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Teacher Interaction in Primary School

Dávid, Szabó L.[1], Kinga, Horváth[2], Alexandra, Nagyová[3]
[1] *PhD. Student, J. Selye University, Komárno, Slovakia*
[2] *Full Professor, J. Selye University, Komárno, Slovakia*
[3] *Assistant Professor, J. Selye University, Komárno, Slovakia*

Abstract:- Since the 2000s, there has been an increasing focus on the development and emergence of tools that students can use to evaluate their teacher's performance. One of these tools is the Questionnaire on Teacher Interaction (QTI) developed by Wubbels et al. (1987), which is based on Leary's (1957) functional theory and methodology for personality evaluation. The QTI makes the description of the teacher's activity possible from the perspective of student assessment. Wubbels et al. (1987) provided eight personality variables of interpersonal behavior. In the current research, the 48-item-long Hungarian language version of the QTI questionnaire developed by Wubbels et al. (1987), revised by Tóth & Horváth (2022) was applied. The questionnaire was utilized to collect data from elementary school students. The research involved 48 Hungarian elementary school students, and the reliability of the QTI ranged between 0.653 and 0.769. We examined the mean and standard deviation of the samples and subsamples. To compare the means, we used the Mann-Whitney and Kruskal-Wallis tests, as well as the ANOVA test. A cluster analysis was also performed for the SRE and STR dimensions. The research results show that the teacher interactions are characterized by low levels of uncertain, admonishing, and dissatisfied attitudes, while high-level teacher interaction was assumed as leading, consensus-seeking and helpful-friendly attitudes. It could be concluded that the highest variance was observed in the dimensions of strictness and forcefulness.

Keywords*:* classroom environment, interpersonal relations, primary school, teacher behaviour, teacher attitudes.

1. Introduction

In our previous studies (Szabó L. – Horváth 2024a; Tóth – Horváth 2022), we were trying to find and answer what the ideal teacher's interpersonal behavior is from the perspective of various student groups (high school students, teacher trainees from the Carpathian Basin). The results of the research conducted among high school students show that the ideal teacher interactions are characterized by low levels of dissatisfied, uncertain, scolding, and warning attitudes, while high-level teacher interaction was assumed as controlling, helpful, friendly, understanding, and consensus-seeking attitudes. It could be concluded that the highest variance was observed in the dimensions of strictness and forcefulness.

Beyond examining ideal teacher interpersonal behavior, we also investigated (Szabó L. – Horváth 2024b, c, d; Szabó L. – Ponyiné – Horváth 2024) the interpersonal attitudes of specific teachers (elementary school, high school, university). In a study conducted among high school students, we examined the characteristics of the interpersonal behavior of two teachers from the students' perspective. We also asked the two teachers to describe themselves. Finally, we compared the results. In the case of Teacher 1, they perceived themselves as much more lenient, uncertain and indecisive compared to the students' assessment, while in the case of Teacher 2, we observed that they perceived themselves as much more dissatisfied and skeptical as well as stricter and more assertive than how the students perceived them. The presented research is based on a previous study (Szabó 2023), which addressed whether the methodology of teaching history could change. It revealed that teachers play a significant role in students' career choices and in ensuring the supply of future educators, as many students choose the (teaching) profession because of their teachers. The study was conducted among trainee history teachers at J. Selye University. The total number of history teacher trainees both on Bachelor and Master level of studies was 89, of which 83 completed the questionnaire, including 44 male and 39 female respondents. In the sample of 83 students, a specific history teacher influenced the decision of 49 students (58%) to choose the history teaching program at the university.

The aim of this study is to assess the interaction style of a history teacher at a Hungarian-language primary school in Slovakia based on the opinions of students in three classes.

2. Theoretical Frameworks

In our previous studies, we already introduced two early research areas for examining the impact of teacher behavior on student performance in the classroom environment (Szabó L. – Horváth 2024a, b,c,d), so we will only briefly present the obtained results. One area of the research focused on teacher effectiveness (Gordon 1991; Zrinszky 2002), while the other examined the interaction between individuals and their environment (Moos 1979; Walberg 1979).

The creation of the Model for Interactional Teacher Behavior (MITB) is attributed to Wubbels (Wubbels et al. 1985). The Wubbels MITB model is fundamentally based on Leary's model of interpersonal behavior. Leary's model allows us to measure the motives behind human behavior.

Leary's (1957) work was based on the general model of interpersonal communication, which Wubbels et al. (1987) also applied to describe students' perceptions of their teacher's activities. Wubbels et al. (1987) provided eight personality variables of interpersonal behavior for this purpose. They followed a circumplex logic, arranging the eight variables around a circle, thus creating the Model for Interpersonal Teacher Behavior (MITB). Wubbels' model of teacher interpersonal behavior includes eight categories, which we present in Table 1 along with their interpretations.

Table 1: Characteristics of behavior categories defined by Leary and Wubbels

8 major categories of behavior defined by Leary	*8 major categories of behavior defined by Wubbels*	Characteristics of categories (These kinds of teachers…)
AP: managerial –autocratic	LEA: leadership	notice what is happening; lead, organize, give orders; set tasks, propose solutions, explain, arouse students' interest
NO: responsible – hypernormal	HFR: helping – friendly	assist, show interest in students' problem, involved, behave friendly and politely, sense of humor
LM: cooperative – over-conventional	UND: understanding	listen with interest, empathic behavior, show confidence and understanding, initiate conflict resolution, patient, open
JK: docile – dependent	SRE: student responsibility / freedom	provide opportunity for independent work; wait for class to let off steam; give freedom and responsibility; take the proposals of the students into consideration
HI: self-effacing – masochistic	UNC: uncertain	no intervention in happenings, stay in background, apologize, wait and see how the wind blow, admit one is in the wrong
FG: rebellious – distrustful	DIS: dissatisfied	wait for silence, consider pros and cons, keep quiet, express dissatisfaction, eyes are angry, always ask questions, criticize
DE: aggressive – sadistic	ADM: admonishing	get angry, short-tempered, forbid, warn for mistakes, punish
BC: competitive – narcissistic	STR: strict	control of students, strict exams, strict evaluation, demand/achieve class silent, maintain silence, set rules and norms, exercise rules

Source: own editing based on Leary (1957) and Wubbels et al. (1987)

The octants of the teacher's interpersonal behavior can be presented along two axes, and the order of the octants is not random. Opposite sectors represent contrasting personality traits, while sectors closer to each other are similar. There is no relationship between sectors that are orthogonal. It means that they are at right angles to each other when compared (Szabó L. – Horváth 2024a).

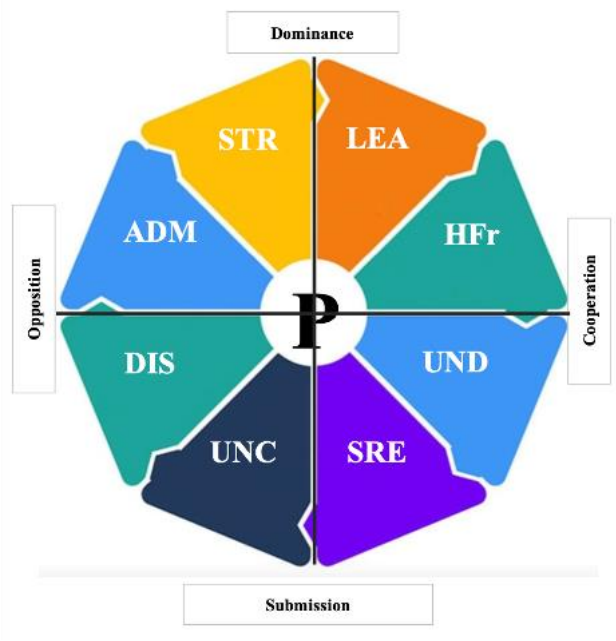

Figure 1: The model of teacher's interpersonal behavior

Source: own editing based on Tóth and Horváth (2022)

The teacher's interactional behavior (Figure 1) can be interpreted along two axes. Letter "P" in the center of the figure represents the teacher's personality. The abbreviations of personality behavior categories by Wubbels are presented in white. The vertical axis encompasses the extremes of dominance and submission, indicating the teacher's effort to maintain their power position within the classroom or how much they delegate this role to their students. The horizontal axis encompasses the extremes of resistance and cooperation, indicating how distancing or rejecting the teacher is or how helpful and understanding they are towards their students. The eight equal sectors in the coordinate system are labelled with LEA, HFr, etc., according to their position in the coordinate system. Both the LEA and HFr sectors are characterized by dominance and cooperation. In the adjacent sectors, dominance prevails over cooperation. For example, a teacher exercising LEA behavior may explain something to the class, organize groups, and assign tasks. The neighboring HFr sector shows a more cooperative and less dominant behavior, indicating that the teacher assists students and behaves in a friendly or attentive manner (Tóth & Horváth, 2022 in Szabó L. – Horváth 2024a, pp. 9552).

In our current research, we use the Questionnaire on Teacher Interaction (QTI) developed by Wubbels et al. (1985) as well as a modified version of it in Hungarian language. The questionnaire, which served as the basis for the QTI questionnaire, is referred to as QUIT (Questionnaire for Interactional Teacher Behaviour) in the literature and originated from the ICL (Interpersonal Check List) questionnaire edited by Leary. The ICL questionnaire consisted of 77 questions and was developed for Dutch high school students (Wubbels & Brekelmans, 1998; Wubbels et al., 1991; Wubbels et al., 1985; Wubbels & Levy, 1991). The original QUIT questionnaire was developed in Dutch and included 77 items (den Brok et al., 2004). This 77 items questionnaire was developed to measure the teacher's ideal interpersonal behavior, which is highly relevant for our current study. The QTI questionnaires underwent several translations and adaptations. A 48-item version of the questionnaire was developed, which was first used in Australia and was also applied in our current research (Fisher et al., 1995). The Hungarian translation of the QTI is credited to Tóth and Horváth (2022). In the translation process, a back-and-forth translation was used, and the language of the questionnaire was also checked with practicing educators. The Hungarian version of the questionnaire measuring ideal teacher interpersonal behavior can be found in their book Tanári interakció az osztályteremben [Teacher Interaction in the Classroom] (Tóth & Horváth, 2022, pp. 162–164). In Table 2 we can see the number of items in the original QTI questionnaire and the QTI questionnaire used by us.

Table 2: The number of items in the original QTI questionnaire and the QTI questionnaire used by us

Scale	Number of items in QUIT	Number of items in QTI
Leadership (LEA)	10	6
Helpful – friendly (HFR)	10	6
Understanding (UND)	10	6
Student responsibility (SRE)	9	6
Uncertain (UNC)	9	6
Dissatisfied (DIS)	11	6
Admonishing (ADM)	9	6
Strict (STR)	9	6

Source: own editing based on den Brok, Brekelmans & Theo, 2004 and Tóth & Horváth, 2022

3. Materials And Methods

Articipants and the Participants' Demographical Data

The current research sample involved 48 Hungarian students of a Hungarian language based elementary school in Slovakia. The students' demographical data were as the follows:

- male– 31 persons (64,6%); female – 17 persons (35,4%)
- 1st class – 20 persons (41,7%); 2nd class – 13 persons (27,1%); 3rd class – 15 persons (31,3%)
- has not repeated a grade – 43 persons (89,6%); has repeated the first four grades in primary school – 1 person (2,1%); has repeated on 5-8 grades in primary school – 4 persons (8,3%)
- achieved evaluation from History on a grading scale from the best to worst mark: excellent (1) – 13 persons (27,1%); laudable (2) – 17 persons (35,4%); good (3) – 13 persons (27,1%); pass (4) – 4 persons (8,3%); fail (5) – 1 person (2,1%).
- Do you like history: do not like at all – 1 person (2,1%); do not like – 13 persons (27,1%); like – 28 persons (58,3%); like very much – 6 persons (12,5%);
- the highest qualification the student would like to achieve: primary school (8 grades of primary education) – 4 persons (8,3%); secondary vocational school – 27 persons (56,3%); secondary grammar school with school leaving exam – 7 persons (14,6%); university qualification – 7 persons (14,6%); PhD degree – 3 persons (6,3%)
- number of people per household: 2 people/household – 5 persons (10,4%); 3 people/household – 11 persons (22,9%); 4 people/household – 19 persons (39,6%); 5 people/household – 10 persons (20,8%); 6 people/household – 2 persons (4,2%); 7 people/household – 1 person (2,1%)
- number of siblings: no siblings – 10 persons (20,8%); one – 17 persons (35,4%); two – 16 persons (33,3%); three – 4 persons (8,3%); five and more – 1 person (2,1%)
- the age of mother: 30-34 – 3 persons (6,3%); 35-39 – 12 persons (25%); 40-44 – 23 persons (47,9%); 45-49 – 8 persons (16,7%); 50-54 – 1 person (2,1%); no answer – 1 person (2,1%)
- the age of father: 30-34 – 2 persons (4,2%); 35-39 – 3 persons (6,3%); 40-44 – 21 persons (43,8%); 45-49 – 13 persons (27,1%); 50-54 – 7 persons (14,6%); 55-59 – 1 person (2,1%); over 60 – 1 person (2,1%)
- the student has his/her own room: yes – 37 persons (77,1%); no – 11 persons (22,9%)

- academic average at the end of the previous school year: 1-1,49 – 13 persons (27,1%); 1,5-1,99 – 7 persons (14,6%); 2-2,49 – 9 persons (18,8%); 2,5-2,99 – 6 persons (12,5%); 3-3,49 – 7 persons (14,6%); 3,5-3,99 – 2 persons (4,2%); 4-4,49 – 2 persons (4,2%); 4,5-5 – 2 persons (4,2%)
- academic average of the previous half term: 1-1,49 – 11 persons (22,9%); 1,5-1,99 – 6 persons (12,5%); 2-2,49 – 13 persons (27,1%); 2,5-2,99 – 3 persons (6,3%); 3-3,49 – 9 persons (18,8%); 3,5-3,99 – 2 persons (4,2%); 4-4,49 – 2 persons (4,2%); 4,5-5 – 1 person (2,1%); no answer – 1 person (2,1%)
- favourite subjects of students: English – 3 persons (6,3%); Biology – 1 person (2,1%); Music – 3 persons (6,3%); Religious education – 1 person (2,1%); Hungarian – 5 persons (10,4%); Mathematics – 2 persons (4,2%); no favourite subject – 5 persons (10,4%); Art – 1 person (2,1%); Slovak – 2 persons (4,2%); PE – 22 persons (45,8%); History – 3 persons (6,3%)

Research Goals and Questions

In our current research, we aim to map and characterize the interaction style of a history teacher at a Hungarian-language primary school in Slovakia from the students' perspective, and then compare the results with other samples. To achieve this, we used the Hungarian translation of the 48-item QTI questionnaire introduced by Fisher et al. (1995) (Tóth–Horváth 2022) in paper form. The original questionnaire uses a 0...4 scale, which is then converted to a 1...5 scale. We worked with the 1...5 scale by default. The research was conducted in Slovakia in May 2024. The results were processed using the SPSS statistical software. A total of 48 eighth-grade students participated in the study. The aim of the current study was to find answers for the following research questions:

Q1. What are the characteristics of the interaction style of a history teacher at a Hungarian-language primary school in Slovakia from the students' perspective?

Q2. Considering background variables, what differences are observed between various student groups in the assessment of the teacher's interaction style?

4. Results

In the 48-item questionnaire, the six elements associated with each of the eight octants were mixed. The subjects did not know which element belonged to which interpersonal teacher behavior octant. When filling out the questionnaire, students could provide their responses using a Likert scale. The smallest value on the Likert scale was 1, and the largest was 5: a 1 means that the given trait is not part of the teacher's interpersonal behavior, while a 5 means it is a strong trait. Table 3 presents the reliability values of the certain octants in terms of the entire sample and some partial ones.

Table 3: The reliability indicators of the Wubbels QTI measurement tool in our current research

Scale	Items belonging to octants	Number of items	Cronbach-alfa
Admonishing (ADM)	4, 8, 12, 16, 20, 24	6	0,705
Dissatisfied, suspicious (DIS)	27, 31, 35, 39, 43, 47	6	0,720
Helpful, friendly (HFr)	25, 29, 33, 37, 41, 45	6	0,669
Leadership (LEA)	1, 5, 9, 13, 17, 21	6	0,683
Student responsibility, freedom (SRE)	26, 30, 34, 38, 42, 46	6	0,767
Strict (STR)	28, 32, 36, 40, 44, 48	6	0,769
Uncertain, indecisive (UNC)	3, 7, 11, 15, 19, 23	6	0,653
Understanding, consensus seeking (UND)	2, 6, 10, 14, 18, 22	6	0,701

Source: own editing

Based on Table 3, it can be determined that each variable is considered reliable. In Table 4, we have provided the descriptive statistical indicators for the eight interpersonal variables obtained during the research, categorized by types of teacher interpersonal behavior.

Table 4: Statistical indicators of QTI variables

8 categories of Wubbels	Mean	Std. Deviation	95% conf. ind.	
			the lowest value	the highest value
Admonishing (ADM)	9,19	2,420	8,48	9,89
Dissatisfied, suspicious (DIS)	9,79	3,066	8,90	10,68
Helpful, friendly (HFR)	27,92	1,820	27,39	28,45
Leadership (LEA)	25,48	2,526	24,75	26,21
Student responsibility, freedom (SRE)	16,27	4,000	15,11	17,43
Strict (STR)	13,15	4,458	11,85	14,44
Uncertain, indecisive (UNC)	9,10	2,941	8,25	9,96
Understanding, consensus seeking (UND)	26,23	2,800	25,42	27,04

Source: own editing

In Table 5, we have provided the skewness, kurtosis, and their errors, ratios, and normal distribution of the octants.

Table 5: Skewness, kurtosis, ratios and standard deviation of QTI variables

8 categories of Wubbels	(Skewness)	(Std. Error of Skewness)	Ratios	(Kurtosis)	(Std. Error of Kurtosis)	Ratios	Standard distribution
ADM	1,387	0,343	4,04	2,014	0,674	2,99	–
DIS	1,157	0,343	3,37	2,265	0,674	3,36	–
HFR	-0,689	0,343	**-2,01**	-0,550	0,674	**-0,82**	+
LEA	-0,619	0,343	**-1,80**	-0,132	0,674	**-0,20**	+
SRE	0,461	0,343	**1,34**	0,015	0,674	**0,02**	+
STR	1,229	0,343	3,58	1,610	0,674	**2,39**	–
UNC	1,994	0,343	5,81	5,298	0,674	7,86	–
UND	-2,012	0,343	-5,87	5,625	0,674	8,35	–

Source: own editing

If the values of skewness and kurtosis, as well as their standard errors' ratios, do not exceed ±2.58, and in stricter cases ±1.96, the variable can be considered normally distributed. According to Kolmogorov and Smirnov, the HFR and LEA variables do not follow a normal distribution. However, due to the permissive conditions (Sajtos – Mitev, 2007, p. 95), we still accept them as normally distributed.

In Figure 2, we can see the mean of our sample of the QTI variables in the circumplex diagram.

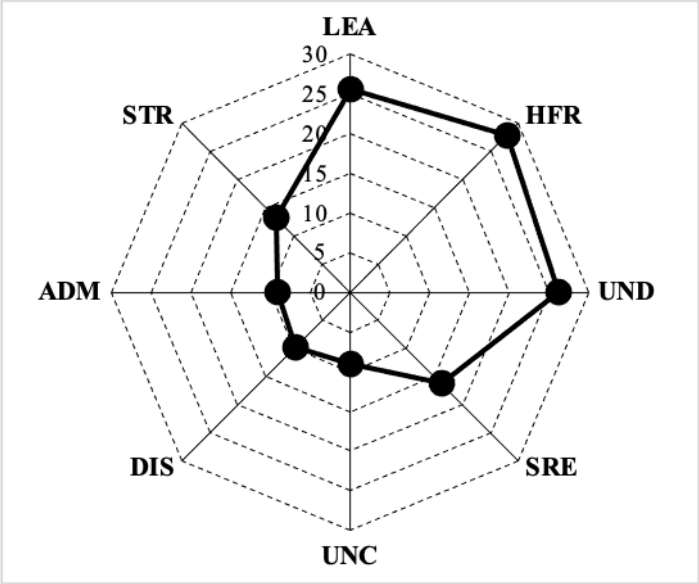

Figure 2: The QTI variables in the circumplex diagram

Source: own editing

Referring to the permissive conditions, we can speak of normal distribution for three out of the eight dimensions (HFR, LEA, SRE), for which ANOVA testing can be applied (HFR: Levene's test: 0.062; LEA: Levene's test: 0.562; SRE: Levene's test: 0.141).

We examined the QTI variables in relation to the following background variables: gender, semester grade in history, interest in history, number of siblings, and whether the student has a private room. Table 6 presents the means and standard deviations of the subsamples according to these background variables.

Table 6: Mean and standard deviation of QTI background variables

Background variables		ADM	DIS	HFR	LEA	SRE	STR	UNC	UND
Gender	Male M	9,5161	10,1613	27,7419	25,3871	16,1613	13,3871	8,7419	25,9355
	Male SD	2,4748	3,0778	1,9143	2,5778	4,0669	4,2480	2,2505	3,1298
	Female M	8,5882	9,1176	28,2353	25,6471	16,4706	12,7059	9,7647	26,7647
	Female SD	2,2655	3,0183	1,6405	2,4985	3,9862	4,9214	3,8976	2,0472
Mid-term evaluation from History	1 M	8,7692	8,9231	27,9231	26,0000	16,5385	13,2308	8,3077	26,3077
	1 SD	1,4806	2,7526	1,6564	2,3094	4,1556	5,4796	1,7974	1,7505
	2 M	10,3529	10,7059	28,0000	25,0588	16,1176	13,8824	9,7647	26,7647
	2 SD	3,0195	3,7710	1,8028	2,3041	3,2765	3,4257	3,0110	1,7864
	3 M	8,2308	9,1538	27,7692	25,7692	16,3846	12,6154	9,4615	25,6923
	3 SD	1,9644	2,4781	2,1662	3,1399	4,7177	5,3935	3,9289	4,4419
	4 M	8,5000	11,2500	28,0000	24,7500	14,2500	11,7500	8,5000	25,0000
	4 SD	2,3805	1,7078	2,1603	2,7538	4,2720	2,2174	1,7321	2,9439

Background variables		ADM	DIS	HFR	LEA	SRE	STR	UNC	UND
Do you like History	No M	9,1538	11,3077	27,4615	25,0769	16,2308	15,0769	9,0769	25,7692
	No SD	2,4099	4,1309	2,0662	2,4311	3,6321	5,4994	1,8913	2,0064
	Yes M	9,3571	9,0357	28,1429	25,5357	16,1429	12,3214	9,2857	26,6429
	Yes SD	2,4070	2,3957	1,5327	2,2024	3,7487	3,7521	3,5886	2,7246
	I like History very much M	7,8333	9,5000	28,1667	26,0000	17,0000	12,8333	8,5000	25,5000
	I like History very much SD	2,1370	2,2583	2,5626	4,3359	6,4807	4,9565	1,5166	4,6368
Number of siblings	no siblings M	8,3000	9,1000	28,1000	26,4000	17,3000	11,7000	7,3000	27,2000
	no siblings SD	1,7670	2,1833	1,9120	2,0111	5,4171	3,7431	1,0594	1,9322
	one sibling M	9,0588	9,6471	28,4706	25,3529	16,8235	13,0000	8,9412	25,9412
	one sibling SD	2,2768	2,7373	1,5858	2,4734	3,6612	4,9244	3,4905	2,7265
	two or more siblings M	9,7143	10,2381	27,3810	25,1429	15,3333	13,9524	10,0952	26,0000
	two or more siblings SD	2,7412	3,6729	1,8835	2,7800	3,4545	4,3872	2,7185	3,1937
Own room	Yes M	8,7297	9,4865	27,8919	25,5405	16,2703	13,0811	9,0541	26,3514
	Yes SD	1,7740	2,7144	1,8527	2,4335	4,0114	4,6986	2,9622	2,4745
	No M	10,7273	10,8182	28,0000	25,2727	16,2727	13,3636	9,2727	25,8182
	No SD	3,5803	4,0204	1,7889	2,9357	4,1495	3,7222	3,0030	3,8162

Source: own editing

To compare the means, we applied the Mann-Whitney and Kruskal-Wallis tests for the ADM, DIS, STR, UNC, and UND octants, and the ANOVA test for the HFR, LEA, and SRE octants. We examined whether there were significant differences in the dimensions based on the background variables. For gender, based on the students' responses, we found no significant differences in any of the dimensions (ADM: M-W U. Asymp. Sig.=0.086; DIS: M-W U. Asymp. Sig.=0.179; HFR: ANOVA Sig.=0.375; LEA: ANOVA Sig.=0.737; SRE: ANOVA Sig.=0.801; STR: M-W U. Asymp. Sig.=0.392; UNC: M-W U. Asymp. Sig.=0.547; UND: M-W U. Asymp. Sig.=0.424).

We examined whether there were significant differences in the dimensions based on the background variables. Regarding gender, based on the students' responses, we found no significant differences in any of the dimensions (ADM: M-W U. Asymp. Sig.=0.086; DIS: M-W U. Asymp. Sig.=0.179; HFR: ANOVA Sig.=0.375; LEA: ANOVA Sig.=0.737; SRE: ANOVA Sig.=0.801; STR: M-W U. Asymp. Sig.=0.392; UNC: M-W U. Asymp. Sig.=0.547; UND: M-W U. Asymp. Sig.=0.424).

Based on the responses from different classes, we can speak of a significant difference only in the HFR dimension (helpful – friendly) (ADM: K-W H. Asymp. Sig.=0.473; DIS: K-W H. Asymp. Sig.=0.830; HFR: ANOVA Scheffe=0.047; LEA: ANOVA Scheffe=0.995; SRE: ANOVA Scheffe=0.287; STR: K-W H. Asymp. Sig.=0.482; UNC: K-W H. Asymp. Sig.=0.137; UND: K-W H. Asymp. Sig.=0.921). The third class (average: 28.5) considers the teacher to be significantly less helpful – friendly compared to the first class (average: 27). Based on these findings, we can conclude that the teacher in the examined sample is perceived differently in terms of the helpful – friendly attitude by the classes he/she teaches.

We did not find significant differences based on students' midterm history grades (2023/2024) (ADM: K-W H. Asymp. Sig.=0.123; DIS: K-W H. Asymp. Sig.=0.296; HFR: ANOVA Scheffe=0.989; LEA: ANOVA Scheffe=0.697; SRE: ANOVA Scheffe=0.789; STR: K-W H. Asymp. Sig.=0.619; UNC: K-W H. Asymp. Sig.=0.382; UND: K-W H. Asymp. Sig.=0.655). Similarly, we did not find significant differences based on students' attitudes towards the history subject (ADM: K-W H. Asymp. Sig.=0.120; DIS: K-W H. Asymp. Sig.=0.178; HFR: ANOVA Scheffe=0.522; LEA: ANOVA Scheffe=0.754; SRE: ANOVA Scheffe=0.898; STR: K-W H. Asymp. Sig.=0.422; UNC: K-W H. Asymp. Sig.=0.896; UND: K-W H. Asymp. Sig.=0.334).

We examined whether there were significant differences in students' responses based on the highest level of education they aspired to achieve. Students could choose from five options: primary school (eight years); vocational school; high school, graduation; I want a university; I want a PhD degree. Due to sample size, we divided the responses into two groups: (1) primary school and vocational school, and (2) high school graduation and higher. For five dimensions, we used the Mann-Whitney test, while for the HFR, LEA, and SRE dimensions, we used the ANOVA test (Table 7).

Table 7: Significance between the octants in terms of the highest education degree of students aspired to achieve

	ADM	DIS	HFR	LEA	SRE	STR	UNC	UND
M-W U. Asymp. Sig.	0,399	1,000	–	–	–	0,940	0,074	0,036
ANOVA	–	–	0,169	0,485	0,589	–	–	–

Source: own editing

Regarding the planned highest level of education, we can conclude that there is no significant difference in students' responses in seven dimensions. However, in terms of the understanding – consensus-seeking (UND) attitude, we found a significant difference: students intending to complete primary and vocational school perceive the teacher as having a much more understanding – consensus-seeking attitude than those who plan to achieve high school graduation or higher education.

We examined whether there is a significant difference in students' responses based on the number of siblings they have. Due to the sample size, we divided the responses into three groups: (1) no siblings; (2) one sibling; (3) two or more siblings. Regarding the uncertain – undecided (UNC) attitude, we found a significant difference: students without siblings perceive the teacher as having a much less uncertain – undecided attitude compared to those with two or more siblings (UNC: K-W H. Asymp. Sig.=0,006) (Figure 3).

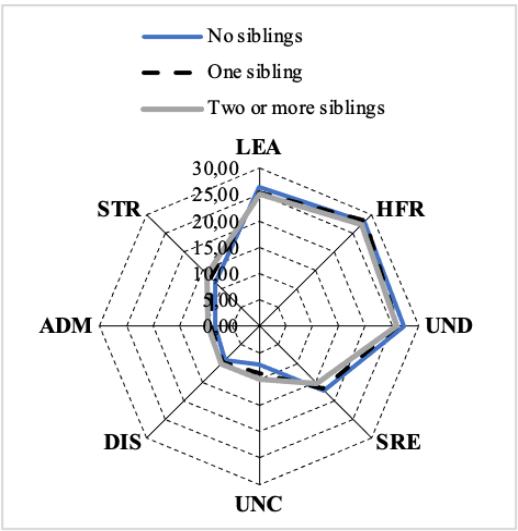

Figure 3: Comparing the Mean Values of QTI Variables Based on the Number of Siblings

Source: own editing

Regarding the age of the students' mothers, we found a significant difference in the helpful – friendly (HFR) attitude. Children of mothers aged 40-44 perceive the teacher as having a significantly less helpful – friendly attitude (average: 27.26) compared to children of mothers over 45 years old (average: 29) (HFR: K-W H. Asymp. Sig.=0,028).

Regarding the age of the students' fathers, a significant difference was found in the admonishing – warning attitude (ADM). According to the students, children of fathers aged 40-44 perceive the teacher as having a significantly less admonishing – warning attitude compared to children of fathers aged 45 or older (ADM: K-W H. Asymp. Sig=0.038). This may be because the older generation tends to raise their children more strictly, admonishing and warning them more than younger parents. As a result, students accustomed to this type of upbringing at home perceive the teacher's admonishing – warning attitude as less pronounced.

We examined whether there is a significant difference in students' responses based on whether they have their own room at home. According to this approach, we did not find a significant difference in any of the octants: (ADM: M-W U. Asymp. Sig.=0,114; DIS: M-W U. Asymp. Sig.=0,371; HFR: ANOVA Sig.=0,930; LEA: ANOVA Sig.=0,775; SRE: ANOVA Sig.=0,997; STR: M-W U. Asymp. Sig.=0,530; UNC: M-W U. Asymp. Sig.=0,718; UND: M-W U. Asymp. Sig.=0,931).

We examined whether there is a significant difference in students' responses based on their previous year's (2022/2023) academic average. Due to the sample size, the responses were divided into three groups: (1) 1.0-1.99; (2) 2.0-2.99; and (3) 3.0-5.0. According to this approach, we did not find a significant difference in any of the octants (ADM: K-W H. Asymp. Sig.=0,323; DIS: K-W H. Asymp. Sig.=0,911; HFR: ANOVA Scheffe=0,257; LEA: ANOVA Scheffe=0,277; SRE: ANOVA Scheffe=0,759; STR: K-W H. Asymp. Sig.=0,488; UNC: K-W H. Asymp. Sig.=0,320; UND: K-W H. Asymp. Sig.=0,167).

Finally, we examined whether there is a significant difference in students' responses based on their favorite subject. Students could list any subject they preferred. Five students did not provide an answer to this question. The responses were divided into three groups due to sample size: (1) humanities subjects (English, Hungarian, Slovak, History); (2) science subjects (Mathematics, Biology, Physical Education); and (3) other subjects (Music, Religious Education, Art). We used the Kruskal-Wallis test for five dimensions, while ANOVA was used for the HFR, LEA, and SRE dimensions (see Table 8). According to this approach, no significant differences were found in any of the octants.

Table 8: Significance Among Octants Based on Students' Favorite Subject I.

	ADM	DIS	HFR	LEA	SRE	STR	UNC	UND
K-W H. Asymp. Sig.	0,150	0,313	–	–	–	0,167	0,359	0,789
ANOVA (Scheffe)	–	–	0,505	0,679	0,208	–	–	–

Source: own editing

Since 45.8% of the students (22 individuals) indicated Physical Education as their favorite subject, we examined whether there are significant differences based on the students' responses according to their favorite subject as follows: (1) Physical Education; (2) All other subjects. We used the Mann-Whitney test for five dimensions and ANOVA for the HFR, LEA, and SRE dimensions (see Table 9).

Table 9: Significance Among Octants Based on Students' Favorite Subject II.

	ADM	DIS	HFR	LEA	SRE	STR	UNC	UND
M-W U. Asymp. Sig.	0,109	0,026	–	–	–	0,213	0,075	0,166
ANOVA	–	–	0,359	0,595	0,399	–	–	–

Source: own editing

Regarding the dissatisfied – sceptical attitude (DIS), we found a significant difference based on the students' responses. Students who have physical education as their favorite subject perceive the teacher's interpersonal behavior as much more dissatisfied – sceptical compared to those students whose favorite subject is not physical education.

In Table 10, we examined whether there is any correlation between the different octants. Since 4 octants are not normally distributed, we used Spearman's correlation for this analysis (Table 10).

Table 10: Scale Intercorrelations for QTI

QTI Scale	Scale Intercorrelation							
	ADM	**DIS**	**HFR**	**LEA**	**SRE**	**STR**	**UNC**	**UND**
Admonishing (ADM)	–	0,290	-0,284	-0,266	-0,133	0,288	0,209	-0,143
Dissatisfied, suspicious (DIS)		–	-0,201	-0,131	-0,263	0,342	0,321	**-0,508**
Helpful, friendly (HFR)			–	0,169	0,064	-0,385	-0,137	0,386
Leadership (LEA)				–	0,035	0,083	-0,125	**0,530**
Student responsibility, freedom(SRE)					–	-0,036	-0,293	0,175
Strict (STR)						–	0,215	-0,227
Uncertain, indecisive (UNC)							–	-0,140
Understanding, consensus seeking (UND)								–

Source: own editing

The leadership (LEA) and the understanding – consensus-seeking (UND) attitudes correlate the highest and positively (0.530). The dissatisfied – sceptical (DIS) and the understanding – consensus-seeking (UND) attitudes correlate the highest and negatively (-0.508). Figure 5 illustrates the characteristic assumptions of the interpersonal teacher behavior model, highlighting the relationships between the understanding – consensus-seeking (UND) and its adjacent and opposite scales (Figure 4).

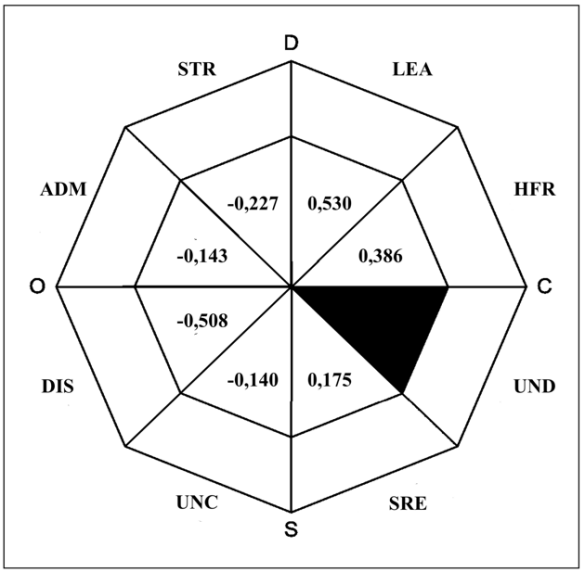

Figure 4: Profile of scale intercorrelations for understanding scale.

Source: based on Fraser, Aldridge, Soerjaningsih (2010, 28) own editing

There is a significant division of student opinions regarding strictness (STR) and student responsibility/freedom (SRE). These variables have the largest standard deviations. We aimed to organize student opinions into homogeneous groups based on these two dimensions. We wanted to identify the background factors that most contribute to the differences between these groups. Since strictness and student responsibility/freedom are opposites, we analyzed these two variables together using cluster analysis. Utilizing the Ward method, we identified three clusters, illustrated in Figure 6. Based on Figure 5 and the students' responses, the teacher in question is characterized by (1) leniency, (2) neither leniency nor strictness, and (3) both strictness and leniency.

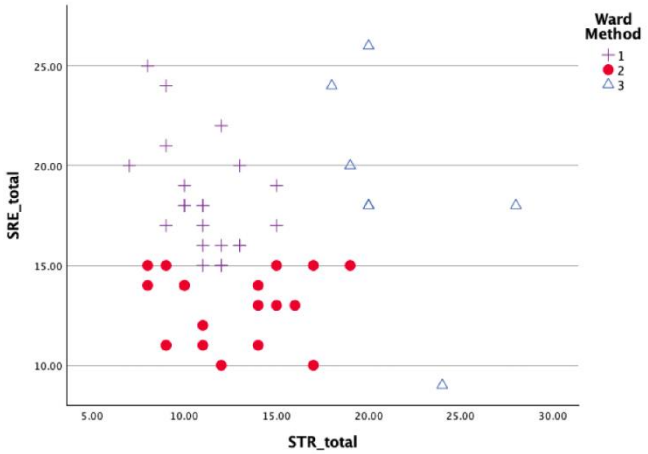

Figure 5: Clusters in SRE – STR dimensions

Source: own editing

5. Discussion and Answers to the Research Questions

In our study, we aimed to answer three research questions. The first research question (Q1): What is the interaction style of a history teacher in a Hungarian-language elementary school in a Hungarian-speaking environment in Slovakia from the perspective of the students? We measured the interaction style of the current teacher using a questionnaire, which assessed the teacher's interaction style across eight dimensions. A total of 48 students from three classes participated in the study. The lowest score in the sample was in the UNC dimension (9.10), which corresponds to the uncertain – indecisive dimension. The highest score was in the HFR dimension (27.92), which corresponds to the helpful – friendly dimension. Based on these results, we can conclude that the students in the sample perceive the teacher as helpful, friendly, understanding, consensus-seeking, directive, and decisive. According to the students, the teacher is least characterized by an uncertain, indecisive, reproving, warning, dissatisfied, and sceptical attitude. Student opinions are divided regarding the strict – assertive and lenient – soft-hearted attitudes. The eight dimensions in the study were ranked as follows (from left to right, with increasingly characteristic personality traits of the teacher): UNC (9.10); ADM (9.19); DIS (9.79); STR (13.15); SRE (16.27); LEA (25.48); UND (26.23); HFR (27.92).

The second research question (Q2): Considering background variables, what differences are observed among various student groups in their perception of the teacher? We examined the students' responses from multiple perspectives, using Mann-Whitney and Kruskal-Wallis tests, as well as ANOVA analyses. In terms of gender, no significant differences were found in the sample. Among the class responses, there was only a significant difference in the HFR (helpful – friendly) dimension: the third group (average: 28.5) rated the teacher significantly less helpful – friendly compared to the first group (average: 27). Considering students' mid-term (2023/2024) history grades, no significant differences were found. Similarly, no significant differences were observed in students' attitudes toward the history subject. We also analyzed the responses based on the highest level of education the students intend to achieve. Due to sample size, we divided the responses into two groups: (1) those planning to complete elementary school or vocational school, and (2) those planning to achieve a high school diploma or higher. In terms of the highest planned educational qualification, we found no significant differences

in seven dimensions based on students' responses. However, there was a significant difference in the understanding – consensus-seeking (UND) attitude: students planning to complete elementary or vocational school rated the teacher significantly higher in the understanding – consensus-seeking attitude compared to those aiming for a high school diploma or higher educational qualification. We also examined the number of people living in a household, but no significant differences were found in any dimension. We asked about the number of siblings the students have and divided the responses into three groups due to sample size: (1) no siblings; (2) one sibling; (3) two or more siblings. Regarding the number of siblings, we found that students without siblings rated the teacher as significantly less uncertain – indecisive compared to students with two or more siblings. In terms of the students' mothers' ages, we concluded that children of mothers aged 40-44 rated the teacher (average: 27.26) as significantly less helpful – friendly compared to children of mothers aged 45 and older (average: 29). Regarding the students' fathers' ages, we found that children of fathers aged 40-44 rated the teacher as significantly less admonishing compared to children of fathers aged 45 and older. We also examined the students' responses based on whether they have their own room at home, but in this approach, no significant differences were found in any dimension. We did not find any significant differences between the dimensions based on students' previous year's end-of-term and previous term average grades. We also examined students' responses based on their favorite subject. Due to the sample size, we divided the responses into three groups: (1) humanities subjects (English, Hungarian, Slovak, History); (2) science subjects (Mathematics, Biology, Physical Education); and (3) other subjects (Music, Religious Education, Art). According to this approach, we did not find any significant differences between the dimensions. We also classified favorite subjects into: (1) Physical Education; (2) all other subjects. Based on this classification, we found a significant difference in the dissatisfied – sceptical attitude (DIS): Students who consider Physical Education their favorite subject perceive the given teacher's interpersonal behavior as significantly more dissatisfied and sceptical compared to those who do not consider Physical Education their favorite subject.

In this study, we reported on the results of our research conducted among three classes (48 students) in a primary school. The study included 31 males and 17 females. We answered the two research questions formulated at the beginning of our study. Through this research we learned how students perceive the interpersonal behavior of the given teacher.

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