

The role of everyday stressors on primary students' language learning

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Abstract

Paper deals with the role of stress in the process of learning of pupils, younger students at primary school. It is based on literature review, and the term stress is discussed in general, as a condition in the environment as well as an internal condition leading to specific responses of an individual. It is a complex topic described from neuroscientific, biological, pedagogical and psychological point of view. The main goal is to describe stress and identify different resources of students' stress and to refer how various levels of everyday negative pressure and anxiety can affect individual's cognitive processes, his emotional state and well-being, as well as behaviour in school environment. In this review, following issues are examined: what stress is, how it functions and what kinds of stressors are experienced in primary students, what kinds of symptoms are associated with it, how a reduced ability to regulate negative emotions as stress and anxiety impacts foreign language learning, and what coping methods and techniques can be applied for reducing foreign language anxiety in school environment.

Keywords: *emotions and stress, younger students, school environment, foreign language learning, coping methods*

Introduction

Teachers are responsible for creating school environment, either positive or negative and affect the process of learning in schools. Student's feelings about education has significant impact on the cognitive reactions. Emotions and learning generate unique entity working together (Walker Tileston 2005).

It is a proven fact that emotions play an important role in individual's motivation and learning. We often listen to the complaints of teachers that students are not motivated to learn. There arises a question why it is so but much more important is what we as teachers can do with it. The student's decision whether to engage in the learning is mostly inner conscious process, however teachers can influence that decision by their approach to teaching and learning, by creating supportive environment. Goleman (1995) emphasizes responsibility of the teachers who have to provide conditions for care and learning.

Emotion can be explained as physiological activity increasing or decreasing in intensity that is demonstrated by feelings, characteristic behaviour, or expressions of face. It consists of feeling, arousal, purposive and expressive components coordinating together. Coming out of these definitions, we can distinguish physiological, neurological, or cognitive theories. According to Singer's cognitive theory, identity of the emotion depends on cognitive judgement of the situation, while physiological excitement contributes only to emotion's intensity. Psychological arousal refers to degree of alertness and awareness to the outside world. Neuroscience operates with terms primary emotions, they are preorganized, automatic, arising from sensorial experience, and secondary emotions which require higher order processing and are acquired through learning and experience (Kamenická & Kráľová 2021,

Garrett 2009, Zillmer, Spiers & Culbertson 2008, Lefrancois 1997). Sousa (2001) and Jensen (2008) emphasize impact of emotions on the brain. Reduced brain's ability to process cognitive information depends on emotional responses. Neuroscience also confirmed impact of stress on an individual's ability to take advantage of learning opportunities. Expectations of negative possibility of failure affect cognitive processes as memory, retrieval, attention, perception, thinking, speech, creativity. When students feel threatened, they operate in mode where learning can take place with much difficulty. Goleman (1995) said that stress make us stupid because an individual under the stress cannot learn, make decisions clearly, or remember. What stress is and how affects students at primary school is going to be discussed next.

Anxiety and stress

When a student does not feel secure and comfortable in the school environment, full advantage of learning cannot be expected. Stress will inhibit the urge to explore and interact with others, thereby the process of learning and development of skills is inhibited. In general, it is a pressure person feels from something happening around him or to him.

It has to be taken in consideration that there is a difference between acute stress which arises from factors that have a clear start and end (e.g, a pupil is afraid of test) and chronic stress, based on factors which are long lasting without clear end (e.g., learning disorders, neglect). Each brain and body respond to the stressors differently (Whiting et al. 2021).

Neuroscience emphasizes significant role of the brain concerning emotions, especially limbic system, amygdala, and hippocampus. Limbic system is a very complex structure of nerve pathways and networks which governs several processes in the body directed to self-preservation, the expression of fear, anger, and pleasure. In educational context, it is linked to establish memories. The amygdala is a small formation of grey matter inside each cerebral hemispheres involved in emotions, mood, has affective value and plays a crucial role in emotional processing. It may involve responding to emotionally significant stimuli in general but most research has been focused on its role in fear and anxiety. Hippocampus concerns behaviour governed by emotions, is connected to amygdala and associated with memories. Fear is a well-researched primary emotion, which is conditioned through loud noise, shock, or trauma. The first-order emotions trigger rapid and automatic action with minimal cognitive effort in perceiving and imaging and are often connected to early development. They include interest, happiness, enjoyment, sadness, anger, disgust, fear etc. Social emotions depend on learning, they interact with individual's cognitive perception of the social setting, for example, shame, embarrassment, pride could be experienced in social interaction. Complex emotion schemas involve interaction among feelings and higher cognitive processes such as thoughts, strategies, goals responding to complex combination of emotions. Emotionally experienced feeling is still linked through the limbic system. However, second-order emotions are processed at higher cognitive levels and arrive to limbic system via different cortical pathways than primary emotions, which come through sensory experience (Zillmer, Spiers & Culbertson 2008, Izard 2011, Conkbayir & Pascal 2018, Kamenická & Králová 2021). Garrett (2009) distinguishes between fear as an emotional reaction to a specific imminent threat and anxiety as a concern about future uncertainty, it is a feeling characterized by varying degrees of worry. The aim of the paper is not to look for differences in terms anxiety and stress, both terms work with negative stream of emotions and in literature are often used as synonyms.

Jensen (2008) describes stress as a body reaction to a perception, not to reality. It occurs when person realizes reactions coming out of experience on unfavourable situation or person. Individual also realizes his emotions are out of control or loses control in the situation and goals can be compromised. If person changes perception, changes a level of own stress. Level of stress can be influenced by outer situations and individual's view of them, for someone it can be stimulating, for other disturbing

(Brobeck et al. 2007, Whiting et al. 2021). For emergence of stress is enough to expect negative possibility and imagination of failure.

Baqutayan (2015), coming out of scientific literature, distinguishes different meanings of stress. First, stress is an external condition coming out of any environmental stimuli that causes unpleasant feelings, arousal, or tension in a person. Second, it is the inner mental state of tension, which is associated with subjective response of an individual. These processes can support individual's growth, but on the other hand, also produce mental strain. Finally, stress as a reaction to negative events impacts the body as well. These physical reactions can function as a support of psychological or behavioural effort at coping.

We can conclude that stress is a condition in the environment which has unusual requirements on the organism as well as internal condition when the individual responds to a stressful circumstance. Whether it is negative pressure to the person depends on individual differences in perception of the event or in physiological reactions (Garrett 2009, Whiting et al. 2021).

Neuroscientists look at the stress from the point of brain functioning. Joëls and Baram (2009) describe stressor as any potential or actual disruption of an individual's environment perceived by specific regions in brain. Stress mediators are bind to receptor target and act on specific neuronal populations resulting in unique effects, they form the stress response which let an individual to adjust to the changing setting. Stress demands immediate changes in behaviour and modifies future behaviour. It is reached by the modulation of neuronal functioning at several levels of the CNS, which is responsible for learning, decision-making, memory as well as hormonal and emotional responses. Different responses are result of different types of stressors, for example psychological ones such as school exam, shyness, embarrassment, involve stress mediators in regions of the brain that subserve learning and memory (the hippocampus), decision making (the prefrontal cortex) and emotion (the amygdala and the prefrontal cortex). Authors emphasize that multiple influences as stress duration, genes, context, sex, age affect response through multiple mediators such as noradrenaline, cortisol, serotonin, dopamine, vasopressin etc.

As mentioned above, the human body is individually responsive to the situations through neurotransmitters, stress hormones change the way how person thinks, feels, and acts. Stress is a known inhibitor to learning due to a cortisol hormone, which is released in the moment of threat. High level of cortisol can destroy brain cells and weaken connections, result is in reduced capacity to learn, especially interfered with perception, weaken memory and retrieval. In students, frequently exposed to stressful experiences cortisol level remains raised higher and longer and has significant impact on immune system and the whole body (e.g., often is reported a cold sore in students, Whiting et al. 2021). Chronic stress weakens ability to decide what is important and what is not. The connection between various cells depends on how the young student is treated (Conkbayir & Pascal 2018, Zajacová 2009). Another stress hormone, adrenaline, affects blood circulation by increasing heart rate, rate of breathing, sugar metabolism and metabolic rate in general and prepares the body to fight-or-flee responding. In stressful situation the release of adrenaline might result in modulation of memory proportional to its importance and contributes to encode the emotionally arousing events. Level of noradrenaline affects sensory stimulation, attention, formation, and retrieval from working to long-term memory (Kamenická & Kráľová 2021).

Individuals are sensitive to environmental influences in different ways and genetic inheritance play a role as well in some degree of resilience or vulnerability (Whiting et al. 2021). In literature, we can meet the terms orchid children and dandelion ones in connection with adjusting to the stress in early years. Orchid children are defined as highly sensitive, more liable to the environmental stressors and dandelion ones are able to survive just about any set of circumstances. Most children are generally tolerant to the stresses of childhood, but we can find the group of children who are too sensitive and anxious, and they are unable to cope with it even later in the school environment (Featherstone 2017). Boyce (2019) explains that epigenetic processes in which environmental cues regulate the expression of genetic

differences are likely regulators of individuals' susceptibility to environmental influences. Science also suggests that genes and environment contribute to the emergence of above-mentioned types of students differing in temperaments and stress sensitivity interactively, but there was no real idea until recently how this interaction happens.

Stress can be categorised on the scale from positive, good stress (eustress), that is essential part of healthy development and beneficial for students. A rise of stress hormones like cortisol, adrenaline and noradrenaline helps students to practise stress management in the safe situations and enhance learning. Then there is tolerable stress, which is not easy to manage but, students can cope with it if they have supportive relationships and stable environment.

Negative stress (distress) occurs when students feel danger, fear, rejection, or failure. They are confronted with a problem which do not want to solve, don't perceive problem solution, do not have enough resources for problem solving, have little or no control over the situation, experience repeating stress. Finally, toxic stress is dangerous and damaging type of stress, particularly if the student has little or no adult support. For younger children it can include physical and mental abuse, extreme poverty, neglect. Development of the brain can be affected by level of neglect and can cause the change in the whole mechanism of responding (Featherstone 2017, Jensen 2008). When brain activates defensive mechanisms, it is important for survival but not for learning and it causes inability to solve problem situation. Identification of the nature of the stress can help to cope with it. Whiting et al. (2021) emphasize that student's level of stress response in each educational situation influences his learning capacities in complex ways.

Displays of anxiety and stress in primary students

Children are affected by stress as well as adults. However, students at primary school experience different factors causing stress, and it affects how they respond to new stressors emerging in educational context (Whiting et al. 2021). At the beginning of compulsory school attendance, they need to take a new role and adapt to new situation, which generate stress. Change of daily routine, new teachers, rules, and duties are all challenges they have to face to. Flores-Buils and Andrés-Roqueta (2023) found out that level of stress is higher in the first years of primary school and school adaptation is stressful to all students equally doesn't matter what's their sex. There was no significant difference in level of stress perceived by boys and girls even later in higher grades. Brobeck et al. (2007), Leung et al (2010) support findings that stress from schoolwork increases with age as in boys so in girls, and they experience a strong pressure to attain good academic achievement.

The individual perceives the same situation differently, evaluates it and reacts in various ways. In general, stressors may come from environment as well from student's nature and depends on individual sensitivity to stressful situations. Brobeck et al. (2007) point to the fact that pupils usually express the symptoms of stress openly, but there are also pupils exhibiting no symptoms. Müller de Morais (2019) considers anxiety or stress as a reaction reflected relatively independently in 3 systems, in motoric behaviour, verbal cognitive reactions, and physiological reactions. These systems can be described by particular symptoms:

Motoric behaviour is displayed in unpleasant and stressful situations, in which anxious students tend to avoid them, escape, postpone difficult tasks; ask for help, ask somebody to solve the problem instead of them; express aggressive, harmful behaviour including shouting, swearing, accusing others, mocking, threatening oneself or others till physical attacking, fighting; or freeze from fear, be unable to move; express nervous behaviour like biting the nails, inability to sit calmly, avoiding direct eye contact, laughing, crying etc.

Verbal-cognitive reactions express anxiety in thinking, they are based on worries arising in mind and usually aimed at future; negative thoughts come to the mind as negative statements which come automatically without conscious control and lead to giving up, resignation, feelings of helplessness,

catastrophic imaginations or to complaining. Worrying increases inner tension and purposeless of activity (what if), negative thoughts and imagination lead to regret and resignation (I am not..., I cannot..., I will not...).

Physiological reactions are represented by unpleasant physical symptoms like tension, shaking, irregular breathing, sweating, fast heart rate, dry mouth, tightened muscles, pale or red/hot skin etc. In psychology is well-known term "fight or flight" response, which points to an automatic physiological reaction of a body to the dangerous, threatening, or frightening situations (Whiting et al. 2021). Tiredness is the most common psychosomatic symptom in pupils, also stomach-ache in 6-7-year-olds, and headache is increasing with age as well. Younger students often express physical reactions, but with getting older reactions become more of psychological origin (Brobeck et al. 2007). In fact, thoughts, emotions, physical reactions, and behaviour affect each other mutually.

Russell (2000, in Zajacová 2009) describes various symptoms of distress, which has been divided into the following categories. Physical symptoms are headache, back pain, tiredness teeth grinding, exhaustion, stomach-ache, cold, sleeplessness, increased temperature, rashes, facial redness. Emotional symptoms are manifested by crying, fear, anxiety, nervousness, depression, suffering, tension, mood changes, irritability. Mental symptoms are lack of interest/motivation, negative attitude, forgetfulness, lack of concentration/low attention, confusion, indifference, disgust, lack of creativity. Social symptoms are lack of care of yourself, lack of social contacts, isolation, loneliness. These symptoms are result of various stressors as reported in research findings presented in the paper of Brobeck et al. (2007). Students from 8 to 13 years have seen stressful that parents don't spend enough time with them, they have nothing to do, they need to get good achievement. Among the stressors that affect primary student were affirmed a feeling of loss, as well as fear of conflicts in relation to parents and friends.

Students differ from each other in their ability to cope with different degrees of stress and symptoms. On one side there are calm and controlled students who show little response to stress and are able to manage it. They recover immediately and show no after-effects. On the other side, there are students who respond badly to even very low-level of stress. They can display highly externalised behaviour mentioned above. The psychologists and neuroscientists exploring the effects of early stress, such as violence and neglect, are finding some evidence that sensitivity to cortisol is built into our individual genome, giving each of us a personal stress response level. Students with naturally higher level of cortisol and less effective way of managing it can pose problems for teachers. They often suffer from such difficulties or conditions as anxiety, attention deficit hyperactivity disorder (ADHD), heightened risk-taking and antisocial, or violent behaviour. They may need support and extra time to prepare for and recover from stressful situations and events (Featherstone 2017). There are also findings that children who show the biggest response to new stressors are those who have either the highest, or the lowest levels of life-long stress exposure. Children who show the lowest response to new stressors are those who have experienced intermediate levels of life-long stress (Ellis & Boyce, 2008). In 5-year-old interviewed Swedish children, the stress was associated with fear of being late for school; feeling of not having enough time for schoolwork, fear of being unable to produce satisfactory results. Particular mental symptoms described by pupils were sadness, nervousness, anger, lack of concentration, forgetfulness, and carelessness. It also needs to be emphasized that due to the age of children, they had perceived acute, not chronic stress connected to specific situation. However, everyday problems may have a great impact on individual's well-being and health (Brobeck et al. 2007).

Benjamir and Walz (1990, in Baqutayan 2015) see stress as interaction among the nature of the stressor (manageable everyday pressures or life-threatening situations), the environment (the school climate, interpersonal relationships), and the individual's sensitivity to stress (health, support, resilience). Individual differences cause that what is positive challenge for one student can be under or over stimulated for another one and it causes reducing effective learning. Individual's response may vary from day to day, even hour to hour depending on his appraisal of the situation and available coping

strategies. During exposed to high stress, students are more distracted by the environment, and it is difficult to be involved in planning and attentional control, they are more likely engaged in habitual behaviour due to reduced executive functions (Whiting et al. 2021). However, teacher support plays a key role in the well-being of the students in the educational context.

Impact of anxiety on foreign language learning and coping methods

Acquisition of mother tongue is relatively natural process. From the very beginning, a child is exposed to language, uses language for communicative purposes in everyday life, learns to differentiate all the elements and levels of language gradually due to cognitive speech development. However, situation is changing when new language, different from mother tongue, comes to the play. Foreign language learning can cause problems and be a source of stress when student comes into the contact with foreign language mostly or only in the school during the instruction.

Level of stress and anxiety may have negative impact on student's language learning and performance (Russell 2020, Leung et al 2010). Kráľová (2019) describes predictors of successful foreign language learning which relate to individual characteristics. She distinguishes cognitive factors like language capabilities and learning aptitude, learning styles. Affective factors, for example motivation, attitudes, self-esteem, inhibition, anxiety. Then metacognitive and finally demographic factors. Horwitz, Horwitz and Cope (1986: 128) conceive foreign language anxiety "as a distinct complex of self-perceptions, beliefs, feelings, and behaviours related to classroom language learning arising from the uniqueness of the language learning process".

The term language anxiety is more often used in context of language learning instead of the term stress and is recognized as a mental block against foreign language learning related to the student's negative emotional responses towards language acquisition (Kráľová 2019) and can be defined as a situation specific anxiety developed from negative language experience and difficulties which leads to anticipation of further ones. Consequently, students have difficulties in processing linguistic material, have lower academic success, have disrupted social-communicative process, or lower willingness to communicate (Kamenická & Kráľová 2021). Negative emotions in foreign language context have various effects in worsen cognition and achievement, negative attitudes towards language, decreased willingness to communicate and decreased self-confidence.

When anxiety is limited to a specific situation such as using foreign language, the term specific anxiety is used. General anxiety means that student feels insecure, or tense in various situations, not specific ones and we can also use the term stress. Horwitz, Horwitz and Cope (1986) found that feelings, psychological and physiological symptoms, behaviour of the anxious foreign language students are the same as for any specific anxiety (discussed and supported by literature review in previous part). They feel worried, even feared and it leads to limitation in cognitive abilities as thinking, memory, attention. They have difficulty to concentrate, have palpitations, are forgetful, freezing, trembling, sweat. They manifest avoiding behaviour such as postponing homework, tasks, even missing classes. Main domains causing problems and interfering language learning are listening and speaking. Anxious students have difficulty to discriminate the sounds, structures of the message, to grasp the content of the message, to get meaning or idea what the teacher says. They are often afraid of speaking because of inadequate speaking ability, and they also believe that only correct speaking is good speaking, it causes tension or frustration.

Fear of negative evaluation of language performance, fear of failure come into the count in anxious students as well and may occur in any social, evaluative situations where student's self-confidence is missing (Leung et al 2010). Whiting et al. (2021) point to that the degree of student's displayed stress in a particular situation can be influenced by whether a student knows that will be judged by the teacher or by schoolmates (social threat) and whether he knows how to complete a task (feeling of fear). This

may potentially affect his perception of learning. Hembree (1988, in Lefrancois, 1997) summarized 562 studies that have investigated test anxiety (not specifically oriented on language learning). He came to conclusion that test anxiety causes poor test performance, is related to lower self-esteem, and has harmful effect on learning.

It is crucial to point up that the goals of the teaching the foreign language to primary students at the age of 5 to 8 years are to get positive attitude towards language and to build up individual's language ego as a confident foreign language user. A young learner has to recognize and come to the experience that foreign language is a natural part of everyday life. A load of language content at this age is less important, foreign language should be acquired through playful activities.

Managing stressful situations lead to survival and involves processes such as detecting, appraising, or dealing with them. Students face to threats and challenges in education all the time, they usually try to make any effort to eliminate or prevent all these stressors, based on individual characteristics, they do better or worse. Researchers have identified variety in coping responses to stress, explain how coping can help individuals and why stressors result in bad health, illnesses, mental disorders or resilience and satisfaction (Zimmer-Gembeck & Skinner 2023, Baqutayan 2015). Coping with stress is a basic adaptive process of everyone.

The role of a teacher is to detect stressful situations in the class and to develop methods which create, improve pupils coping skills because they are not able to find out appropriate ones themselves due to their age. According to Flores-Buils and Andrés-Roqueta (2023), resilience depends on student's individual variables such as self-esteem, empathy, introspection, and problem-solving capacity; and contextual variables such as supportive relationships with peers, security, and protection of adults (parents, teachers) who exhibit affection, openness, support, positive models, and should ensure the absence of stressors.

In general, parents (Leung et al 2010) and teachers can help students learn how to manage the existing stressful or anxious situations and make the learning process less stressful (Russell 2020). They can see many of the negative effects mentioned above in their students. Therefore, teachers should consider whether stress or anxiety generate student's behaviour or poor student's achievement is a result of low language abilities, weak motivation, and inadequate background. Teachers may use various specific techniques and apply effective language learning strategies for inhibiting and eliminating anxious manifestation (Horwitz, Horwitz & Cope 1986). Lefrancois (1997) emphasizes a teacher's role in reducing pressure and preventing student's failure by changing his attitudes to the language, motivating him, and focusing attention on the task, not at negative feelings about language learning.

There is importance to create inclusive, secure, and supportive environment where students are allowed to express the range of emotions also those negative and can communicate them in the class. Talking about insecure situations can help to decrease challenging situations and reduce stress. Resilience as the ability or capacity to recover from and adapt to the stress, to the difficult conditions (Whiting et al. 2021, Flores-Buils & Andrés-Roqueta, 2023) can be built up through promoting close bonds, using warm style of interaction, expressing realistic expectations of success, setting clear rules and norms, providing decision-making, giving students the feedback. Also, classroom environment like reduced noise, heat, set the appropriate light, seating etc. are important conditions. Brobeck et al. (2007) support the idea that high sound level at school cause stress in students. Appropriate way is to give some time to cope with fear and anxiety though useful techniques such as stop, think, take a breath; or counting, singing, allowing a student to watch situation from a safe distance, not pushing him into the response etc. There are coping methods which help to control physical, and physiological reactions through relaxation procedure such as easy exercises, activities for eliminating mental tension and worries, physical relaxation reducing tiredness, using soft balls for pressing in the hands, playing with breathing by using balloons, calming counting, calming breath, exposure to fresh air etc. (Müller de Morais 2019). Breathing exercises can be performed anywhere, anytime, and easily included during

teaching and learning. Bothe, Grignon, & Olness (2014, in Whiting et al. 2021) found out significant improvement of 8-years-old students in coping with everyday stressors after practicing deep breathing for 4 months only 10 minutes daily. Khng (2017) came to conclusion that taking deep breath before a math test significantly reduced self-reported feelings of anxiety and improved test performance in 10-year-old students. Deep breathing reduces anxiety in test-like situations, creating a better state-of-mind by enhancing the regulation of adaptive-maladaptive thoughts during the test, allowing for better performance. According to these studies, deep breathing may help primary school students to be more resilient to stress.

We can reduce negative thoughts through techniques such as the stop, box of worries, switch of the tape, throw it away, play in groups etc. Finally, in primary school, we can involve art activities, where students can express and deal with not only negative feelings through painting, drawing, music, dancing, using poems and stories (Zajacová 2009, Walker Tileston 2005). Russell (2020) offers suggestions and techniques useful also for primary students who experience any level of foreign language anxiety. Teachers can work with students' fear by let them express anxiety not only orally (verbalized), but also by movements, various music forms, fine art, role-plays, hands-on activities, watching short videos and other attractive formats in the target language. Today, students follow youtubers, influencers and that's the way how to involve students in language learning with elimination of negative feelings.

Conclusion

Stress and language anxiety in young students were discussed in the paper. It is a very complex issue involving neuroscientific, biological, and psychological theories explaining what is going on in the brain and body when student is exposed to negative emotions and how it affects his thinking, emotional state, and behaviour, especially in connection with foreign language learning. Stress refers to the external stimuli from the environment as well as to the internal condition and individual's perception, his responses to the emotional events. Therefore, it is hard, even impossible to define all the stressors, which interfere in the learning process and are displayed through various symptoms in individual's behaviour. However, there was an attempt to describe the most significant of them through literature review. Finally, stress and anxiety coping methods and techniques which are applicable in primary school in foreign language learning were presented.

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