Educational Needs of Form Teachers in Primary and Secondary Schools in Slovakia: Pilot survey results

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Abstract

An innovative approach to delivering pre-service teacher training to student teachers in individual areas is considered crucial in the smooth digital transformation of education in Slovakia. One of the major shortcomings of the current pre-service training of student teachers is the fact that not all higher education institutions involved in the teacher trainee preparation have incorporated into the relevant part of the curricula the area of acquisition of specific competences of the form teachers with such accent as the requirements of practice would require. The authors present the conceptual and methodological background of a pilot sample survey focused on self-assessment of the educational needs of form teachers at the secondary level of education in Slovakia. The specification of the assessment areas was based on extensive research of available literature, as well as on personal discussions led by different experts.

Keywords: Pre-service teacher training, Self-assessment of teachers, Form teacher, Pedagogical innovation, Research instrument verification

1 Introduction

Quality professional preparation of teachers is one of the key themes of the expert discussions, devoted to the content changes in undergraduate teacher training programs at

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universities. One of the major shortcomings of the current pre-graduate training of student teachers, in agreement with Hermochová (2010), is the fact that not all higher education institutions involved in the preparation of future teachers of regional education (primary and lower and upper secondary level of education) have incorporated into the relevant part of the curricula the area of acquiring specific competences of a form teacher at such a level, as the requirements of practice would require (Kondrla et al., 2023). In the context of the above, a grant project is being carried out at the Faculty of Education of Comenius University, the aim of which is to innovate the curricula of the relevant part of the study programs of the undergraduate preparation of future teachers so that the graduates of teacher study programs would be better prepared for specific situations related to the key competences of a form teacher in primary and secondary schools. By specific situations, we mean situations de-terminated mainly by form teachers' communication with pupils' (students') guardians in solving learning and behavioural problems, classroom organisation and management, and interpersonal relations among pupils (students).

At this point, we consider it necessary to note that the paper is a follow-up to a paper presented at the 26th *International Conference on Interactive Collaborative Learning* (Záhorec et al., 2023). In the conference paper, the authors outlined the research design and data collection that followed. The paper also summarises the results of pilot testing of the developed measurement tool to assess its reliability and to identify suspect items through reliability/item analysis. The current paper discusses the results obtained from the pilot survey aimed at self-assessment of the educational needs of former teachers at the secondary level of education (ISCED 2; ISCED 3) in Slovakia in a broader context.

2 Context of the Research and Objectives

Pedagogical research has always focused on the teacher, but the form teacher has not enjoyed much popularity in the Czech research environment, especially in recent years (Bendová, 2016), and the same is true for Slovakia as well. More recent research focusing on the position of the form teacher includes the research of Krátka, Gulová, Střelc (2020) and Bacúšan Nevolná (2023). However, research on teachers in general also yields valuable findings more closely tied to the specialized activity of the form teacher.

Analysis of international theoretical and research studies has identified areas where novice teachers encounter problems, one of which is that their preservice training does not equip them with sufficient knowledge, skills, and dispositions to practice the profession (Vítečková et al., 2016; Gadušová, Vítečková, 2014; Freeman et al., 2014; O'Neill, Stephenson, 2011; Cíbiková, 2012; Jones, 2006; Pigge, Marso, 1997). Průcha (2009) states that based on the results of research conducted in the countries of the USA, Canada and Australia, beginning teachers encounter problems in practice, such as, in particular, maintaining discipline in the classroom, motivating pupils, developing relationships with parents, organizing the work of pupils in the classroom, etc. This is closely related to the fact that from day one they perform

various duties, including those of a form teacher, which is also confirmed by the research of Kalhous and Horák (1996), and Bacúšan Nevoľná (2023). However, teachers rate the university preparation for the position of a form teacher as insufficient (Boďo, 2011).

University preparation related to classroom management has long been perceived by teachers not only in our environment but also abroad as a weaker aspect of their preservice training, with teachers pointing primarily to its overly theoretical (Cothran, Kulinna, Garrahy, 2003; Šimoník, 1994; Havlík, 2003; Vašutová, 2004; Valkovičová, 2008; Pavera, Cudlínová, 2019). Preparation in the field is usually evaluated positively by teachers, but preparedness in dealing with pupil discipline, working with pupils with special educational needs (SEN), cooperation with parents, or mastery of pedagogical documentation is evaluated as insufficient (Vítečková, Gadušová, 2015).

Which areas of classroom management do teachers reflect as deficient in their teaching activities? Based on the analysis of research findings, it appears that communication with parents and problem behaviour of pupils, which are among the significant sources of teachers' professional load, are not sufficiently covered in preservice training (Lasky, 2000; Keyes, 2002; Pavlas et al., 2019; Viktorová, 2020; Urbanovská, 2017; Fazel et al., 2014). Coping with pupil problem behaviour is a challenging area of classroom management, but not only novice teachers in Slovakia but also abroad (Nagyová, 2016; Hong, 2012; Johansen et al., 2011) specifically perceive their lack of preparedness to prevent and deal with pupil problem behaviour. Similar is the case with preparation for working with pupils with special educational needs (Oliver, Reschly, 2010; Hunter-Johnson et al., 2014) and keeping pedagogical documentation (Bacúšan Nevolná, 2023; Havlík, 2003; Vítečková, Gadušová, 2015).

3 Development of a Methodology for Self-assessment

The purpose of the conducted sample survey was to map the opinions of a selected sample of teachers at the (Slovak) secondary level of education (ISCED 2; ISCED 3) on the need for further education in selected activities of a form teacher to form and develop their professional competences. The research sample consisted exclusively of teachers performing the activity of a form teacher at the secondary level of education according to the legislative provision of § 37 (section 2) of Law No. 138/2019 on pedagogical employees and professional staff. The sampling frame for implementing the questionnaire survey was constructed using the available sampling technique.

We used a quantitative approach to address the research problem. The methodology of the analysis of self-assessment of educational needs of teaching staff in the career position of a form teacher in primary and secondary school (ISCED 2; ISCED 3) was based on screening the opinions of teachers with different lengths of teaching experience, with a different focus of their subjects (majors), as well as concerning different levels and levels of school education, at which the teachers in question operate according to the Law No. 245/2008 on education and training.

To screen the opinions of the research sample of participants, we used a questionnaire consisting of 89 items incorporated into seven areas of the inquiry:

- area *A* – aimed at identifying the respondent in terms of his/her gender, length of teaching experience in the (career) position of a form teacher, as well as with regard to the nature of the subjects s/he teaches or the type of school in which s/he concerned work, etc.;
- area *B* – aimed at identifying needs for further training of the form teachers in selected administrative activities related to the job of a form teacher in a primary/secondary school;
- area *C* – aimed at identifying needs for further training of the form teachers in the area of coordinating the classroom in which they serve as a form teacher;
- area *D* – aimed at identifying needs for further training in selected educational activities falling within the competencies of a form teacher in a primary/secondary school;
- area *E* – aimed at identifying needs for further training of form teachers in selected activities falling within the field of communication and cooperation of the form teacher with the school management, with pedagogical and professional staff of the school, with the pupil's legal representatives, with representatives of various institutions and organizations, with pupils;
- area *F* – aimed at identifying needs of form teachers for further education in the field of pedagogical diagnostics falling within the scope of a form teacher's work;
- area *G* – aimed at identifying needs of form teachers to undertake further training in the area of selected preventive activities related to their job description as a form teacher in primary/secondary schools.

The specification of the above-mentioned assessment areas was based on an extensive search of available domestic and foreign sources (Záhorec et al, 2021; Krátka, Gulová, Střelec, 2020; Kadlečík, Munk, 2018; Freeman et al., 2014; O'Neill, Stephenson, 2011), on consultations with experts in the research area and, last but not least, on personal discussions conducted among the experts who have a wealth of professional and pedagogical experience in the field of primary, secondary, as well as continuing professional education of teaching staff in regional education within the educational disciplines on which our research focuses.

At the heart of any measurement process is the acquisition of data, which must be objective, reliable and valid. Since the questionnaire used for the purpose of our research was not standardized, but was created by us, we considered it necessary to validate it in terms of its reliability before using it.

4 Research Instrument Verification

The validity of the research instrument was assessed through its use in pilot research to assess its reliability, and to identify suspect items through reliability/item analysis. By analyzing reliability/items, we can increase the reliability of the questionnaire, or we can avoid using a poor-quality questionnaire through which the data obtained would have no meaningful value, no matter what advanced method we use to process it further. Verification of the questionnaire was carried out on a research sample of 12 secondary education teachers, with

a majority of females gender with different lengths of teaching experience. The pilot research sample of respondents was statistically sufficient, and therefore, it was possible to assess the reliability of the questionnaire and identify its suspect items using statistical methods.

Out of the total 89 items of the developed research instrument, 60 ordinal items grouped in 6 assessment areas (in the following part of the text referred to as areas *B* to *G*) were included in the statistical measurement for its verification process. In these items, teachers' attitudes towards the assessed aspects are measured using a five-point Likert scale ranging from 5 to 1.

A higher level of agreement with the statement is marked with a 4 (*rather yes = rather I have a need for further education in the activity*), and complete agreement is marked with a 5 (*yes = I have a need for further education in the activity*). A higher level of disagreement (*rather no = rather I have no need for further education in the activity*) with the statement made is indicated by a value of 2, complete disagreement (*no = I have no need for further education in the activity*) is indicated by a level of 1. The choice of a neutral, emotionally indifferent evaluative attitude towards questions B1 to B12 of the administered questionnaire is marked with a value of 3 (*neither yes nor no = I both have and do not have a need for further education in the activity*). For each respondent, the value of the scale was recorded for each ordinal item of the administered questionnaire according to the degree of positive or negative attitude towards the aspect under consideration.

The research data collection questionnaire was administered electronically. Teachers who completed this questionnaire had completed several innovation and updating programs/courses in their in-service training focusing on selected activities applicable to the intent of their practice as an elementary/secondary school form teacher on which the items of our research instrument focus. On this basis, we can consider the research sample to be representative and the self-assessment of the participating respondents to be relevant in terms of the focus of the research.

4.1 Results of the Pilot Questionnaire Survey

Descriptive statistics from the pilot questionnaire survey, processed in the form of box plots, are presented separately for each of the areas *B – G* of the survey for the entire research population without differentiation of respondents, i.e., without segmentation of respondents into groups based on any of the aspects asked through items A1 to A11 grouped in the introductory part of the questionnaire.

Based on the analysis of the responses obtained, box plots 1 to 6 summarise how the respondent teachers perceive the need for further training in selected agendas falling within the intent of a form teacher's educational and diagnostic activities in the primary/ secondary school.

Based on the analysis of the responses received, box charts 1 to 6 summarise how the teachers interviewed perceive the need for further training in selected agendas falling within

the intent of the educational and diagnostic activities of the form teacher in the primary/ secondary school.

The box plots (1 to 6) visualise the median, quartiles (upper and lower quartile ranges), and variance (the interval within which the individual response values of the variable of interest range) in the ratings of each item in a given assessment area. This means that we can see the most critical quantiles in the graph, namely the minimum and maximum observed values, the lower (25th percentile) and upper quartiles (75th percentile), and the median of the scale (50th percentile).

From the range of variation, i.e., the interval in which the individual values of the responses to the variable under study range, we can see that the choice of the five-value scale was correct, given that respondents used the full range of the scale for their responses to the individual items. From the quartile range (i.e., the middle 50 % of the values), we can see the different variability of the responses to each item.

A set of six box plots visually represents teachers' ratings across different areas of the questionnaire. Box Plots 1 and 2 illustrate ratings for individual items in Areas B and C, respectively. Box Plots 3, 4, 5, and 6 detail teachers' ratings for items in Areas D, E, F, and G. These visualisations offer a concise yet comprehensive overview, enhancing interpretability and facilitating insightful analysis of diverse educational dimensions.

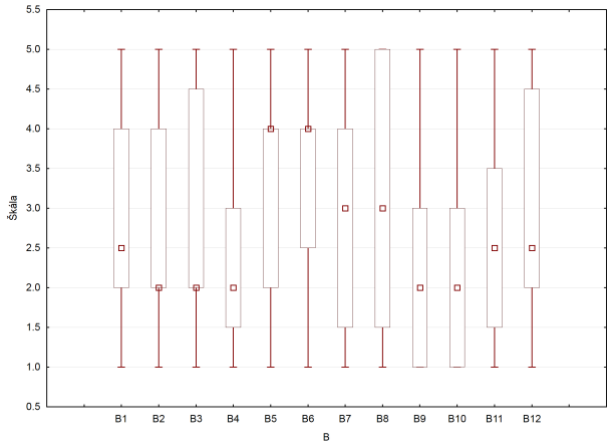

Figure 1: Box plot – visualisation of the differences in the scores of the individual items in questionnaire area *B.*

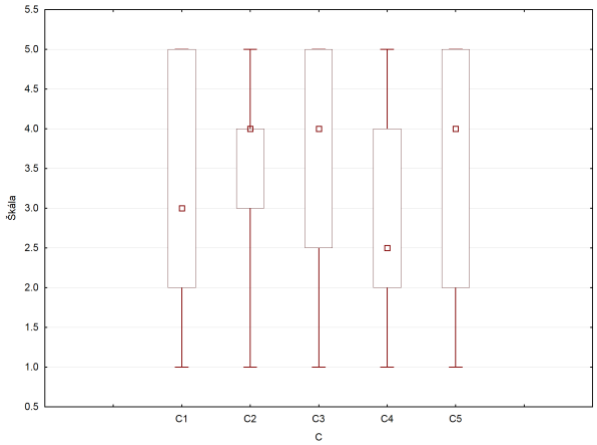

Figure 2: Box plot – visualisation of the differences in the scores of the individual items in questionnaire area *C.*

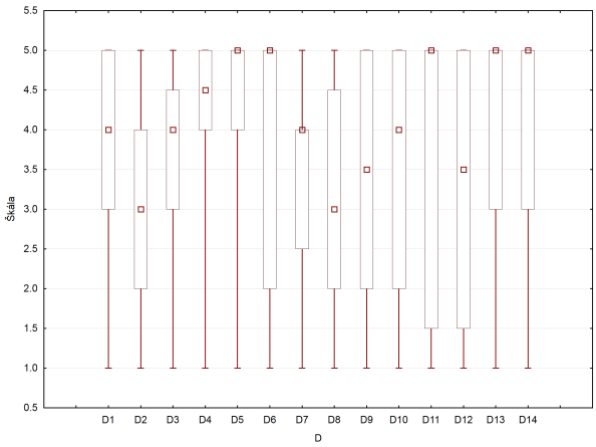

Figure 3: Box plot – visualisation of the differences in the scores of the individual items in questionnaire area *D.*

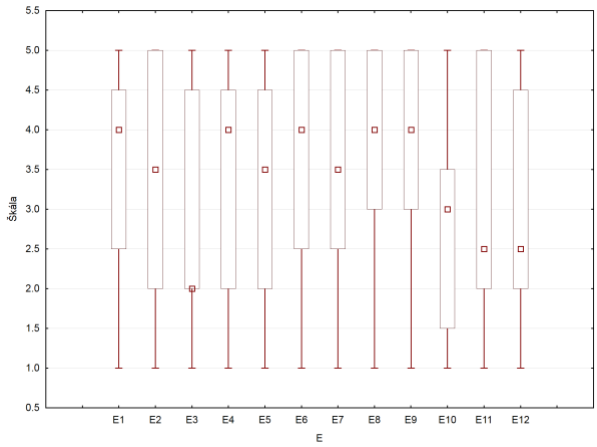

Figure 4: Box plot – visualisation of the differences in the scores of the individual items in questionnaire area *E.*

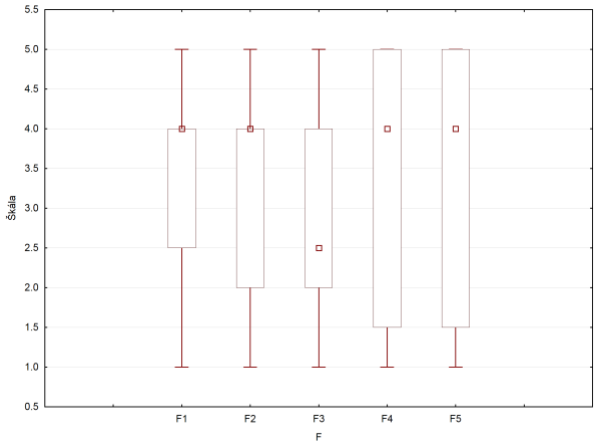

Figure 5: Box plot – visualisation of the differences in the scores of the individual items in questionnaire area *F.*

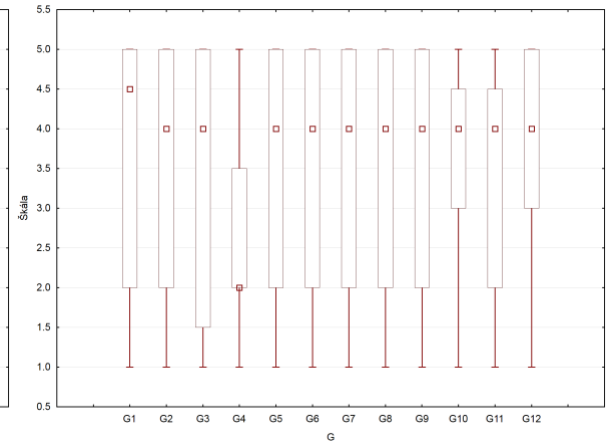

Figure 6: Box plot – visualisation of the differences in the scores of the individual items in questionnaire areaG.

In order to assess the reliability of the measurement instrument used, after receiving the research data from the research sample of the respondents – form teachers of primary schools / secondary schools – we evaluated its internal consistency, which is an indicator of the targeting of the items to the area under study. Based on the conducted item analysis, we wanted to identify both possible suspicious items in the tested areas *B* – *G* of the questionnaire, which would reduce its overall reliability, and the items that had the most significant impact on the variability of the overall score of the used research instrument.

We consider it a positive finding that suspect items of the questionnaire that would reduce its internal consistency were identified only within the tested area *B* (B1 – B12). No suspect items were identified in the other areas *C* to *G* that would reduce its overall reliability. This fact, therefore, argues in favour of internal consistency among the items in tested areas *C* – *G* of the questionnaire. A large (r > 0.5) to very large (r > 0.7) positive correlation was overwhelmingly identified between the items in the tested areas *C* – *G* – a directly proportional linear relationship between the items and the total do-test score.

The correlation matrix of the test items from area *B* of the questionnaire is presented in Table 1 using a colour map. In this case, suspect items are those with independence or very low positive correlation (grey, < 0.2), independence or negative correlation between items (red, > -0.2), or low positive correlation (pale blue, < 0.4) has been identified. Conversely, blue-red indicates a positive correlation (> 0.4), which argues in favour of the targeting of those items to the area of interest.

The results of the statistical validation of the reliability of the research instrument are presented in Section 4.2.

Table 1: Correlation matrix of the items of the monitored area *B* of the questionnaire.

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
B1	1.0000	0.1951	0.6278	0.2306	0.4332	0.5264	0.7483	0.4583	0.4507	0.2072	0.4185	0.5028
B2	0.1951	1.0000	0.4264	0.7679	0.4599	- 0.0188	0.3965	0.5550	0.4537	0.3435	0.3241	0.4946
B3	0.6278	0.4264	1.0000	0.4873	0.8250	0.5199	0.9197	0.7159	0.5666	0.2720	0.3870	0.7052
B4	0.2306	0.7679	0.4873	1.0000	0.4916	0.1876	0.4123	0.4856	0.4213	0.7360	0.5510	0.5719
B5	0.4332	0.4599	0.8250	0.4916	1.0000	0.6580	0.6479	0.6962	0.6620	0.3268	0.3742	0.7069
B6	0.5264	- 0.0188	0.5199	0.1876	0.6580	1.0000	0.3915	0.4190	0.5277	0.2964	0.3915	0.5074
B7	0.7483	0.3965	0.9197	0.4123	0.6479	0.3915	1.0000	0.7825	0.5469	0.3268	0.4030	0.7344
B8	0.4583	0.5550	0.7159	0.4856	0.6962	0.4190	0.7825	1.0000	0.7807	0.4861	0.3903	0.9037
B9	0.4507	0.4537	0.5666	0.4213	0.6620	0.5277	0.5469	0.7807	1.0000	0.4453	0.1471	0.8556
B10	0.2072	0.3435	0.2720	0.7360	0.3268	0.2964	0.3268	0.4861	0.4453	1.0000	0.6679	0.5627
B11	0.4185	0.3241	0.3870	0.5510	0.3742	0.3915	0.4030	0.3903	0.1471	0.6679	1.0000	0.3226
B12	0.5028	0.4946	0.7052	0.5719	0.7069	0.5074	0.7344	0.9037	0.8556	0.5627	0.3226	1.0000

Legend to Table 1: r >= -1 -0.80 -0.60 -0.40 -0.20 0 0.20 0.40 0.60 0.80

From the correlation matrix of the questionnaire items, we can see (Table 1) that between most of the items of the study area *B,* the value of the correlation coefficient r > 0.4, from which we can conclude that there is a certain degree of interdependence between these items (the more the correlation coefficient approaches the value of 1, the stronger is the directly

proportional dependence). This indicates a positive correlation between the items, which favours the internal consistency of the questionnaire's domain of interest.

The exceptions are items B2, B4, B7, B10, B11 and B12, which do not correlate with some of the other questionnaire items, from which we can conclude that the values vary independently (Table 1). A low positive correlation (correlation coefficient $r < 0.4$) and a very low positive correlation (correlation coefficient $r < 0.2$) were identified between some items in domain B of the questionnaire, respectively. There is a negative correlation ($r < 0$) between items B2 and B6, i.e., the values change together but in the opposite direction (while the values of one variable decrease, the other variable increases). Based on these results, we identify items B2, B4, B6, B7, B10, B11, and B12 as suspects.

4.2 Results of the Reliability Item Analysis of the Developed Research Tool

As part of the testing, we also applied a multidimensional exploratory technique, namely reliability/item analysis of the developed research instrument. Tables 2 to 5 visualise the results obtained from the above analysis.

The reliability of the research instrument we developed was confirmed by assessing it and identifying suspect items through reliability/item analysis. The overall reliability of the questionnaire in the above six areas of inquiry, i.e., in terms of items B1 to B12 (area *B*), C1 to C5 (area *C*), D1 to D14 (area *D*), E1 to E12 (area *E*), F1 to F5 (area *F*) and items G1 to G12 (area *G*) was assessed using Cronbach's alpha coefficient, the standardised reliability coefficient and the correlation coefficient. Finally, the questionnaire was modified in its final form according to the comments identified.

The reliability coefficient value of 0.99 (99 %) reflects the proportion of the sum of the variability of the scale items to the total variability of the questionnaire. Both estimates (Cronbach's alpha and standardised alpha) are the same, indicating high internal consistency of the questionnaire items (Table 2).

Table 2: Summary statistics of the questionnaire.

	Valid N	Mean	Standard deviation	Average inter-item correlation	Cronbach's alpha	Standardised alpha
Summary for scale:	12	197.3330	75.1197	0.7285	0.9922	0.9922

The questionnaire can be considered highly reliable regarding the above group of items. However, the average correlation between the items (0.7285) indicates that the reliability of the constructed research instrument could be further increased after post-tensionally removing some items or modifying them.

Item reliability analysis of the validated research instrument confirmed the results of the data exploration, where the most suspect items reducing the overall reliability of the

questionnaire were identified in survey area *B*, in which we asked teachers through the items to what extent they perceived the need for further training in the stated administrative activities associated with the job of a form teacher in a primary/secondary school (Table 3). Another area of testing in which suspicious items of the administered questionnaire were identified was area *F*, through the items which we asked teachers to what extent they perceived the need for further education in the area of pedagogical diagnosis falling within the intent of the job description of a form teacher (Table 4). The final area of the pilot testing of the research instrument in which suspect items were identified was area *D*, in which we asked teachers through items to what extent they perceived a need for further training in the educational activities listed above falling within the remit of a form teacher in a primary/secondary school (Table 5).

On the other hand, we are pleased to note that the results of the do-questionnaire verification confirmed that query areas *C*, *E* and *G* do not show any suspicious post-items that would reduce the overall reliability of the developed research instrument. These are items focusing on teachers' self-reflection on the need for further training in the area of coordination of the primary/secondary school classroom in which they form teachers (area *C*), as well as items focusing on teachers' need for further training in the area of communication and collaboration of the classroom teacher with other actors, such as with the school administration, with other pedagogical and professional staff of the school, with pupils and their legal representatives, or with representatives of different institutions and organisations (area *E*). The area of inquiry, through the items of which we ascertained from teachers how they perceived their need for further training in selected preventive activities related to the job description of a form teacher in primary/elementary school, was also the area (*G*), which after testing did not show any post-suspicious items reducing the overall reliability of the developed research instrument.

Based on the above, in the next section of the paper, we will focus on a more detailed statistical analysis of the partial results of the reliability assessment of the items within the inquiry areas *B*, *D*, and *F* of the administered research instrument, i.e., those areas within which suspect items of the administered research instrument were identified.

4.2.1 Analysis of Suspicious Items in Questionnaire Area B

The data tabulation (Table 3) approximates the statistics of the area *B* questionnaire after removing the relevant item for the entire research population of respondents without differentiating them according to individual segmentation factors.

Table 3: Area B questionnaire statistics after removal of relevant items.

Statistical indicator / evaluated item	Mean if deleted	Standard deviation if deleted	Item-total correlation*	Alpha if deleted**
B1	194.4167	70.9712	0.7532	0.992136
B2	194.6667	**71.4217**	**0.3935***	**0.992447****

B3	194.5000	70.8267	0.7442	0.992147
B4	195.0000	71.2659	0.5194*	0.992339**
B5	194.1667	70.8012	0.7942	0.992095
B6	193.9167	71.1354	0.6575*	0.992218**
B7	194.5000	70.8549	0.7554	0.992133
B8	194.2500	70.7532	0.7226*	0.992184
B9	195.0000	71.0176	0.6523*	0.992231**
B10	194.4167	70.7407	0.8162	0.992073
B11	194.6667	71.0954	0.5950*	0.992286**
B12	195.0833	71.1928	0.5285*	0.992347**

Legend to Table 3: * < average correlation between items; ** > Cronbach's alpha

B1 – the agenda related to the interim and final assessment of pupils' performance; B2 – agenda related to the record of pupils' achievements; B3 – agenda related to the assessment of the pupils' behaviour and the granting of educational measures; B4 – agenda related to school attendance; B5 – agenda related to the form teacher's reporting obligation; B6 – agenda related to the teaching of pupils with SEN; B7 – agenda related to the preparation of documents for the meetings of the pedagogical council; B8 – agenda related to the organization of joint class activities; B9 – agenda related to the distribution and registration of textbooks; B10 – agenda related to the Covid-19 pandemic; B11 – agenda related to class meetings and parent associations; B12 – other agenda (informed consent, questionnaire for parents about personal data, class fund...); D5 – cooperation of the form teacher with experts in solving problematic behaviour of pupils; D4 – cooperation of the form teacher with parents in solving problematic behaviour of pupils; F2 – preparation of the interview, its implementation and data evaluation; F4 – preparation of sociometry, i.e. j. diagnosis of social relations between students in the classroom, its implementation and data evaluation; F5 – other pedagogical diagnostics (e.g. test, scaling).

The mean values of the total questionnaire score after removing the item, the standard deviation values, the correlation values between the item and the total questionnaire score, and the reliability coefficient values are reported.

Measurement using the scale showed (Table 3) that six items – B1, B3, B5, B7, B8, B10 from area *B* of the administered research instrument correlated with the total score of the scale and the reliability coefficient – Cronbach's alpha (0.9922) decreased after removing them. We observe the opposite situation for the remaining items, i.e., B2, B4, B6, B9, B11 and B12; in these cases, the reliability coefficient (Alpha if deleted) increased.

From the pilot testing of the research instrument, it is noteworthy, among other things (Table 3), that for items B2, B4, B6, B9, B11, and B12, reducing the overall reliability of the questionnaire, the correlation between the respective item and the overall score of the questionnaire (Itm-Totl Correl.) shows smaller values than the average correlation between items (0.7285). For the second item (B2), identified as suspect through the correlation analysis of the items of the research instrument, we observe the lowest correlation with the total questionnaire score (0.3935*) among all the items of area *B* tested. At the same time, the reliability coefficient increased the most after its removal (0.9924**). An interesting finding is that for the eighth item (B8), as in the case of items B2, B4, B6, B9, B11, and B12, a lower correlation value with the total questionnaire score (0.7226*) than the average correlation between items (0.7285) was observed. However, after its removal, the reliability coefficient remained almost unchanged (0.99218**). This means that items B2, B4, B6, B8, B9, B11, and B12 correlate but are below average with the total scale score of the questionnaire, which

leads us to conclude that the values vary independently. Based on these results, these items have been identified as suspects; for the remaining items, i.e. B1, B3, B5, B7, and B10, an above-average correlation was identified – a proportional linear relationship between the items and the total questionnaire score.

It is evident from the tabulation of the data (Table 3) that the overall resulting standard deviation (Standard deviation if deleted) values of the respondents' responses to items B1 to B12 were not extremely different. For all the tested sub-items of area *B* of the questionnaire, we observe a phenomenon where the value of Standard Deviation (75.1197) decreased when the respective item was deleted. The smallest decrease in standard deviation is observed just for items B2, B4, B6, B9, B11 and B12, reducing the overall reliability of the questionnaire. In terms of this statistical indicator, the most homogeneous responses were recorded for item B2 (standard deviation after removing item B2: 71.4217), where the variability of the total questionnaire score decreased the least after its removal. This is the item in which we investigated the response of primary/elementary school teachers to the need for further training in the agenda related to recording pupils' school achievements.

Scaled measurement showed that after removing any of the items B1 – B12 of the research instrument's area *B*, the mean score of the questionnaire (Mean if deleted) dropped. The most noticeable drop in the value of this statistical indicator can be seen for item B6 (193.9167). Through their responses to this item, primary/elementary school teachers were positive about the need for further training in the agenda related to the teaching of pupils with special educational needs. Along with this statement, it should be added that the respondents' answers for this item were among the most homogeneous among the items B1 to B12 (Figure 1).

4.2.2 Analysis of Suspicious Items in Questionnaire Area *D*

Through the items of the questionnaire's fourth (D) area, we ascertained the teachers' needs for further training in educational activities falling within the scope of a form teacher's responsibilities in the primary/ secondary school. Table 4 presents the questionnaire statistics of area *D* after removing the relevant item for the entire research population of respondents without distinguishing them according to each segmentation factor.

Table 4: Area D questionnaire statistics after removal of relevant items.

Statistical indicator / evaluated item	Mean if deleted	Standard deviation if deleted	Item-total Correlation*	Alpha if deleted**
D1	193.6667	70.6757	0.9048	0.991989
D2	194.4167	70.7689	0.9167	0.991992
D3	193.7500	70.6141	0.9451	0.991949
D4	193.0833	71.2197	0.6397*	0.992232**
D5	193.0000	71.2367	0.6148*	0.992251**
D6	193.5833	70.4680	0.8842	0.992003
D7	194.0000	70.6694	0.9534	0.991950
D8	194.1667	70.6810	0.8812	0.992010

D9	193.9167	70.5378	0.8892	0.991997
D10	193.8333	70.4969	0.9148	0.991969
D11	193.7500	70.3777	0.8775	0.992018
D12	194.0000	70.5065	0.8546	0.992038
D13	193.4167	70.4467	0.9490	0.991931
D14	193.4167	70.4467	0.9490	0.991931

Legend to Table 4: * < average correlation between items; ** > Cronbach's alpha

D1 – agenda related to the solution of problem behaviour of pupils in the school environment; D2 – agenda related to the solution of problem behaviour of pupils in the school environment; D3 – agenda related to the support of the school in solving problem behaviour of pupils; D4 – agenda related to the cooperation of the form teacher with parents in solving problem behaviour of pupils in the school environment; D5 – agenda related to the form teacher's co-working with professionals in addressing problem pupil behaviour in the school environment; D6 – agenda related to the application of methods aimed at maintaining pupil discipline in the school classroom; D7 – agenda related to documents used in addressing problem behaviour and pupil discipline in the school classroom; D8 – agenda related to the application of appropriate consent to desirable pupil behaviour in the school environment; D9 – agenda related to the acceptance of pupil personality and individuality; D10 – agenda related to the choice of appropriate communication between classroom teachers and pupils in the school classroom; D11 – agenda related to creating a favourable climate among pupils in the school classroom; D12 – agenda related to minimising the use of negative/punitive assessment of pupils; D13 – agenda related to promoting pupils' teamwork in the educational process carried out in the school; D14 – agenda related to promoting pupils' self-development.

Measurement using the scale showed (Table 4) that twelve items – D1, D2, D3, D6 to D14 from area *D* of the administered research instrument correlated with the total score of the scale and after removing them, the reliability coefficient – Cronbach's alpha (0.9922) decreased. For the remaining two items, i.e., D4 and D5, we observe the opposite situation; in these cases, the reliability coefficient (Alpha if deleted) increased.

From the pilot testing of the research instrument, it is noteworthy, among other things (Table 4), that for items D4 and D5 reducing the overall reliability of the questionnaire, the correlation between the respective item and the overall score of the questionnaire (Itm-Totl Correl.) shows smaller values than the average correlation between items (0.7285). For the fifth item (D5), identified as suspect through the correlation analysis of the items of the research instrument, we observe the lowest correlation with the total questionnaire score (0.6148*) among all the items of area *D* tested. At the same time, the reliability coefficient increased the most after its removal (0.9923**). This means that items D4 and D5 do not correlate with the total scale score of the questionnaire, from which we can conclude that the values vary independently. Based on these results, these items have been identified as suspects. For the remaining items, i.e. D1, D2, D3, D6 to D14, a positive correlation – a directly proportional linear relationship between the items and the total questionnaire score was identified.

It is evident from the tabulation of the data (Table 4) that the overall resulting standard deviation (Standard deviation if deleted) values of the respondents' responses to items D1 to D14 were not extremely different. For all the tested sub-items of area *D* of the questionnaire, we observe a phenomenon where the value of Standard Deviation (75.1197) decreased when

the respective item was deleted. The smallest decrease in standard deviation is observed for the aforementioned items (D4, D5) reducing the overall reliability of the questionnaire. In terms of this statistical indicator, the most homogeneous responses were recorded for item D5 (standard deviation after removing item D5: 71.2367), where the variability of the overall questionnaire score decreased the least after its removal. This is the item in which we looked at the responses of primary/ secondary school teachers on their need for further training in the agenda related to the form teacher's co-working with professionals in dealing with pupils' problem behaviours in the school setting.

Scaled measurement showed that when any of the test items D1 – D14 of area *D* of the research instrument were deleted, the mean score of the questionnaire (Mean if deleted) decreased. The largest drop in the value of this statistical indicator is noticeable for item D5 (193.0000). Through their responses in this sub-item, the primary/secondary school teachers expressed their positive opinion about the need for further training in the area of a form teacher's cooperation with professionals in dealing with problem behaviours of pupils in the educational process. At the same time with this statement, it should be added that the respondents' answers for this item were among the most homogeneous among the items D1 to D14 (Figure 3).

4.2.3 Analysis of Suspicious Items in Questionnaire Area *F*

Through the items of the sixth (*F*) part of the questionnaire, we ascertained the teachers' needs for further training in the field of pedagogical diagnostics falling within the scope of the form teacher's job description. Table 5 presents the statistics of the area *F* questionnaire after removing the relevant item for the entire research population of respondents without differentiating them according to each segmentation factor. Table 5 approximates the area *F* questionnaire statistics after removing the relevant item for the entire research set of respondents without differentiating them by individual segmentation factors.

Table 5: Area F questionnaire statistics after removal of relevant items.

Statistical indicator / evaluated item	Mean if deleted	Standard deviation if deleted	Item-total Correlation*	Alpha if deleted**
F1	193.9167	70.9277	0.7488	0.992138
F2	194.1667	70.9000	0.7228*	0.992165
F3	194.4167	70.7419	0.8511	0.992040
F4	193.9167	70.8501	0.6613*	0.992252**
F5	194.0000	71.0141	0.5254*	0.992431**

Legend to Table 5: * < average correlation between items; ** > Cronbach's alpha
F1 – agenda related to the concept of design and development of the questionnaire, its administration and evaluation of the data obtained; F2 – agenda related to the preparation of the interview, its implementation and evaluation of the data obtained; F3 – agenda related to the preparation of the post-survey, its implementation and evaluation of the data obtained; F4 – preparation of the sociometry, i.e. F5 – other pedagogical diagnostics (test, scaling...).

The measurement using the scale showed (Table 5) that three items – F1, F2, F3 from area *F* of the administered research instrument correlated with the total score of the scale and after removing them, the reliability coefficient – Cronbach's alpha (0.9922) decreased. For the remaining two items, i.e., F4 and F5 we observe the opposite situation, in these cases the reliability coefficient (Alpha if deleted) increased.

From the pilot testing of the research instrument, it is noteworthy, among other things (Table 5), that for items F4 and F5 reducing the overall reliability of the questionnaire, the correlation between the respective item and the overall score of the questionnaire (Itm-Totl Correl.) shows smaller values than the average correlation between items (0.7285). For the fifth item (F5), identified as suspect through the correlation analysis of the items of the research instrument, we observe the lowest correlation with the total questionnaire score (0.5254*) among all the items of area *F* tested. At the same time, after removing it, the reliability coefficient increased the most (0.9924**). An interesting finding is that for the second item (F2), as in the case of items F4 and F5, a lower correlation value with the total questionnaire score (0.7228*) than the average correlation between items (0.7285) was observed. However, after its removal, the reliability coefficient remained almost unchanged (0.99216**). This means that items F4 and F5 do not correlate with the total scale scores of the questionnaire, from which we can conclude that the values change independently. Based on these results, items F2, F4, and F5 have been identified as suspects. For the other two (F1, F3), a positive correlation – a directly proportional linear relationship between the items and the total questionnaire score – was identified.

It is clear from the tabulation of the data (Table 5) that the overall resulting standard deviation (Standard deviation if deleted) values of the respondents' responses to items F1 to F5 were not extremely different. For all the tested items of area *F* of the questionnaire, we observed a phenomenon where the value of Standard Deviation (75.1197) decreased when the respective item was deleted. In terms of this statistical indicator, we observe the smallest decrease in the variability of the overall questionnaire score for the fifth item (F5), reducing the overall reliability of the questionnaire (standard deviation after removal: 71.0141). This is the item in which we monitored the response of the interviewed primary and secondary school teachers of primary/ secondary schools to the need for further training in the agenda of further pedagogical diagnostics (such as test and scaling) applicable to the intentions of their educational activity.

Scaled measurement showed that after removing any of the research instrument's F1 – F5 area F test items, the mean score of the questionnaire (Mean if deleted) decreased. The most significant drop in the value of this statistical indicator is seen for items F1 and F4 (193.9167), respectively. Through their responses in these items, the primary/secondary school teachers held a positive opinion about the need for further training in the concept of designing and developing a do-questionnaire or in activities related to the application of the diagnostic method of socio-metrics, their administration in the context of obtaining research data, and the subsequent processing and evaluation of the data obtained in this way. At the same time,

with this statement, it should be added that the respondents' answers for item F1 were among the most homogeneous among the inquiry items F1 to F5 (Figure 5).

5 Next phases of the Research Survey

In the next phase of the research survey, a random selection of subjects into a representative sample was carried out. The final version of the author's questionnaire was distributed electronically to form teachers working at ISCED 2 and ISCED 3 in Slovakia and the Czech Republic. Coding, digitisation, and data analysis are currently in progress. In near future, the research findings will be interpreted, and conclusions will be formulated, which will form the basis for the creation of the main outputs of the project (university textbook, web portal). These outputs will be content-compatible, while the web portal will be supplemented with multimedia visuals and textual elements. Both outputs will be created as part of a battery of didactic materials, which could help especially in the undergraduate training of students at universities, as well as form teachers in practice, to orient themselves in the stated activities (agenda) of a form teacher (areas *B* – *F*) to form and develop their professional competences.

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