



TECHNIUM

SOCIAL SCIENCES JOURNAL

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The quality of communication in teaching and students' emotional reactions in the classroom

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Abstract: One of the burning topics of theoretical considerations in pedagogy and education today is precisely the affective side of the educational process and related phenomena. Starting from the model of understanding learning and teaching, which includes considering the quality of communication and the role of emotions in educational practice, the main goal of the research was to examine the relationship between the quality of communication and emotional reactions of students in teaching and identify possible differences between students in Serbia, Hungary and Germany. The sample consisted of 303 students aged between 14 and 19 from Serbia, Germany and Hungary. The Shabot and Shabot (2009) Self-Assessment Questionnaire for Emotional Reactions in Teaching was used to collect data on students' emotional reactions. The results showed that students in the overall sample estimate that the quality of communication, emotional experience of teaching, the degree of involvement in work and the degree of connection with peers are at the middle level ($M = 5.65$ to 6.25). Statistically highly significant differences ($p < 0.001$) were found in the type and intensity of the quality of communication in teaching, the degree of involvement in work and the degree of connection with peers between students from Serbia and Germany and Serbia and Hungary in almost all categories. No significant differences were found between the sexes and students of different ages. The results indicate the importance of the quality of communication and encouraging pleasant emotional reactions in teaching, as well as the need to create a positive emotional climate that would allow students greater engagement in the teaching process, which would be a topic for further research.

Keywords: Teaching, emotional reactions, quality of communication, the improvement of high school teaching.

1. Research background

Communication is the basic means by which pedagogical interaction is realized. The way we communicate with students determines the emotional quality of interaction, and thus represents a strong motivating factor of cognitive activity or passivity of students. Communication (lat. *communicare* means to make something common, to communicate) is the essence of the teaching process, and teaching is an active communicative relationship between students and teachers during which the teaching content is processed, i.e. the process focused on accomplishing certain tasks. The traditional approach to teaching implies the process of transmission (transfer) of knowledge from the educator to the student. In this process, the teacher needs to find a way to teach and transfer the knowledge, usually in a ready-made form, and he does so by most often talking or teaching. The key characteristic of this way of working is the absence of pedagogical interaction, the kind of interaction that would be useful both in terms of development and in terms of teaching and learning. In this kind of work, there are attempts to teach, but there is no care, emotional exchange, support, no engagement in the direction of motivation, no reaction, not even observation of students' psychological absence or their experience in the class (Milovanović, 2010, Milovanovic et al. 2020).

In addition, in traditional teaching, achieving effective communication is often hindered by the passive or unequal position of students and the inability to actively participate in the teaching process (Jovanović, 2009). In order to overcome these key weaknesses of traditional teaching, the modern approach to teaching involves the application of interactive teaching. In interactive teaching, the student is engaged as a complete being: intellectually, emotionally, motivationally and actively. This means that the student is in the position of an active participant in educational activities. In order to realize this task, it is necessary for the student to be motivated, which is primarily achieved by using interactive methods by which students are encouraged to participate in the teaching process. In order to boost student motivation, the fact must be taken into account that the teaching process consists not only of intellectual, but also of certain emotional components. Accordingly, emotions are not only part of the educational climate, but also the very essence of the educational process. However, the emotional dimension of teaching is rather neglected. This is reflected in the relatively late recognition of the educational climate as an element of the educational process, but also then primarily as a result of social relations. The cold rational approach is still considered an ideal to strive for (Kolak and Majcen, 2011).

Starting from the limitations of the traditional approach in teaching, the author Ndethiu (2019) as a prerequisite for quality communication in teaching, states the need to know and apply four of its functions: 1. understanding and insight - the key idea is that the teacher teaches in such a way what students learn and thus understand the teaching contents, but also to understand each other; 2. persuasion and influence - the whole process of teaching and learning is an attempt to have an influence on another person; 3. promoting learning skills - traditional teaching means that the teacher dominates, while in the modern way of teaching the emphasis shifts to helping students become responsible for their own learning, i.e. to take an active role in the process of acquiring knowledge; 4. initiating and nurturing communication - the teacher should encourage the promotion of a social climate in which students cooperate and which are respected by teachers and other students.(Ćirković-Miladinović, 2019).

In that sense, pedagogical communication should be professionally designed, conditioned by the goal of education, and its development and outcomes should be programmed by the teacher. The main features of the pedagogical communication are: high level of interaction, understanding, openness, interpersonal type of communication, active listening, presence of emotions and empathy (Zukorlić and Osmanlić, 2017).

Emotions have always been present in teaching, but for a long time they were seen as something undesirable, and even as an interference with teaching and learning, and in the context of school they are taken into consideration only when they become perceived as difficulties in behaviour and learning. For these reasons, understanding the nature of emotions within the school context is crucial (Lishinski et al., 2017). What happens in school and during the teaching process affects the student's emotions, but emotions also affect how the student experiences the school and the teaching process, which further indicates a circular connection between emotions and the teaching process (Ćirković-Miladinović, 2018). Each school is an environment in which a large number of emotional connections are established between situations, school subjects, teachers, students, parents and other school staff, and they can be positive and negative (Kolak and Majcen, 2011).

Positive emotions of satisfaction and enjoyment in learning allow students to focus on the task itself and thus increase their performance. Positive emotions, in terms of using different learning strategies, promote the use of flexible and creative learning strategies such as: metacognitive strategies, affective learning strategies, elaboration, organization and critical thinking (Ćirković-Miladinović, 2017). Activating negative emotions (such as anxiety) are associated with more rigid learning strategies such as repetition, rote learning, learning only according to the textbook, while negative deactivating emotions (boredom) are associated with superficial and shallow information processing (ibid.). Positive emotions are also associated with student self-regulation of learning (planning, monitoring and evaluating their own learning in a flexible way, choosing and adapting learning strategies to the requirements of the task), while negative emotions weaken self-regulation and encourage reliance on external regulation (Burić, 2008). Correspondingly, positive student emotions (e.g., hope or enjoyment of learning) are associated with a variety of motivational processes such as greater effort, self-regulation, deeper cognitive processing, and less frequent occurrence of thoughts irrelevant to the task. Only in an atmosphere where the needs, desires and emotions of students are respected, students can feel comfortable and participate productively in the teaching process (Ćirković-Miladinović, 2019). Pleasant emotions such as curiosity, enthusiasm and joy help the learning process and make the process more successful, while in a state of vulnerability (usually situations of examination and testing) block higher cognitive functions, i.e. students cannot think properly (Miljković and Rijavec, 2009). In stressful situations, students are focused on finding ways to avoid possible negative consequences, which does not leave enough room for quality dealing with anything else. An unpleasant emotional climate can be an indicator that teaching is not in line with the interests and needs of students.

Recognizing and properly interpreting other people's emotional expressions is a condition for successful communication in everyday and professional life. Since emotions are considered as complex reactions to important objects or events, they are an extremely important aspect of children's development. For that reason, communication based on accurate recognition and adequate response to children's emotions is a necessary condition for successful upbringing and education. As positive emotions are of great value for human growth and development, their encouragement and support will create a good basis on which constructive interaction and communication can take place in the educational process (Yusof and Halim, 2014). That is why one of the main tasks of a teacher is to recognize the emotions of students. For example, in communicating with students, recognizing anger can be the teacher's first step leading to re-examining their own messages, considering the situational context and intervene in a sense that a child is instructed towards an assertive behaviour. In line with the previously said, recognizing suffering can trigger empathy and enable a reaction that includes compassion and support. Such

communication interventions trigger a positive emotional response that allows children to feel safe, and thus included and cognitively active (Milovanović, 2016, Milovanovic et al. 2020).

The extent to which students' communication and emotional reactions are related is also discussed in Emotional Response Theory (ERT), which helps us understand the impact of teacher communication on students' emotional reactions and behaviours (Mottet et al., 2006). ERT suggests that classroom communication influences students' emotional reactions, which then lead to specific behaviours in the approach to cognitive, affective learning, and motivation (Generous et al., 2015).

Numerous studies have shown a link between students' emotional responses to their motivation and learning capacity (Horan et al., 2012; Titsworth et al., 2010). Students' emotional responses in the classroom are strongly associated with several specific communication behaviours of teachers: nonverbal immediacy (Titsworth et al., 2013; Titsworth et al., 2010); teacher's messages, power (Horan et al., 2012); messages of justice in the classroom (Chory et al., 2014; Horan et al., 2010; Horan et al., 2012); and teacher clarity in communication (Titsworth et al., 2013). This connection is important to keep in mind because students' emotional experiences in teaching are related to their affective and cognitive learning and motivation (Ćirković-Miladinović, 2019, Horan et al., 2012; Titsworth et al., 2010). Therefore, it is important to understand the extent to which teacher communication reflects on students' emotions (Generous et al., 2015; Zukorlić and Osmanlić, 2017).

It would be interesting to mention here at this point the research conducted by Generous, Houser and Frei (2015) in which they examined the impact of teacher's swearing at students and their emotional experience after that. The results showed that some students stated that they felt motivated after the teacher's swearing, because the teacher seemed more bearable and approachable to them, which increased their motivation. Students also noticed that swearing caught their attention and shocked/surprised them (form of excitement) which could be related to their affective learning (for example: "I was more alert and willing to listen"). Emotional arousal, as a result of swearing, is associated with memory (Jai et al., 2008; MacKai and Ahmetzanov, 2005); therefore, this research has shown that swearing (as a way of communication) in teaching can have a motivating effect on students to follow lectures with paying more attention.

Other studies of emotions in teaching have shown that the dominant emotions with students are fear and boredom, but with a changed approach it is possible to achieve the dominance of pleasant emotions, which are a prerequisite for successful teaching (Bognar and Dubovicki, 2012). Some authors like Lazarus, (according to Cherry, 2019) even believe that emotions are a superior concept involving cognition and that emotions are inextricably motivational because emotions only occur if something is important.

Moments of learning filled with a powerful mixture of deep attention, enthusiastic interest and strong positive emotions are actually moments in which learning is enjoyable (Goleman, 2014).

Considering the connection between the quality of communication and emotional reactions of students during the teaching process, we can see how much attention needs to be paid to designing syllabuses that would emotionally engage students in order to motivate and stimulate students to take part in an activity. The extent to which there is a connection between the quality of communication in teaching and the emotional reactions of students is the first question we ask in this paper. In the second place, but no less important, is the question of whether there are differences in the emotional reactions of students to the communication that takes place during classes between students in Serbia, Hungary and Germany. Given the impact of communication quality on students' emotional reactions, we consider the answers to these questions relevant in

the search for answers to the essential question of how to deal with the growing decline in motivation for school learning faced by almost all countries in the modern world.

2. Research rationale

The main problem of this research is to examine the quality of communication in teaching and emotional reactions of students. The main goal of the research is to examine whether there is a connection between the quality of communication in teaching and students' emotional reactions and to identify possible differences in their connection between students in Serbia, Hungary and Germany.

2.1. Sample

The research was conducted in Serbia and in two European countries that are members of the EU - Germany and Hungary. The sample from Germany was consisted of students, aged 14 to 19, from a private school in the province of Schleswig-Holstein in northern Germany. All respondents, $N = 91$, at the time of the research attended the older classes of the Gymnasium (in German Oberstufe - meaning higher level) which includes three educational profiles 1) Mathematics and natural sciences; 2) Linguistics with a focus on foreign languages; 3) Socio-economic profile; 4) Sports profile.

The total sample of students (from 14 to 19 years of age) from Hungary counted $N=113$. For the purposes of this research, the students of the Gymnasium in Budapest were examined as well. This school is also a general education institution and has the following profile departments: mathematics and natural sciences, social sciences and philological sciences.

The research in Serbia was conducted at the Gymnasium "Svetozar Markovic" High School in Jagodina (central Serbia). It is a general education institution, which provides its students with a four-year education in the following educational profiles: Natural Sciences and Mathematics, Social sciences, and Philology with an emphasis on English as the first foreign language, General Type and Computing and Informatics. The examined students were also aged 14 to 19, and the total sample was $N = 99$.

So, for the purposes of the research, a total of 303 students from three European countries, aged 14 to 19, were examined, and all students attended gymnasium as a general secondary school in one of the offered departments/profiles in that institution.

2.2 Research instruments

In order to collect data on the quality of communication and emotional reactions of students, the Questionnaire for Self-assessment of Emotional Reactions in Teaching by Shabot and Shabot (2009) was used, which is constructed from items describing the quality of communication and emotional reactions related to four basic categories. Students were also expected to use a ten-point scale to assess their general emotional experience (generally, I felt "not very good" or "very good"), their connection with other participants in the class (I felt "Not very connected to others" or "Very connected to others"), their communication with others (My communication with others was "Bad" or "Very good") as well as their involvement in work (My involvement in work was "Low" or "High"). The Alpha Cronbach's coefficient, as an indicator of internal homogeneity, for this scale is 0.768, so we can state that the internal consistency of the scale is satisfactory and that the scale has satisfactory validity.

2.3 Procedure

Data on the quality of communication and emotional reactions of students were collected in 2019 and 2020. After the lessons of the following school subjects: English, history, geography, biology, natural sciences, the students were asked to answer the questions from the questionnaire with a previously given explanation of the research goals.

2.4 Analysis procedures

Data processing included methods of descriptive statistics (frequency, mean), as well as methods of analytical statistics to assess the significance of differences.

3. Results and discussion

In order to determine the quality of communication and the intensity of students' emotional reactions to lessons/lectures, the average grade was calculated in a certain category on the basis of the self-evaluation grades given by students in each category (on a scale from 0 to 10) (Table 1).

Table 1. Average grades (scale from 0-10) of the total sample

Category	N	M
Generally (emotionally) I felt	303	6,2211
I felt connected to others	303	5,7756
My communication with others was	303	6,2541
My involvement in work was	303	5,6535

Based on the obtained results, we can see that in the category of emotional experience, the students in the lectures felt quite well ($M = 6.2211$). The importance of the emotional climate in the classroom and the emotional state of students during lessons has already been discussed, but we remind you that positive emotions of students are an important prerequisite for their involvement and engagement in the teaching process, with the aim of more intensive cognitive activity (Ćirković-Miladinović, 2019). Slightly weaker results were obtained when asked to what extent students during lessons felt connected to others ($M = 5.7756$). This could be explained by the fact that the interaction in traditional teaching is often hampered by the passive position of students and reduced activity in the teaching process. Connection with others, as the basis of interactive teaching, enables the student to be engaged as a complete being: intellectually, emotionally, motivationally and actively. It is clear that this type of student engagement is the goal of teaching and learning. Also, the emotional climate in the classroom is an indicator of the extent to which teaching is in line with the interests and needs of students (Ćirković-Miladinović, 2018, 2020).

The results we obtained indicate that there is a lot of room for improving communication and interaction in the teaching process and that these issues need to be addressed more seriously. When asked about the quality of communication (from "bad" to "very good") in teaching, the average grade ($M = 6.2541$) of all respondents indicates that students rate communication as good. The importance of the quality of communication in the teaching process is emphasized by various authors, pointing to the fact that communication in the classroom affects students' emotional reactions, which then lead to specific behaviour in the approach to cognitive, affective learning and motivation (Ćirković-Miladinović, 2019; Ćirković-Miladinović, 2018; Generous et al., 2015). The quality of communication in teaching, primarily depends on the teacher: what kind of social climate does he/she creates by his/her behaviour and interaction

with students? The optimal social and emotional climate that result in quality communication should include: a high level of interaction, understanding, openness, interpersonality, active listening, the presence of emotions and empathy (Zukorlić and Osmanlić, 2017).

As a final point, we examined the degree of student involvement in the work, which should be the final result of communication that takes place in the teaching process and students' emotional responses to the communication process. Here, too, the results are slightly above average ($M = 5.6535$, students assess the degree of involvement as mediocre), which indicates that conditions have not yet been created in which students are sufficiently motivated and emotionally engaged to be involved in the teaching process to a greater extent. One of the most important goals of modern teaching is to include students in the teaching process and their maximal involvement. If during the class, students just sit without expecting anyone to ask them anything, passively and without paying attention, the body secretes very low levels of hormones and the activation of nerve structures is too low. This is associated with the lack of any interest and boredom, and thus with an inability to learn (Chica et al., 2013).

Another important question we deal with in this paper is whether there are differences in assessing the quality of communication and emotional reactions of students in relation to nationality (and therefore in relation to the organization of the school system and the organization of teaching) of the surveyed students (Table 2).

Table 2. Average values for group comparison (according to nationality)

Respondents' nationality	Generally (emotionally) I felt	I felt connected to others	My communication with others was	My involvement in work was
SRB N	99	99	99	99
Median	5,0000	4,0000	5,0000	4,0000
Mean	5,5859	4,4848	5,4949	4,3232
DEU N	91	91	91	91
Median	6,0000	7,0000	8,0000	7,0000
Mean	6,1319	6,4725	7,1978	7,0440
HUN N	113	113	113	113
Median	7,0000	7,0000	6,0000	6,0000
Mean	6,8496	6,3451	6,1593	5,6991

It is obvious that the average values (M) of students from different countries differ, in all categories. Kruskal-Wallis and Man-Whitney tests showed that there are statistically significant differences in the assessment of the quality of communication and emotional reactions of students with regard to their nationality. Values and levels of significance of differences between students from Serbia and Hungary are given in Table 3.

Table 3. Significance of the difference by categories between students from Serbia and Hungary

Categories	Respondents' nationality	N	Z	Asymp. Sig. (2-tailed)



Generally (emotionally) I felt	SRB	99	-3,315	0,001
	HUN	113		
I felt connected to others	SRB	99	-4,717	0,000
	HUN	113		
My communication with others was	SRB	99	-1,479	0,139
	HUN	113		
My involvement in work was	SRB	99	-3,052	0,002
	HUN	113		

The applied test showed that there are highly significant differences ($p < 0.002$) in the assessment of emotional experience, degree of connection and involvement in work between students from Serbia and students from Hungary in almost all modalities, except in the case of assessment of communication quality, where no significant differences were found. Students from Hungary estimate that they feel much better in the teaching process compared to students from Serbia. Also, during classes, students from Hungary feel connected to others to a much greater extent than students from Serbia, and finally, involvement in work is more intense among students from Hungary.

Whether these differences can be discussed in the context of attitudes towards work and cultural differences, differences between the specific schools from which the sample was examined or situational factors (topic of a lesson, teaching method) remains an open question. In any case, the more intense reaction of Hungarian students to lectures with positive emotions, a sense of connection and greater activity in teaching, is evident and deserves further research. Obviously, the fact that Serbian students are very little involved in the teaching process deserves further research as well. This could be initiated by the inadequate, probably one-way communication that results in students' passivity. We believe that in this way we can act in the direction of improving teaching that would provoke a positive emotional response and thus greater cognitive engagement of students.

Highly significant differences ($p = 0.000$) were found among students from Serbia and Germany in all categories, except in the modality of emotional experience of teaching (Table 4).

Table 4. Significance of the difference by categories between students from Serbia and Germany

Categories	Respondents' nationality	N	Z	Asymp. Sig. (2-tailed)
Generally (emotionally) I felt	SRB	99	-1,017	0,309
	DEU	91		
I felt connected to others	SRB	99	-4,995	0,000
	DEU	91		
My communication with others was	SRB	99	-3,484	0,000
	DEU	91		
My involvement in work was	SRB	99	-5,617	0,000
	DEU	91		

Students from Germany feel connected to others to a much greater extent than Serbian students. The quality of communication, as well as the high degree of involvement in learning among students from Germany, differs significantly compared to students from Serbia. The results clearly show that the organization of teaching and the quality of communication in teaching in Serbian schools must change significantly. The educational authorities in Serbia

recognize the mentioned problem and make efforts to overcome them through the following acts: changing the organization of the teaching process, changing the role of teachers and students, as well as the degree of their involvement in teaching. One of the ways is the introduction of the project model of teaching, as a mandatory way of working in primary and secondary schools in Serbia, which, for the first time, was realized in the 2018/19 school year. The application of the principles, forms and methods of project teaching should reduce the negative effects of the current traditional way of working (which certainly influenced the results gotten in this research): to create conditions for a positive emotional experience of students during lessons, to enable more intensive connection of students through project tasks, and all this should lead to a significant improvement in the quality of communication in the classroom, and finally, perhaps most importantly, to provide conditions for active involvement of students in the teaching process (Vasilien-Vasilioskiene et al., 2016). For these reasons, it would be worthwhile to repeat this research sometime in the near future, in order to check the effects of project teaching in the Serbian educational system.

When checking the significance of the difference in the assessment of emotional experience and quality of communication among students from Hungary and Germany, we did not find significant differences, except in the category of involvement in work ($p = 0.003$), in favour of German students (Table 5).

Table 5. Significance of the difference by categories between students from Germany and

Categories	Hungary		Z	Asymp. Sig. (2-tailed)
	Respondents' nationality	N		
Generally (emotionally) I felt	DEU	91	-2,288	0,022
	HUN	113		
I felt connected to others	DEU	91	-,119	0,905
	HUN	113		
My communication with others was	DEU	91	-2,092	0,036
	HUN	113		
My involvement in work was	DEU	91	-2,972	0,003
	HUN	113		

By checking the significance of the differences among the examined students in relation to gender and age, we did not get data on the existence of statistically significant differences. Finally, taking into account the overall results, research in this area confirms that the quality of communication in the classroom is closely related to the emotional experience of students, and all that again with their cognitive activity (Generous et al., 2015; Zukorlić and Osmanlić, 2016; Ćirković-Miladinović, 2018, 2019). Despite the limitations (unknown students' overall achievement in school, unknown teaching method applied in class, appropriate sample, etc.), we consider the findings of this research relevant because they show the extent to which students are involved in the teaching process, how they feel, whether and to what extent they are connected with others, and what is the quality of communication in teaching. Since the results of this research showed that in all three countries the values for most of the examined categories are around or slightly above the average values, we believe that there is a lot of room to improve and create a pleasant emotional climate, i.e. that teaching should be more harmonized with students' interests and learning needs.

4. Conclusion

Starting from the point of understanding learning and teaching in which the basic premise is that emotions precede learning and that there is a direct connection between learning opportunities and students' emotional state, the first aim of this research was to examine the connection between communication quality and students' emotional reactions. The second aim was to identify possible differences between students in Serbia, Hungary and Germany.

The results showed that the students in the total sample for all modalities reacted with moderate intensity. Slightly better results ($M = 6.2211$ and 6.2541) were found for the categories "Generally (emotionally) I felt" and "My communication with others was", while the values for the other two categories related to the connection with others and involvement in work, were slightly above $M = 5,000$. Given the role of communication quality, emotion in cognitive activity and student involvement in classroom activities, this finding suggests that it is necessary to continue working to improve communication quality and improve the emotional atmosphere in the classroom, to enable more intense students' cognitive activity. In addition, highly significant differences were found between students from Serbia, Germany and Hungary.

Students from Hungary and Germany evaluated as significantly better almost all examined modalities in relation to students from Serbia. Students from Hungary and Germany feel better in lessons/lectures, they feel involved in the teaching process to a greater extent than students from Serbia. Also, in relation to students from Serbia, Hungarian and German students estimate that the quality of communication in teaching is better, as well as the degree of connection with peers. In addition, statistically significant differences in relation to the nationality of students, when the existence of differences among students with regard to gender and age was examined, no statistically significant differences were found. Whether the mentioned differences can be interpreted in the light of different organization of the teaching process, using different teaching methods, attitudes towards work and cultural differences, differences between specific schools from which the sample was examined or situational factors remains an open question. We consider these results relevant concerning the fact that the students' emotional state during the teaching and learning process should be a guide in the search for innovative teaching methods and ways of communication that trigger a positive emotional response and more intense engagement of students in the teaching process. We also hope that these results have the capacity to be the starting point for some new research in the long run.

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