence of teachers' stress reactivity on the didactic (gestural) communication. Teachers' gestures are the first ones that transmit their emotions, feelings and attitudes, being an inexhaustible source of information about their psycho-affective structure. In stressful situations, emotional estate of teachers could be impregnate by twitter, discomfort, tension, worries or fatigue, exhaustion due to the process of producing hormones which determine raising blood pressure and heart rhythm. Some of the body's reactions to stress are easy to predict. Managing stress begins with learning the signs and symptoms of stress:

- physical symptoms: indigestion, ulcers, high blood pressure, muscular tension, colds or other illnesses, fatigue, headaches, backaches, pounding heart, insomnia, stomach queasiness;

- emotional symptoms: irritability, anger, aggression, fear or anxiety, depression, feeling overwhelmed, mood swings, frustration;
- cognitive symptoms: difficulty of concentrating, forgetfulness, unwanted or repetitive thoughts (Aldwin, 1993).

The researches carried by several specialists (Grant & Hennings, 1977; Neill 1991; Goldin-Meadow, Kim & Singer, 1999; McNeill, Alibali & Evans, 2000; Andersen, 2007) show that the efficiency of teaching and educational relationship is also due to gesture communication of the teachers. Students learn and understand better knowledge when the teacher is in front of them and accompany their speech with gestures (Valenzeno, Alibali & Klatzky, 2003: 188-204). Also, the study of J. Comstock, E. Rowell and J. W. Bowers (1995) demonstrated the importance of nonverbal closeness on students learning (apud Chelcea, 2004: 39).

Also, the gestures' role in didactic communication is illustrated for many functions: accompany, complete, accentuate, replace, and regulate verbal communication; orientate students' attention; illustrate objects and phenomenon; stimulate memory and motivation; betrays emotion and express attitudes; defines personality and the nature of teacher-student relationship.

Research Design and Methodology

The main purpose of our research was to investigate the influence of teachers' stress reactivity on the didactic (gestural) communication and the impact of this correlation on teacher - student relationship.

Participants and procedure. In order to reach this purpose, we conducted a survey on a sample of 100 teachers, which comprises three stages:

1. Investigation of stress reactivity on a sample of 227 teachers from three high schools with different specializations from Ploiești town: 95 teachers from an *Industrial* high school, 75 teachers from the *Art* high school, 57 teachers from the *Pedagogical* high school. From these 227 subjects, we have selected 100 teachers to be observed by students, 50 teachers with high reactivity to stress and 50 teachers with low reactivity to stress;
2. Selection and training of 500 high school students to be observers (from the three high schools involved in our study);
3. Gestures' observation for the 100 selected teachers: 41 teachers from the *Industrial* high school, 39 teachers from the *Art* high school, 20 teachers from the *Pedagogical* High school. In this stage of research, each teacher have been observed by 5 independent students.

Research methods were chosen in order to achieve our study purpose:

- to measure teachers' reactivity to stress we have applied the *Stress adaptability questionnaire* on the original sample of teachers (227 subjects from which we have selected 100 subjects);
- to observe teachers' gesture communication, students trained to be observers have filled the *Gesture observance grid*.

Results and Discussion: the Pandora's box

The results obtained after applying the *Stress adaptability questionnaire* reveal a relatively large number (30%) of teachers with high reactivity to stress; this is worrying if we consider the fact that the harmonious didactic communication depends on the physical, mental and emotional health of the teachers. The important results obtained after applying the *Gesture observance grid* demonstrated the influence of high reactivity to stress on the frequency of dysfunctional gestures in didactic communication:

a. Teachers with high reactivity to stress enter the classroom more frequently with a rigid posture or a stooped posture, as compared to the teachers with low reactivity to stress that adopt a relaxed posture (Pearson Chi-Square coefficient ranges between 12.04 to 18.68, $p < 0.01$). The rigid or stooped posture of the teachers with high reactivity to stress indicates tension, stress, superiority, arrogance or inadequacy, fatigue, burden, mental states that are characteristic of stress. The fact that a teacher's body adopts postures that better suit its psychic state (in our research stress in particular) is explained anatomically by "the smooth muscles, led by neuro-vegetative system, which take 400 longer than striated muscles to relax after a period of unrest" (Turchet, 2006: 188). By flexing the trunk, the teacher appears "weaker and smaller" thus contributing to the attitude of being defeated / overcome by problems. Fatigue and disappointment are causing this "compaction" by bending, while the feeling of defeat is perceptible in the head bent posture. Analyzing these differences in teachers' body posture depending on reactivity to stress, we can mention that the results come to reinforce the claims of other researchers (Pease, 2001; Andersen, 2007; Chelcea, 2004) on the connections between posture and self-image, feelings and emotions experienced, health and mood, the attitude towards interlocutors. When the teacher has a positive self-image and is balanced s/he adopts a *relaxed and flexible posture*, which is appreciated by students because it indicates a state of psychophysical good health and an open, positive and constructive attitude. The straight and relaxed posture of the teacher is the "expression of competence, balance, confidence and strength". (Andersen, 2007: 99)

b. Teachers with high reactivity to stress have threatening or tired facial expressions during the didactic communication, unlike the teachers with low reactivity to stress who have an amicable facial expression during their interactions with students. Our statistical analysis of the

survey's data reveals that there are significant statistical differences based on teachers' reactivity to stress regarding their facial expression during didactic communication (Pearson Chi-Square coefficient takes values between 27.48 to 37.13, $p < 0.001$). Like the posture, the facial expression of the teacher plays an important role in didactic communication: when it expresses sociability it has the function to encourage, involve, stimulate students to communicate and when it reflects fatigue, threat it represents a dysfunction which inhibits, intimidates, discourages students to communicate.

c. Teachers with high stress reactivity establish top-down eye contact more frequently as compared with the teachers with low reactivity to stress that establish direct eye contact with students (Pearson Chi-Square coefficient ranges from 10.17 to 17, 46, $p < 0.05$). The functions of visual contact have a special relevance in didactic communication as well: they regulate informational flux, monitor feed-back, express emotions and feelings, indicate the nature of interpersonal relations, compensate for the increase in distance, etc. establishing and maintaining visual contact represents the guarantee of sincere communication between teacher and students, offering trust, strength, confidence, interest and availability for communication. Establishing top-down eye contact is a dysfunction in didactic communication, as it shows superiority, arrogance, pride, non-cooperation, compared with the direct gaze that expresses interest, trust, openness, collaboration.

d. Teachers with high reactivity to stress use with a higher frequency the index finger/a writing tool to single out a particular student (gestures that represent a dysfunction) as compared to teachers with low reactivity to stress that use the repositioning of the body, a nod, eye focus, movement or touch the chosen student (gestures representing functions in relation to students).

Although frequent in communication, fingers use is very unequal. The index finger, the most expressive of all five, can play various roles in didactic communication: explorer, threatening, guiding, revolver, inventive, curious, proving (when directed towards interlocutor as if asking for proof), doubtful (when positioned under the lower lip with the rest of the fingers forming a “beard”), etc. The index finger participates in accomplishing many gestures with different meanings, thus playing a variety of roles: calling a student (by flexing the finger from outside to inside of hand, with the clenched fist oriented up); calming an undisciplined student (by raising the index finger and holding it up for a few seconds); saying no to a student (by horizontally moving the index finger held up with a clenched fist); admonition of an undisciplined student (vertical motion of index finger with a clenched fist); dominating an undisciplined student (by orienting the index finger towards the student as a “wand”). In our research, pointing the index finger towards the student represent a dysfunction, because, in accord with speciality literature this gesture can be decoded as an aggressive gesture; it is associated with an arrow/knife (Rück, 2001). A teacher who often uses the index finger wants to impose its authority over students. Therefore, there are significant differences depending on reactivity to stress in choosing students during the didactic communication (Pearson Chi-Square coefficient takes values between 17.05 to 26.62, $p < 0.05$).

e. Teachers with high reactivity to stress capture students' attention using more often the following gestures: hit the desk with their hand or a pencil, point their index finger at students, stomp their feet nervously, frown or raise their eyebrows, gestures that signify a dysfunction in the didactic communication because they amplify indiscipline by the noise involved (Pearson Chi-Square coefficient ranges from 21.37 to 31.59, $p < 0.01$). Still using the Observation Grid we found that teachers with an increased reactivity to stress – producing

malfunctions in didactic communication – have negative effects on students and the gestures of teachers with low reactivity to stress – producing functions in the didactic communication - determine positive effects on students (Pearson Chi-Square coefficient ranges from 25.01 to 36.95, and $p < 0.001$).

Content analysis indicates that: the gestures of the teachers with high reactivity to stress (e.g. rigid or stooped posture, threatening or apathetic facial expression, pointing with the index finger, tapping the desk with their hand, frowning, etc.) have negative effects / produce negative feelings on pupils: intimidation, distancing, humiliation, dislike, discourage, inhibition, aggression, inferiority complex, anxiety, frustration, etc.; the gestures of the teachers with low reactivity to stress (e.g. relaxed posture, amicable facial expression, repositioning the body towards the student, tilting the head towards the student, etc.) causes positive effects / feelings in students: proximity, responsiveness, reliability, honesty, cooperation, stimulation, participation, understanding, trust, credibility, interest, respect, motivation, optimism, relaxation, etc.

Conclusions: Gestural Communication Efficiency Program

In conclusion, the teachers with high reactivity to stress develops dysfunctional gestures: rigid posture, threatening or bored face expressions, up-down visual contact with students, tapping with hand or pencil on the desk, pointing the index finger to the chosen student, purposefully regarding the watch, touching or playing with accessories etc. These dysfunctional gestures have negative effects on students: frustration, distancing, inferiority complex, aggressively, anxiety etc. The success of educational reform depends directly on professional and psycho pedagogic training of teachers, on their soft competencies necessarily to deal with

delicate situations in classrooms (communicative performance, emotional intelligence, negotiating and solving conflicts, developing gestural communication).

Based on our research findings, we proposed a program meant to develop skills for stress management and efficiency of gestural communication. Exercises and reflection issues of this program have followed to enable teachers with gestural communication competences like:

to analyse the impact of gestures in didactic communication; to code and decode correct different gestures; to capture students' attention with gestures; to identify specific gestures of students with behaviour difficulties; to eradicate dysfunctional behaviour of students using gestural communication; to identify gestures' role in students' motivation; to analyse gestures in cultural context etc.

As future direction of our study, we intend to analyse the impact of our Gestural Communication Efficiency Program for pre-service and in-service teachers training programs developed in all schools.

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