

Individual-psychological features of a teacher as a factor of students' retrospective judgments about the studied

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Abstract: *The article is based on the theoretical analysis of the notion of the following individual-psychological features of a teacher in the process of educational activity: the level of metacognitive involvement in the activity, the type of professional position as a teacher, individual teaching style, style of pedagogical communication. The aim of the article was to determine the role of these features of a teacher in the process of making metacognitive judgments by students in the learning process. The relationship between the level of development of metacognitive involvement, individual teaching style, pedagogical communication style, type of teacher's professional position as educator, and rating of students' judgments has been empirically investigated. A statistically significant correlation was found between student judgment scores and teacher communication style characteristics.*

Keywords: *metacognition, metacognitive monitoring, educational process, retrospective judgments about the studied.*

I. Introduction

Metacognitive monitoring plays an important role in the process of effective assimilation of information [1-3]. It should be noted that one of the success factors of student learning is the accuracy of metacognitive monitoring, which provides a student with effective metacognitive strategies in the process of learning the material. Judgments made by a student in the course of self-reflection, are both a mechanism of regulation of metacognition processes on the one hand, and a factor in the efficiency of assimilation of information on the other.

The question about the factors, which influence the process of implementation of these metacognitive judgments and their nature, remains open. In particular, in the case of excessive confidence in their knowledge, a student is expected to reduce the time and effort spent on the assimilation of information. Instead, in the case of a lack of appreciation of one's own knowledge, a student will take too long to process the material. Therefore, studying the factors that influence the exercise of such judgments is an urgent task. In fact, the author decided to experiment with the personality of a teacher, namely, whether his or her individual-psychological characteristics may influence the process of students making retrospective judgments about what was learned as a component of metacognitive monitoring.

Considering the role and influence of a teacher on the learning process, it is necessary to focus on his individual psychological characteristics that directly affect the effectiveness of learning. The primary objective of this

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study is to determine the content of the individual-psychological properties of a teacher, arising in the process of educational interaction.

II. Literature review

O. Gonchar identifies five forms of educational interaction [4]. The most common is the individual form of “one listen, the other speaks”. The second, the frontal, where one speaks and the other listens. The third form – the collective, which is implemented in the form of communication in pairs. The fourth – the group one that is manifested when working in small groups. The fifth form is indirect, which does not involve direct contact between the participants of the educational interaction. It is obvious that no matter what form of interaction is chosen by the subjects of this process, the subjects of educational-pedagogical interaction – a teacher and a student – play a major role in it. Accordingly, it can be concluded that educational interaction is the process of communication between a teacher and student in order to achieve educational goals.

There is some research that reflects the link between the peculiarities of the organisation of an educational process in students and the development of their metacognitive abilities. S. Rojas investigated the relationship between the choice of reading and writing strategy and the level of metacognitive involvement [5]. The authors discuss the development of metacognitive involvement of the object in the context of the use of motion games during the educational process [6]. The peculiarities of the study of metacognitive monitoring during the use of a special viral environment for the process of self-regulated learning were investigated. Metacognitive monitoring is studied in an observational fashion, in the context of the analysis of two models of the self-efficacy assessment procedure: the Bayes classifier and the decision tree [7]. The author investigates the link between metacognitive skills development and entrepreneurship learning [1]. Teachers' emotions and metaemotions are investigated as one of the factors of successful learning [8].

The characteristics of a teacher which describe him/her as a person without taking into account the context of the profession (e.g. type of temperament, value attitudes, level of intelligence, etc.) should be clearly distinguished. Obviously, they influence the peculiarities of the professional activity of an individual and form the basis of those peculiarities of a teacher, which are manifested directly in the situation of educational interaction and arising from its context.

For example, P. Kepterev, structuring the idea of the properties of the teacher, identifies special properties, which include objective (scientific training of A teacher) and subjective (personal pedagogical talent) factors and personal properties (moral and volitional qualities) [9].

A. Markova distinguishes the following characteristics of the structure of the subjective properties of a teacher: objective (professional knowledge, psychological knowledge, pedagogical knowledge, professional skills) and subjective (professional positions, professional attitudes, psychological positions and psychological attitudes) [10].

Analysing the above approaches to the selection of individual and psychological features of the teacher, E. Razumovskaya considers the following: psychophysiological (individual properties of a teacher); ability; directivity and other personal qualities; professional and pedagogical and subject knowledge and skills [11].

Having analysed the psychological-pedagogical literature, the author has identified the following psychological characteristics of the teacher's activity, which are due to his individual-psychological properties:

1. Type of teacher's professional position – point of view, attitude to the purpose of their profession and actions, behaviour caused by them, the system of intellectual, volitional and emotional-evaluative relations to educational activity [12].

2. The level of development of the metaphysical sphere of a teacher – the level of development of metacognitive regulation of cognitive processes [13].

3. Individual style of pedagogical activity – a stable set of motives of a teacher, the purpose of his activity, methods of achieving this goal, ways of evaluating the results of activity [10].

4. Teaching style (pedagogical style) – a method of teaching used by a teacher in the process of educational interaction [14].

Note that the author refers the type of professional position, individual style of pedagogical activity and teaching style to the focus of a teacher, and the level of development of the metacognition sphere – to his abilities.

Professional position of a teacher. Thus, the pedagogical position is included in the system of the personal-professional position of a teacher [12]. In this system, the scientist distinguishes two sub-positions: the teacher and the mentor. Unlike the teacher's position, which focuses on the learning process, the mentor's position primarily focuses on the student's personality, his development, actualisation of potential, etc. The professional position of the teacher is the system of relations of the subject and the nature of solving professional problems.

The concept of the teacher's professional position is equated with the concept of pedagogical competence and pedagogical orientation. According to A. Markova, pedagogical position is a source of personal and professional activity of an individual [10]. E. Isaev proposes to consider the professional position of a teacher in an inseparable context with the culture of society [15].

A. Grigorieva identifies the following components of the teacher's position as an educator: awareness of their place and professional opportunities in a specific socio-cultural and educational situation, the presence of internal prerequisites for further professional and personal growth [16].

L. Agasandyan bases his professional position on professional identity, which, in his opinion, allows to compare individual characteristics of a person with the norms of different social groups, including students. The author emphasises that the specificity of a teacher of a higher education institution is that it should be identical with at least two groups: a community of specialists in the chosen field and a community of teachers of higher education [17].

The professional position of a teacher of a higher education institution is a system of relations of personality to his profession, to subjects of professional activity and to himself, based on multiple professional identity, which includes belonging to the research community, the team of teachers and the community of specialists.

As it can be seen, a professional position is defined by researchers not only as a characteristic of the teacher's internal activity, but rather as a peculiarity of his orientation to external objects and ways of interaction with them.

Development of the metacognitive sphere of a teacher. Metacognitive skills include the following components (by N. Gruba and J. Serzhanova):

1. Ability to analyse yourself as a knowing subject (what factors affect knowledge acquisition and assimilation).

2. Ability to broaden one's own outlook and solve cognitive problems, to choose appropriate strategies and tactics for solving them.

3. Ability to determine the purpose and tasks of thinking, to properly allocate resources, to separate the main from the secondary.

4. To evaluate the result of cognitive activity, the degree of completion of the task, the effectiveness of the solution.

5. To re-evaluate the results of activities [18].

The level of teaching and the success of the student's learning activities will be significantly higher if the decisions made by a teacher reflect his students' deep understanding and immediate situation. Accordingly, successful coping with problematic situations requires the teacher to understand the complexity or existing difficulties in their own intellectual skills. The low level of formation of metacognitive skills not only reduces the ability to use adequate methods of information processing, but also realises the reasons for it. O. Karpov, M. Kholodnaia and others assign a key role to the metacognitive components: monitoring and control [19; 20]. Y. Skvortsova notes that there is a direct relationship between the level of metacognitive activity and the performance characteristics of the teacher's activity. Thus, a high level of metacognitive activity is one of the conditions that ensures the effectiveness of student learning [21].

M. Kislyakova identifies three groups of metacognitive skills:

1. Planning of intellectual activity: the ability to plan, set goals and objectives, predict the outcome and consequences of their own actions.

2. Conscious regulation: the ability to objectively evaluate one's own knowledge or ignorance, argue actions, and adjust oneself to work.

3. Cognitive openness: the ability to objectively argue one's position or view performance in the event of errors, the ability to build constructive criticism against others and to adequately perceive it at one's own address [22].

Individual style of pedagogical activity. This characteristic of the personality of a teacher was proposed by researchers A. Markova and A. Nikonova [10]. Thus, they characterise the individual style of pedagogical activity as a set of general and specific ways of work of a teacher.

Scientists have proposed a structure of individual style of pedagogical activity. Thus, the first component is the content characteristics of pedagogical activity:

1. The teacher's predominant orientation to the learning process, or process and learning outcomes, or learning outcomes.

2. Adequacy-inadequacy of planning of the educational process.

3. Effectiveness-conservativeness in the use of teaching methods and ways.

4. Reflexivity-intuition in the process of analysis and results of their own activities.

Dynamic characteristics are revealed by the author in the context of peculiarities of pedagogical activity. In particular, these characteristics include:

1. Flexibility-traditionality as a characteristic of the teacher's ability to quickly switch from one activity to another.

2. Impulsiveness-caution as a characteristic of the teacher's behaviour in the classroom.

3. Resilience-instability as a vector of focus of a teacher on a situation (mood and level of preparation of students) or on own goals (purpose, task of a class).

4. Emotional attitude to students, manifested in the emotional stability of a teacher, the ability to maintain emotional balance.

The third component of the individual pedagogical style is the effective characteristics of the teacher's activity, which are manifested in the uniformity of the level of students' knowledge, stability of learning skills, levels of development of interest in the subject.

Teaching style. The pedagogical style is a system of pedagogical means and methods used by a teacher in the educational process and in the relations with students, which characterises his pedagogical personality.

J. Maňák, W. Švec propose the following components of teaching style [2]:

1. Cognitive style – the personal qualities of a person, which are the basis of all other components and determine the ways of processing information.
2. Teachers' approaches to teaching – a system of value-meaning installations of a teacher, which determine the methods and means of pedagogical activity.
3. Methods of solving pedagogical situations.
4. Pedagogical knowledge, skills, experience and experience.

It should be noted that at present there is no single approach to distinguishing types of teaching styles. A common classification of pedagogical style is the separation of authoritarian, democratic and liberal leadership styles. The authoritarian style of teaching is characterised by the leading role of a teacher in the learning process, the lack of initiative of students who are the object of educational activities. Democratic pedagogical style is characterised by active interaction of a teacher with students, creation of conditions for manifestation of initiative, correction of the educational process in accordance with the needs of students. The liberal style is characterised by the passive role of a teacher in the learning process, the emphasis is placed on the independence of students.

There are other classifications of pedagogical style. Thus, L. Itelson proposes to distinguish the emotional, business, directing, demanding, stimulating and compelling style of teaching of the teacher [3]. V. Kan-Kalik, identifying the teaching style with the communication style of a teacher, offers the following classification: communication on the basis of mutual interest, communication on the basis of friendship, communication-distance, communication-intimidation, communication-flirting [23].

V. Semendyaeva emphasises the influence of the style of pedagogical activity on the effectiveness of the educational process. The author emphasises that the psychological atmosphere and emotional well-being of students depend on the style of pedagogical activity [24].

In author's view, recognising any individual-psychological characteristic as effective depends on the success and effectiveness of the learning activity. Thus, if there is a direct correlation between a particular characteristic and the student's level of achievement, such a characteristic is recognised as appropriate and desirable for a teacher.

Accordingly, we are faced with the question of the impact of these characteristics on the level of accuracy of metacognitive monitoring of students.

III. Materials and methods

To test this assumption, the author conducted an empirical study. In the first stage the peculiarities of manifestation of individual and psychological characteristics of a teacher were revealed. Subsequently, these data were analysed as a factor in the emergence of the illusion of knowledge.

A sample of the study was generated from 19 teachers who completed online surveys using the online form Google Form. Among them there are 9 men and 10 women. The subjects presented different specialities.

To diagnose these characteristics the followings were used:

- the technique of diagnostics of the professional position of a teacher as a mentor by N.I. Grigorieva, aimed at determining the peculiarities of the implementation of the educational function of a teacher [16];
- OSTRAQ diagnostic technique for determining the style of communication of a teacher [14];

- methodology for the diagnosis of metacognitive involvement in the activities by G. Shraw, R. Dennison (in the adaptation of A.V. Karpov) [13];
- the method “Analysis of features of individual style of pedagogical activity” by A. Markova and A. Nikonova [10].

In the second stage, the authors found out the peculiarities of metacognitive monitoring of students who, at the time of the study, were listening to courses from the investigated teachers and did not know the course grades.

The study sample consisted of 288 students, representatives of different specialities represented in the NUOA, of which – 135 boys, 153 girls. The average age of the subjects was 19 years. The sample of subjects was formed by the method of random selection. Experiment participants formed one experimental group with intragroup variables.

Thus, students needed to evaluate their own knowledge of the discipline (from 0 to 100 points), and to determine how confident they were in their own assessment (from 1 to 10 points, 1 – minimum confidence, 10 – maximum).

It should be noted that the survey of teachers took place at the beginning of the academic semester and the survey of students – at the end. Thanks to this, students and educators had sufficient time to interact within the training course. Also, at the time of the survey, students did not know the grade they received from the teacher (Fig. 1).

<p>Phase 1. Diagnostics of individual-psychological features of a teacher</p> <p>Factors: 1. Style of pedagogical communication (democratic, medium-prescriptive, prescriptive);</p> <p>2. Position of a teacher as a mentor (strong position, relatively strong position, relatively weak position, weak position);</p> <p>3. Metacognitive involvement in activity (high level, above the average level, average level, low level);</p> <p>4. Individual style of pedagogical activity (emotional-improvisation, emotional-methodical, rational-improvisation, rational-methodical)</p>
<p>Phase 2. Interaction</p> <p>Incentives: educational process, interaction of a teacher with students</p>
<p>Phase 3. Judgements about level of discipline mastering</p> <p>Question: How confident are you about the level of discipline mastering?</p> <p>Range: 1 – minimum confidence, 10 – maximum confidence</p>

Fig. 1. Scheme of the experiment

IV. Results and discussion

Using Goodman-Kruskal gamma correlation, a relationship was identified between the ratings of retrospective judgments about what students learned in the course of assessing the level of mastering their own knowledge and the individual and psychological characteristics of a teacher. So, first of all, the author explored the individual position of a teacher as a mentor (Fig. 2).

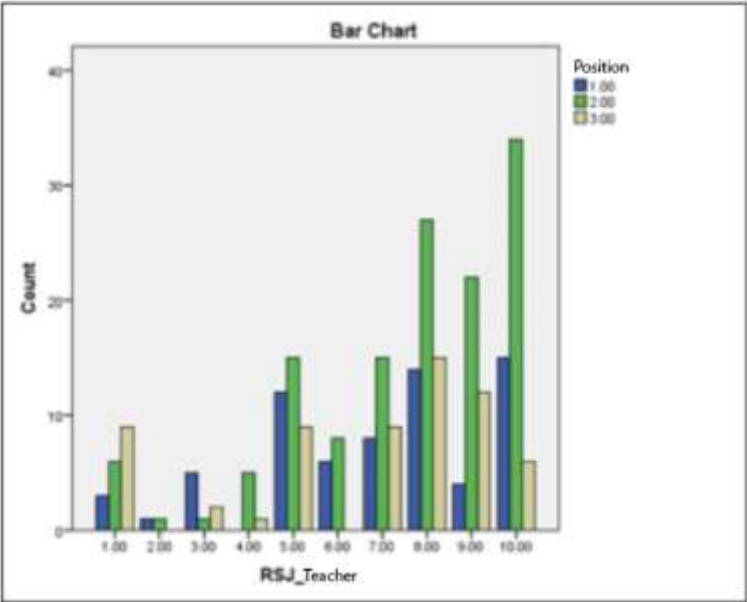


Fig. 2. Differences in indicators of retrospective judgments about the studied from the perspective of the individual teacher's position as a mentor

Statistical analysis found that no significant differences between the ratings of the judgments were found ($g = 0.026$; $p = 0.716$). Instead, there are statistically significant differences between the ratings of judgments about studied materials from the perspective of the individual style of pedagogical activity ($g = 0.214$; $p = 0.002$) presented in Fig. 3.

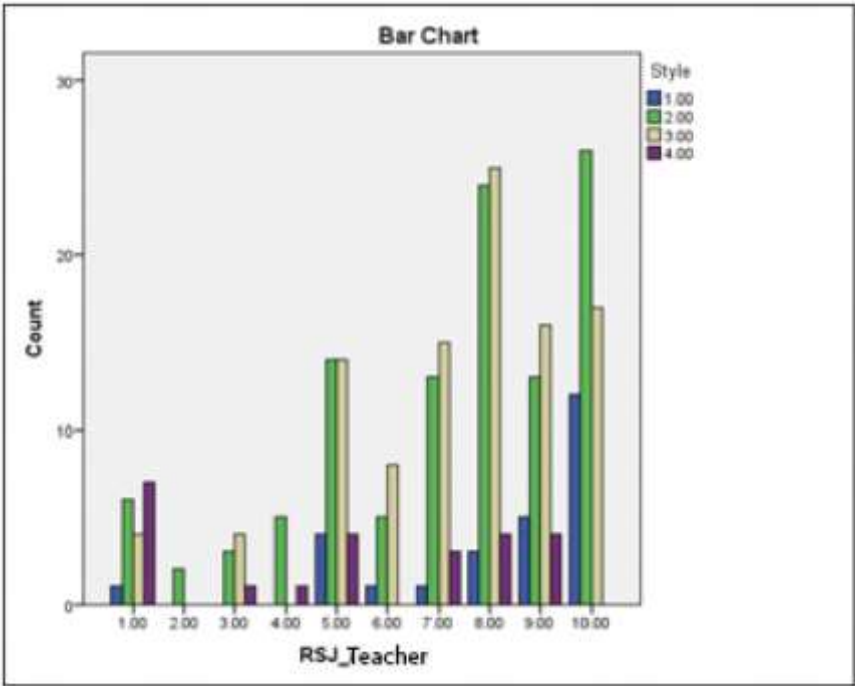


Fig. 3. Differences in indicators of retrospective judgments about the studied in terms of individual features of pedagogical activity

That is, the ratings of judgments about the studied are higher in the case when a teacher is inherent in the emotional-methodical and rational-improvisational style of pedagogical activity. Analysing the ratings of judgments about the level of development of the metacognitive involvement of a teacher, it is seen that there are no statistically significant differences between them ($g = 0.145$; $p = 0.065$).

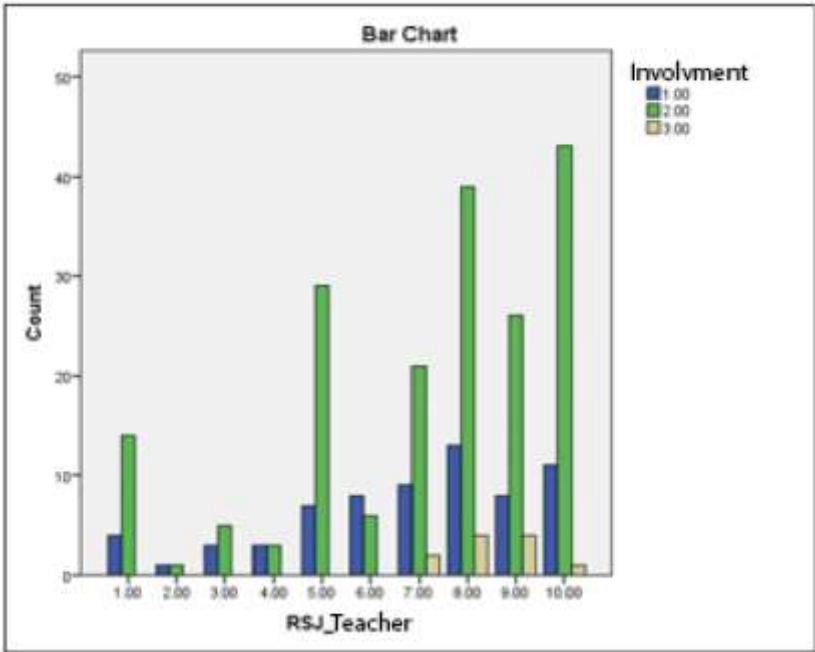


Fig. 4. Differences in indicators of retrospective judgments about the studied from perspective of metacognitive involvement of a teacher

A qualitative analysis of the results suggests that in the case of an average level of metacognitive involvement of a teacher, students tend to rate their knowledge highly, as evidenced by high ratings of retrospective judgments. Analysing retrospective judgments about the study in terms of pedagogical communication style, it is found that there are no statistically significant differences between the ratings of students' judgments ($g = 0.071$; $p = 0.392$) depending on the communication style of a teacher (Fig. 5).

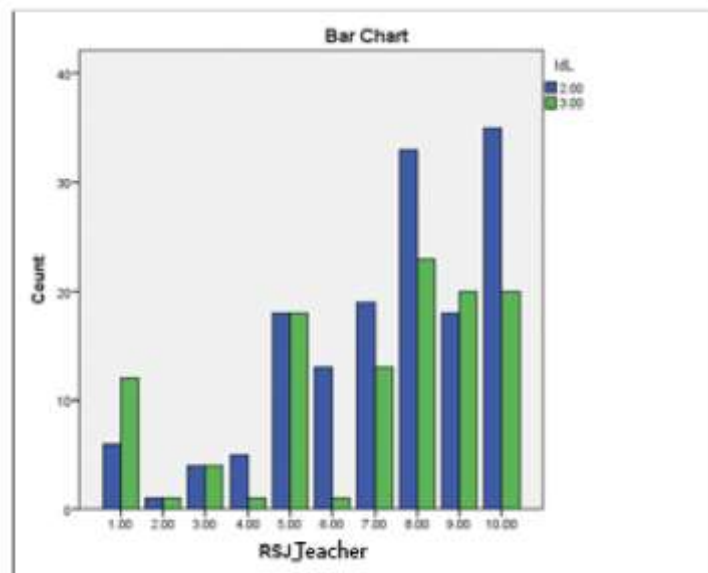


Fig. 5. Differences in indicators of retrospective judgments about the pedagogical communication style studied

It is seen that although there are no statistically significant differences, the qualitative analysis makes it possible to state slightly higher indicators of the judgments learned in the case of the authoritarian style of communication of a teacher. For a more detailed analysis of the differences between the indicators of the judgments about the individually-psychological characteristics of the teachers studied, the LSD-analysis of the obtained data was used (Fig. 6).

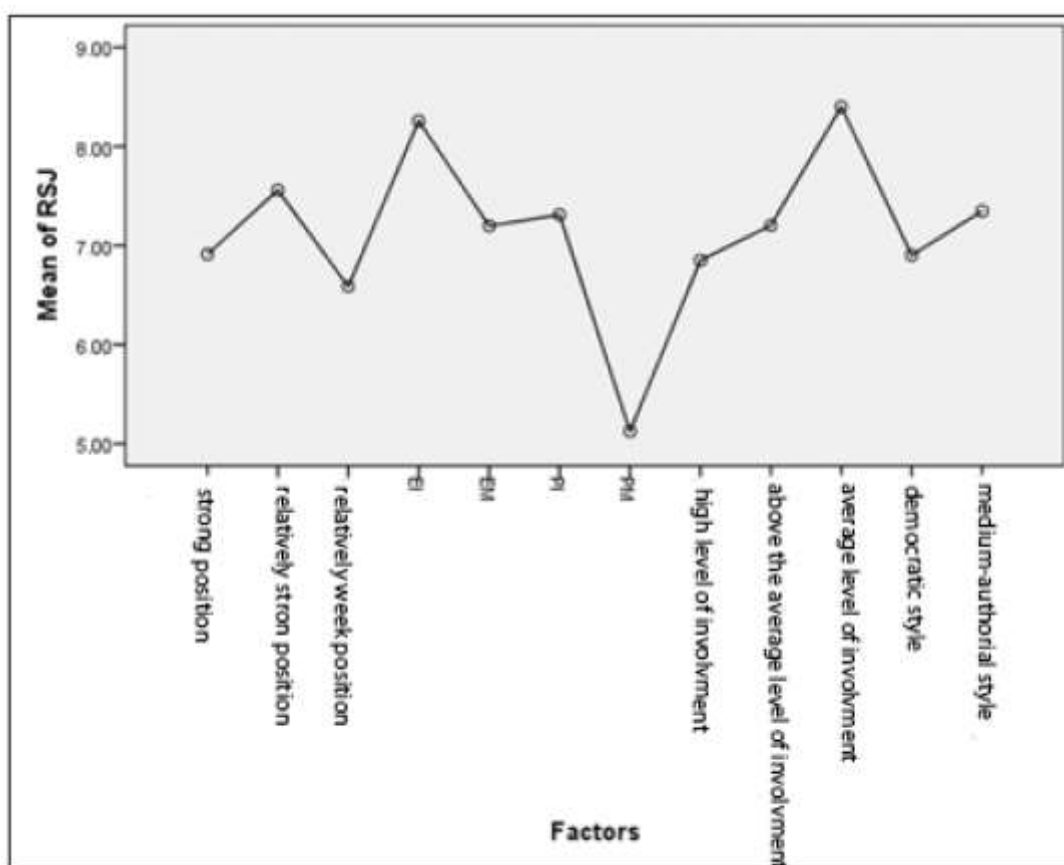


Fig. 6. The distribution of ratings of judgments about the studied from perspective of individual-psychological characteristics of a teacher

In the context of the type of teacher's professional position as mentor, LSD-analysis revealed statistically significant differences in the ratings of student judgments between the relatively strong teacher position ($M = 7.55$; $SD = 2.37$) and the relatively weak position ($M = 6.58$; $SD = 2.86$) of a teacher as a mentor at the level of significance $p = 0.012$. On the other hand, there is no statistically confirmed difference between the ratings of judgments about the students studied in the case of a strong position ($M = 6.91$; $SD = 2.53$) and other types of teacher position.

In fact, the highest ratings of judgments are inherent in those students whose teachers have a relatively strong position as a mentor. Accordingly, the lowest rates of judgments about what has been learned are recorded in those students whose teachers have a relatively weak position as a mentor. Therefore, students tend to rate themselves higher when the teacher shows those characteristics of their activities that help to realise the educational function.

In the context of individual style of pedagogical activity, differences in the ratings of judgments about the studied were recorder between the rational-methodical ($M = 5.12$; $SD = 3.15$) and emotional-improvisational styles ($M = 8.25$; $SD = 2.33$) of pedagogical activity at the significance level $p = 0.000$; rational-methodical ($M = 5.12$; $SD = 3.15$) and emotionally-methodical styles ($M = 7.19$; $SD = 2.56$) at the significance level $p = 0.000$; rational-methodical ($M = 5.12$; $SD = 3.15$) and rational-improvisational ($M = 7.31$; $SD = 2.22$) at the significance level $p = 0.000$.

As can be seen, the lowest rates of judgments about what is learned are inherent in students whose teachers represent a rational and methodical style of pedagogical activity. From this it follows that students tend to evaluate their own knowledge the least when a teacher demonstrates a clear sequence of choice of teaching methods, conservative, oriented to the assessment and control of students. The highest ratings of retrospective judgments about what is learned are observed when a teacher uses an emotional and improvisational style. That is, students are most appreciative of the

level of learning the discipline when a teacher is not oriented to the curriculum, uses different teaching methods and intuitively approaches the learning process.

The next parameter of analysis is the style of pedagogical communication. There were no statistically significant differences between the judgments of the studied. However, students with democratic teachers show lower ratings of judgments about what they have learned ($M = 6.9$; $SD = 2.82$) compared to ratings of judgments about students who have learned ($M = 7.34$; $SD = 2.35$) of teachers with a medium-authorial style of communication.

Students tend to evaluate their knowledge lower when the teacher is guided in teaching by the needs of students, takes into account the desires and interests of students, builds partnerships between themselves and students. Instead, in the case of a teacher's predilection for authoritarianism, more rigorous teaching methods, students evaluate their own knowledge higher.

The author's analysis of the literature indicates the lack of coverage of the problem in psychological research. There are no experiments exploring the differences between the accuracy of metacognitive monitoring depending on the individual characteristics of the teacher. A. Zohar and S. Barzilai emphasise the lack of attention to the issue of the formation of metacognitive skills in educators, and they believe that teachers play a leading role in the formation of metacognitive processes in students. However, there are studies that indirectly examine the relationship between individual teacher performance and student metacognitive monitoring characteristics. Also, most studies focus on the study of metacognitive activity as a whole, which implies that metacognitive monitoring was also studied indirectly [25].

E. Mokos S. Kafoussi found that students use monitoring to a greater extent at the stage of problem solving, as opposed to the process of analysing results [26]. E. Bedel notes that high metacognitive awareness of teachers facilitates the use of more constructive problem-solving methods in the learning process [27]. Husamah points out that a teaching method influences the level of metacognitive awareness of students, in particular, the use of group project activity increases the level of metacognitive awareness of students ($M = 62.02$, $SD = 5.94$ in groups that use the mixed project learning method, $M = 52.69$, $SD = 5.98$ in the control group) [28]. It was established that the level of control skills formation in teachers also influences the development of metacognitive control in students. It was found that in groups where teachers showed greater flexibility and willingness to adjust teaching methods, students more accurately evaluated their own knowledge [29]. It has been found that students' learning success is influenced by how well the teachers have instruction skills. Teachers with high levels of metacognitive monitoring can plan, monitor and evaluate their teaching practices [30-32].

V. Conclusions

Therefore, having analysed the differences in the ratings of judgments about the students studied, depending on the characteristics of a teacher and pedagogical activity, the author has found that there is a difference between the judgments about studied according to the individual teaching style of a teacher.

The highest scores are rating of judgments about studied by those students whose teachers use an emotionally improvisational teaching style. The average of the judgments about the studied in the case of emotional-methodical ($M = 7.19$; $SD = 2.56$) and rational-improvisational ($M = 7.31$; $SD = 2.22$) styles. Significantly lower ratings of judgments are learned among students whose teachers use a rational and methodical style of communication ($M = 5.12$; $SD = 3.15$).

The qualitative analysis of the obtained results makes it possible to group all the researched characteristics of teachers into three groups:

1. Characteristics in which the highest ratings of judgments about the studied (average level of metacognitive involvement; emotional-improvisational style of pedagogical activity. Relatively strong position of a teacher as a mentor; medium-authoritarian style of teaching).

2. Characteristics, which recorded high ratings of judgments of the learned (strong position of a teacher as a mentor, emotional-methodical style of teaching, rational-improvisational teaching style, high level of metacognitive involvement; level of involvement above average, democratic style).

3. Characteristics in which the average of the ratings of judgments about the studied are recorded (relatively weak position of a teacher as a mentor; rational and methodical style of teaching).

This study is the starting point for further exploration of the accuracy factors of metacognitive monitoring. After finding out what are the ratings of retrospective judgments about what has been studied depending on the characteristics of educators, the next step is to study the judgment calibration, the effect of overconfidence/uncertainty and their factors.

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