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Preliminary Report

# Parent participation in the assessment of pupils' need for socio-pedagogical intervention<sup>1</sup>

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## Abstract

The aim of the research presented in this paper is to develop the measurement instrument that will enable the identification of pupils' needs for involvement in the socio-pedagogical intervention based on the assessments of their parents. We present the Pupils' Needs in the Area of Social-pedagogic Intervention – Parents' Version, which is being developed as part of the Development of models of social-pedagogic interventions in elementary schools project, funded by The Education and Teacher Training Agency. The study was conducted on a sample of 2865 parents of third-, fifth- and seventh-graders, from 43 Croatian elementary schools. This paper presents the process of developing the final version of the Questionnaire, which achieves satisfactory metric characteristics (reliability, validity and objectivity). Using factor analysis, we found that the Questionnaire measures the pupils' assessment of attitudes towards their education, obligations, peers, parents, teachers and material gain, as well as communicativeness, emotion control and responsibility in the behavior of pupils.

We show that the developed Pupils' Needs in the Area of Social-pedagogic Intervention Questionnaire –Parent's Version appropriately differentiates pupils with behavioral difficulties from other pupils, while forming categories based on the pupils' gender and age. Moreover, we find that, based on parents' assessments, 13% of pupils have behavioral difficulties, which is in line with the pupils' self-assessments.

**Keywords:** behavioral disorders among elementary school pupils, parents' assessments, socio-pedagogical interventions, standardization of measurement instrument

## Introduction

The contemporary educational systems strongly support the cooperation of all its stakeholders and participants, based on mutual networking and joint work, and always including the connection of the parents and the school. This is an important pedagogical relationship, one which presumes an active involvement of parents or other relevant adults in the child's life in the life of the school, while keeping in mind their role in the child's development and wellbeing (Mahoney and Wiggers, 2007).

This is the sort of interaction of stakeholders that the Croatian educational system seeks to create, as outlined in the *National Framework Standard for Teachers in Elementary and High Schools*

<sup>1</sup> The paper is based on the data collected as a part of the project „Development of models of socio-pedagogic interventions in elementary school” which has been conducted with the support of Croatian Agency for education. Details about the project can be found in Bouillet, D. (2016): An assessment of primary school pupils' needs with regard to planning the socialpedagogic interventions – standardisation of the measurement instrument. *Criminology & Social Integration*, 24, 2

(2016) which was enacted by the National Council for Education, based on the *Strategy for Education, Science, and Technology* (2014). The document stresses the understanding of the importance of the role of parent/guardian and family in the child's welfare and the creation of a partnership between the family and the school as the key competence areas for teachers. It is expected that teachers and other educational employees "fulfill the various modes of cooperation with parents/guardians and be trained in providing various types of support for the family, all with the aim of ensuring the child's uninterrupted development" (National Framework Standard for Teachers in Elementary and High Schools, 2016).

The good quality cooperation between the parents and the school also enhances the prevention activities of the educational institutions. While the contemporary literature confirms that the positive relationships with parents are a key factor in preventing behavioral problems, the teachers and other professionals in schools often suggest that the parents whose involvement is often most needed are also those who are most difficult to motivate for such involvement. The path of involving these parents is made easier by the implementation of strategies that are based on encouraging positive and cooperative relationships, based on mutual trust and respect (Gimpel Peacock and Collett, 2010), and by including parents in the interventions that aim to prevent and treat the children's behavioral problems (Mahoney and Wiggers, 2007).

Herrenkohl et al. (2012) note that the strong and positive relationships between parents and children, the existence of opportunities for an active involvement of the family in the school life of the child, and the acknowledgments of positive behaviors are all positively correlated with fewer behavioral problems and are thus considered to be protective factors. Kumpfer et al. (2002) point out that, due to their significant influence on the children's developmental path, the parents (families) should be among the key actors in the comprehensive prevention programs and interventions. Engels and Andries (2007), in their review of a large number of research papers, also note that the interventions that include the whole family are more effective than those that are only implemented with the child/youth or with the parents. It is also known that the interventions oriented towards the child alone, without the involvement of parents or family, may have an iatrogenic negative effect on the functioning of the family (Szapocznik, 1997, in Ferić, 2002). Further, Koller-Trbović and Žižak (2012) warn of the parents' poor level of information regarding the procedures and measures that are being implemented towards their children in different areas of social engagement (i.e. schools, specialized institutions), and of the parents' low level of inclusion in the interventions themselves.

This also refers to the parents' participation in the interventions aimed at preventing or ameliorating the children's behavioral problems, which also implies the need for including the parents in the process of identifying the behavioral problems in children. A greater level of involvement of parents in the process of identifying behavioral problems opens up the potential for including parents in socio-pedagogical interventions, the important part of which is acting to strengthen the protective factors in the pupils' familial environment (Kranželić, 2015), as this strengthening of the educational potential of the family is one of the social pedagogue's key areas of activity (Bouillet and Uzelac, 2007).

The experiences of parent participation in the process of assessing the pupils' behavioral problems show that the parents are prone to underestimate their children's problems, which is

ascribed to their possible fear of stigmatization of the child, the perception of the child's problem as their own personal failure, and the attitude that the child would overcome the problems herself, as what they are going through is a passing developmental phase (Brauner and Stephens, 2006). Gimpel Peacock and Collett (2010) note that the parents, the teachers, and the children all have different assessments of behavioral problems, due to the differences in the context that they make the assessment in (family, school, peer groups) and the differences in the behaviors themselves across these contexts.

The research aimed at the comparison of assessments of behavioral problems among children and youths on the part of the parents and teachers indicates that these assessments overlap to a much greater extent than either of them does with the self-assessments on the part of the children/youths (Wahlsten, Ahmad and Knorrning, 2002; Gritti et al., 2014), but also that the parents and teachers direct their attention to the different types of problems (Kumpulainen et al., 1999). Parents more often report on the externalized behavioral problems, while the children more often report on the symptoms and behaviors related to the internalized behavioral problems (van der Meer, Dixon and Rose, 2008, Sourander, Helstelä and Helenius, 1999). The research by Van Roy (2010) established that, compared with the children, the parents tend to be more consistent in the assessment of behavioral problems and in assessing their influence on the children's social functioning in general. Treutler and Epkins (2003) point out that good communication between the parents and children is one of the preconditions for the success of the intervention needs assessment in children, and by the parents. The importance of including both parents in the intervention needs assessment is also increasingly being noted in the literature (Davé, 2008). The results of the research conducted by Salari, Wells, and Sarkadi (2014) show that, in a sample of children with behavioral problems, we find significantly more of parents that use ineffective parenting methods and styles, parents that are prone to mutual conflict, and those that are less pedagogically competent. It is precisely these results that additionally accentuate the need for the parents to become involved in the process of identifying behavioral problems as also an opportunity to include the parents in socio-pedagogical interventions. It has also been demonstrated that, when the information acquired from parents is carefully analyzed and interpreted, the experts are able to appropriately recognize and identify the needs of the child and of the family (Glascoe, 2000, Glascoe and Kevin, 2011).

Thus, the differences in assessments of behavioral problems across the different participants do not speak to who among them is right and who is wrong, but rather act together to contribute to the appropriate planning of interventions aimed at children with behavioral problems. The precondition of the parents' participation in the process of planning socio-pedagogical interventions is certainly the existence of appropriate methods of assessment, i.e. of suitable measurement instruments that would enable the parents to express their views and assessments of their children's intervention needs. Related to that, this paper is directed at reviewing the development of the measurement instrument that aims to include the parents in the process of assessing the elementary school pupils' needs for socio-pedagogical interventions, so that the planning of interventions could take their perspective into account, alongside those of the teachers and other experts, and the child's self-assessment, particularly as the parents' participation is vital for the problem to be recognized and the intervention sought.

## Research aims, tasks, and hypotheses

The aim of the research presented in this paper is to develop a measurement instrument that will enable the use of the parents' assessments of the pupil's behavioral problems in identifying the pupil's need for inclusion in socio-pedagogical intervention in elementary school.

The following research tasks stem from the thus formulated research aims:

- Constructing a measurement instrument for the parental assessment of the pupil's behavioral problem: *Pupils' Needs in the Area of Social-pedagogic Intervention Questionnaire – Parent's Version*;
- Determining the norms for identifying the pupils that have behavioral problems, based on the parents' assessment;
- Testing the norms for identifying the pupils with behavioral problems, as assessed by the parents;
- Testing these norms against the pupils' age and sex;
- Determining the proportion of Croatian elementary school pupils that are suffering behavioral problems, as based on the parents' assessments.

This research project is testing the general hypothesis that the *Pupils' Needs in the Area of Social-pedagogic Intervention Questionnaire – Parent's Version* is an appropriate tool to differentiate between those pupils who have behavioral problems from the other pupils, where their placement into categories depends on their age and sex. It is also assumed that the proportion of pupils with behavioral problems in the total pupil population that is found using this method will correspond to the pupils' self-assessment from the same sample (Bouillet, 2016). Here, particular attention is given to behavioral disorders and behavioral difficulties, as risk behaviors alone should not warrant specialized socio-pedagogical interventions, but rather a reaction on the part of the parents and other persons in the child's usual environments, such as teachers and pedagogues (*Standards of terminology, definition, criteria, and means of tracking the incidence of behavioral problems among children and youths*, Koller-Trbović, Žižak and Jeđud Borić, 2011).

## Research Methods

### Research participants

The research study was conducted on a sample of 2 865 parents of pupils from the third, fifth, and seventh grades, from 43 primary schools in Croatia, all of whom had consented to take part in the research (86.79% of the invited parents took part in the research).

Mothers make up 81.1% of the sample, fathers a further 17.4%, and 1.5% are other family members (guardians, grandmothers, grandparents). Parents of third-graders make up 30.1% of the sample, parents of fifth-graders make up 35.6% of the sample, while the remaining 34.3% are seventh-graders' parents. Among all the respondents, 50.5% are boys' parents, and 49.5% are girls' parents.

At least one classroom of pupils from each grade took part in the survey in each of the schools. These are schools from 13 counties, all of which are employing social pedagogues.

### Measurement instruments

In this study, we used the *Pupils' Needs in the Area of Social-pedagogic Intervention Questionnaire – Parent's Version*, as developed in the *Development of models of socio-pedagogical interventions in elementary schools* project. The first step in developing the questionnaire was the piloting the questionnaire. This was done in seven schools that agreed to take part: Grigor Vitez Elementary School (Zagreb), Ljudevit Modec Elementary School (Križevci), Matija Gubec Elementary School (Zagreb), Matko Laginja Elementary School (Zagreb), Nikola Tesla Elementary School (Zagreb), Prečko Elementary School (Zagreb), and Velika Mlaka Elementary School (Velika Mlaka). Similarly, the pilot study was conducted on a sample of third, fifth, and seventh-graders, and their parents. The response rate was over 90%, and a total of 350 parents took part (82.5% were mothers, and 17.5% were fathers).

In the pilot study, we utilized the extensive version of the Questionnaire, with six scales that the parents used to assess the pupil's attitude to self, to peers, family, homeroom teachers, obligations, property, and general surroundings. Each scale comprised 25 items that were organized as five-point Likert scales (ranging from 1 = "not at all true" to 5 = "completely true"). The questionnaire was broadly conceived due to the need to have a wide-ranging approach in all the areas of socio-pedagogical interventions in the school environment, and was created in the meetings of the project team. The data collected in the pilot study were used to test the measurement characteristics of the questionnaire. First, we tested the variability of the items, and excluded all items on which we found little variation (i.e. at least 5% of respondents' answers in each of the item categories). In the second step, we tested the reliability of each of the scales, by calculating the total respondent score on each scale, and the Pearson correlation coefficient of each item with the scale. Only those items that were statistically significantly ( $p=.000$ ) correlated with the total result on the scale were retained. In the third step, we tested the reliability of the scale, by calculating Cronbach's Alpha coefficients. The results of these analyses for Pupils' Needs in the Area of Social-pedagogic Intervention Questionnaire – Parent's Version are presented in Table 1.

**Table 1. Number of initial and remaining items on the assessment of pupils' needs for socio-pedagogical interventions scales and the pertaining Cronbach's Alpha coefficients for the Pupils' Needs in the Area of Social-pedagogic Intervention Questionnaire – Parent's Version**

| Scale   | Initial item | Items remaining after the first step | Items remaining after the second step | Cronbach's Alpha |
|---|--------------|--------------------------------------|---------------------------------------|------------------|
| Pupil's attitude to selft                             | 25           | 19                                   | 16                                    | .634             |
| Pupil's attitude to family                            | 25           | 11                                   | 17                                    | .723             |
| Pupil's attitude to homeroom teacher                  | 25           | 6                                    |                                       |                  |
| Pupil's attitude to obligations                       | 25           | 15                                   | 13                                    | .710             |
| Pupil's attitude to peers                             | 25           | 8                                    |                                       |                  |
| Pupil's attitude to property and general surroundings | 25           | 17                                   | 17                                    | .562             |
| TOTAL   | 150          | 76                                   | 63                                    | .839             |

As the data in Table 1 demonstrate, many of the items, on several of the scales, failed to pass the variability test, as they performed poorly in discriminating across the pupils regarding the object of measurement. The items that have satisfied these metric characteristics were grouped into four scales (Pupil's attitude to self, Interpersonal relationships, Pupil's attitude to obligations, and Pupil's attitude to property and surroundings). The Interpersonal relationships scale contains the items that used to make up the Pupil's attitude to family, Pupil's attitude to homeroom teacher, and Pupil's attitude to peers scales.

Accordingly, the respondents (parents) in the main survey filled in the *Questionnaire for assessment of socio-interventional needs of pupils – parents' version* which was constructed based on the pilot study and comprised 63 items grouped into four scales.

### **Data collection**

All the research participants provided their written consent for taking part in the survey. The data were collected and entered into the database by the social pedagogues working in each of the surveyed schools. These social pedagogues were trained to administer the questionnaires and enter the data at a professional meeting of social pedagogues which was organized by the Education and Teacher Training Agency, and held in Zagreb, on 23rd February 2016. The appropriate level of information regarding the research aim among the participants was achieved by means of presentations by social pedagogues in parents' meetings. A single presentation was prepared and then given at each of the schools. The research participants' anonymity was assured by subsequent encryption of the questionnaires, based on predetermined codes.

Both the pilot and the main study were implemented by social pedagogues during parents' meeting, informing them about the study and explaining the process of filling in the questionnaire prior to starting. Guiding the parents through the questionnaire also included explaining the particular items. The pilot study was conducted at the end of the first semester of the 2015/2016 academic year, and the main study was conducted during the second semester of the same academic year.

### **Data analysis**

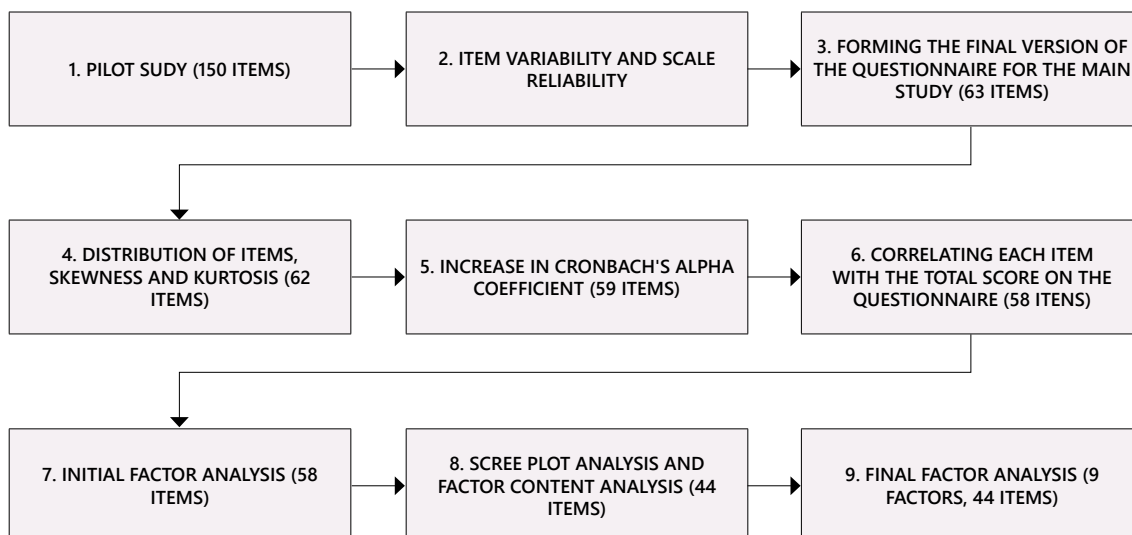
In order to achieve a high degree of content validity of the measurement instruments, we included a large number of experts (social pedagogues) in their design. We have also conducted a factor analysis of the contents of the questionnaire, using the principal components method, varimax rotation, with the aim of determining level of construct validity. We tested criterion validity by comparing the results of the parents' assessments and the pupils' assessments (Bouillet, 2016). This was a comparison of results of the two versions of the questionnaire (the pupils' versions and the parents' version), both of which were applied as part of the same project. In order to further determine validity of the measurement instrument, we tested the correlation of individual items with the total pupil scores on the questionnaire.

The reliability of the questionnaire was tested using Cronbach's Alpha coefficient, and we used two methods to test for sensitivity:

- Testing the statistical significance of the differences between pupils who had and who did not have behavioral problems (F-ratios on the extracted factors)
- Comparing the results on the *Pupils' Needs in the Area of Social-pedagogic Intervention Questionnaire – Parent's Version* (Bouillet, 2016).

The norms were defined based on percentiles, i.e. results on the factors extracted using factor analysis, based on the pupils' sex and age. The norms were further tested by calculating the level of statistical significance of the F-ratios of the determined pupil groups, as based on their behavioral problems, and the scores on the pupils' self-assessment (in Bouillet, 2016). The steps in developing the questionnaire are presented in Schematic 1.

### Scheme 1. Steps in standardizing the measurement instrument



### Research Results

The aim of each measurement instrument is to describe the object of measurement with as few items as possible, meaning that the process of standardizing the questionnaire was aimed at further reduction in the number of items without the loss of the questionnaire measurement characteristics

In the first step, we tested the distribution of the items, based on the measures of skewness and kurtosis. We used the criterion of skewness and kurtosis measures that fall between -2 and 2, as is commonly considered in the literature to be an acceptable measure of distribution normality (George and Mallery, 2010). Based on this criterion, we excluded the item *[My child] Occasionally takes someone else's belongings without their knowing* (skewness = -2.199, kurtosis = 4.639). After that step, the Cronbach's Alpha coefficient, with 62 items, was .852.

In the second step, we excluded some items based on the criterion of increase of Cronbach's Alpha coefficient for the entire questionnaire. It became apparent that the coefficient increases to .858 after the exclusion of items *My child likes to be the center of attention* and *My child often thinks about material things*. The coefficient further increases to .859 if the item *My child is quiet and withdrawn in the company of peers*. These items were thus excluded from further analysis, leaving 59 items in total.

The following step consisted of calculating total scores on all items of the questionnaire, in order to test the statistical significance of individual items with the total score, by means of the Pearson correlation coefficient. In this step, we removed one item which had the statistical significance at  $p > .050$ , *My child finds it difficult to give up when he/she wants to have something* (correlation coefficient was  $-.027$ ,  $p = .152$ ). After this step, Cronbach's Alpha coefficient increased to .870, with a total of 58 items. It was determined that the pupils' total result, based on parents' assessment, was statistically significantly correlated with the total scores of the pupils' self-assessment, as discussed in Bouillet (2016). Pearson's correlation coefficient was .350, with  $p < .0001$ .

The next step was the factor analysis. Based on the Guttman-Kaiser criterion, we extracted 13 factors, which explained 52.85% of the joint variance. Following the analysis of the scree plot and content analysis of the extracted factors, which we used to test their interpretability, we removed further items from the questionnaire, which did not appear well-positioned on their respective factors. These were the items that had similar multiple factor saturation, which were not substantively unequivocal within the factors, and whose maximum factor saturation was under .40 (Tabachnik and Fidell, 2001).

In this step, we removed a further 14 items, and the Cronbach's alpha coefficient for the Questionnaire was negligibly reduced (to .869, with a total of 44 items). The following items were thus removed:

*My child...*

- *Likes to be alone when feeling sad;*
- *Has no secrets from me;*
- *Is careful towards school property;*
- *Accepts his/her own mistakes and tries to make up for them;*
- *Learns from his/her mistakes;*
- *Is satisfied with the ways in which we spend our free time together;*
- *Thinks of various ways to avoid obligations;*
- *Has many interests that are not school-related;*
- *Has too many obligations;*
- *Is persistent in getting the things she/he wants;*



- *Knows where the money is kept in our house;*
- *Is satisfied with his/her clothes and shoes;*
- *Has a mild and permissive upbringing in the family;*
- *Has a mild and permissive homeroom teacher.*

After these items were removed, we repeated the factor analysis with 44 items, resulting in 9 factors which explain 52.85% of their joint variance, exactly the same as the initial factor analysis with much more items). We found that the necessary preconditions of factorizations are satisfied (KMO = .921, Bartlett's specificity test = 46310.059, df = 990, p = .000). The values of characteristic roots, the proportion of explained variance, reliability and structure of each of the factors are shown in Table 2.

**Table 2. The values of characteristic roots, proportion of explained variance, reliability and factor structure for the Pupils' Needs in the Area of Social-pedagogic Intervention Questionnaire – Parent's Version (all listed items refer to the child/pupil)**

| <b>ASSESSMENT OF ATTITUDE TOWARDS EDUCATION FACTOR (1)</b>           | <b>Coefficient</b> |
|--|--------------------|
| Achieves successes in school that well reflect her/his effort        | .796               |
| Achieves successes in school that match her/his abilities            | .752               |
| Is happy with his/her success in school                              | .751               |
| Regularly studies and does homework at home                          | .652               |
| Recognizes the purpose of studying                                   | .624               |
| Takes active part in classes   | .607               |
| Believes that he/she can succeed by studying regularly               | .414               |
| <b>Characteristic root</b>   | <b>8.779</b>       |
| Proportion of explained variance                                     | 19.510             |
| <b>Cronbach's Alpha</b>  | <b>.846</b>        |
| <b>ASSESSMENT OF ATTITUDE TOWARDS OBLIGATIONS FACTOR (2)</b>         | <b>Coefficient</b> |
| Takes care of his/her own clothes and shoes                          | .774               |
| Keeps a tidy and clean workspace at home                             | .771               |
| Likes being tidy   | .745               |
| Is careful with her/his things                                       | .655               |
| Has no difficulty following the rules in school and in the classroom | .555               |
| Takes care of his/her health   | .536               |
| Always knows which books are in her/his school bag                   | .474               |
| Has no difficulty following the rules in the family                  | .465               |
| <b>Characteristic root</b>   | <b>3.202</b>       |
| Proportion of explained variance                                     | 7.116              |
| <b>Cronbach's Alpha</b>  | <b>.827</b>        |
| <b>ASSESSMENT OF ATTITUDE TOWARDS PEERS FACTOR (3)</b>               | <b>Coefficient</b> |
| Finds support in her/his friends                                     | .718               |
| Is happy with how many friends (s)he has                             | .681               |
| Believes that most his/her friends think well of him/her             | .665               |
| Spends time with school friends outside the school                   | .654               |
| Spends time with children that follow the school rules               | .521               |
| Is happy with him/herself  | .430               |
| <b>Characteristic root</b>   | <b>2.228</b>       |
| Proportion of explained variance                                     | 4.951              |

|   |                    |
|---|--------------------|
| Cronbach's Alpha  | .739               |
| <b>ASSESSMENT OF COMMUNICATIVENESS FACTOR (4)</b>   | <b>Coefficient</b> |
| Has no difficulty speaking before a larger group of people                                      | .692               |
| Is self-confident   | .668               |
| Expresses her/his opinion even when it differs from the opinion of others                       | .647               |
| Is able to state his/her opinion even when it differs from that of the homeroom teacher         | .630               |
| <b>Characteristic root</b>  | <b>1.903</b>       |
| Proportion of explained variance  | 4.229              |
| Cronbach's Alpha  | .695               |
| <b>ASSESSMENT OF ATTITUDE TOWARDS MATERIAL GAINS FACTOR (5)</b>                                 | <b>Coefficient</b> |
| Studies only to achieve good grades   | .416               |
| Rarely buys unnecessary things  | .732               |
| Likes to immediately spend money when he/she has some   | -.710              |
| Saves money   | .543               |
| Likes buying different things   | -.708              |
| <b>Characteristic root</b>  | <b>1.807</b>       |
| Proportion of explained variance  | 4.015              |
| Cronbach's Alpha  | .782               |
| <b>ASSESSMENT OF RESPONSIBLE BEHAVIOR FACTOR (6)</b>  | <b>Coefficient</b> |
| Is prepared to repair the damage if he/she damages another person's property                    | .626               |
| Looks for the owner when he/she finds an item he/she does not recognize as belonging to someone | .624               |
| Likes to help others (the elderly, or peers)  | .495               |
| Has more things than his/her peers  | .495               |
| Spends her/his free time doing activities he/she enjoys   | .425               |
| <b>Characteristic root</b>  | <b>1.568</b>       |
| Proportion of explained variance  | 3.484              |
| Cronbach's Alpha  | .553               |
| <b>ASSESSMENT OF EMOTION CONTROL FACTOR (7)</b>   | <b>Coefficient</b> |
| Gets angry easily   | .778               |
| Is argumentative  | .768               |
| Is unable to remain calm when angry   | .517               |
| <b>Characteristic root</b>  | <b>1.351</b>       |
| Proportion of explained variance  | 3.002              |
| Cronbach's Alpha  | .599               |
| <b>ASSESSMENT OF PARENT'S ATTITUDE TOWARDS THE CHILD FACTOR (8)</b>                             | <b>Coefficient</b> |
| Knows I understand and accept him/her even when he/she is doing something unacceptable          | .723               |
| Makes is clear what he/she expects of me  | .701               |
| Takes part in important family decisions  | .609               |
| <b>Characteristic root</b>  | <b>1.259</b>       |
| Proportion of explained variance  | 2.797              |
| Cronbach's Alpha  | .555               |
| <b>ASSESEMENT OF ATTITUDE TOWARDS THE HOMEROOM TEACHER FACTOR P (9)</b>                         | <b>Coefficient</b> |
| Can count on the homeroom teacher's help  | .676               |
| Seeks the homeroom teacher's help when he/she is not able to solve a problem him/herself        | .665               |
| Finds it easy to ask the homeroom teacher any questions during class                            | .489               |
| <b>Characteristic root</b>  | <b>1.155</b>       |
| Proportion of explained variance  | 2.567              |
| Cronbach's Alpha  | .655               |

As can be seen in Table 2, the initial broad groups of assessments of pupils' needs for socio-pedagogical intervention have become more specific in the process of factor analysis. The attitude to self scale was divided into two factors (emotion control and communicativeness), and the interpersonal relationships scale into three factors (attitude to peers, parent's attitude towards the child, and attitude towards the homeroom teacher). The scale of attitude to obligations was split into two factors (attitude towards education, and responsible behavior), as was the attitude towards property and general surroundings (attitude towards obligations, attitude towards material gains). As the reliability of the extracted factors varies from low (.553) to high (.845), an integrated analysis of the factors needed to be conducted, bearing in mind the total score on the Questionnaire. Table 3 shows the descriptive statistics for the Questionnaire factors.

**Table 3. Descriptive statistics for the Pupils' Needs in the Area of Social-pedagogic Intervention Questionnaire – Parent's Version**

| Factor                                    | Range | Minimum | Maximum | Mean    | Standard deviation | Skewness | Kurtosis |
|---|-------|---------|---------|---------|--------------------|----------|----------|
| Attitude towards education (1)            | 26    | 9       | 35      | 28.3240 | 5.04981            | -.801    | .284     |
| Attitude towards responsibilities (2)     | 32    | 8       | 40      | 32.7629 | 5.10888            | -.949    | 1.111    |
| Attitude towards peers (3)                | 24    | 6       | 30      | 23.6035 | 3.70729            | -.911    | 1.514    |
| Communicativeness (4)                     | 16    | 4       | 20      | 15.0316 | 3.02264            | -.601    | .180     |
| Attitude towards material gain (5)        | 16    | 8       | 24      | 15.9641 | 2.25961            | -.004    | .145     |
| Responsible behavior (6)                  | 16    | 9       | 25      | 20.8573 | 2.90949            | -.793    | .528     |
| Emotion control (7)                       | 12    | 3       | 15      | 8.1459  | 2.73598            | .287     | -.558    |
| Parent's attitude towards the child (8)   | 12    | 3       | 15      | 11.4814 | 2.32958            | -.755    | .583     |
| Attitude towards the homeroom teacher (9) | 12    | 3       | 15      | 11.6569 | 2.13896            | -.512    | .053     |

Further analysis (ANOVA) has demonstrated that there are statistically significant differences on the individual factors, according to the type of pupil's behavioral problem (Table 4). The pupils whose parents took part in this study also assessed their own behaviors in the *Pupils' Needs in the Area of Social-pedagogic Intervention Questionnaire – Parent's Version*. This questionnaire was standardized using the same procedure as the parents' version, as described in detail in Bouillet (2016). There, nine factors were extracted, as listed in the rows on Table 4. Based on the scores on these factors, the pupils were placed into one of three categories: pupils with behavioral disorders, pupils with behavioral difficulties, other pupils. We have thus based our analysis on the values and statistical significance of the F-ratios of the parents' assessments (in the columns of Table 4) and the pupils' self-assessments across the three behavioral categories.

**Table 4. Statistical significance and F-ratio values for the factors of the Pupils' Needs in the Area of Social-pedagogic Intervention Questionnaire – Parent's Version and the Pupils' Needs in the Area of Social-pedagogic Intervention Questionnaire – Pupils' Version (Bouillet, 2016)**

| Factor                         | Attitude towards education (1) | Attitude towards obligations (2) | Attitude towards peers (3) | Communicativeness (4) | Attitude towards material gain (5) | Responsible behavior (6) | Emotion control (7) | Parent's attitude towards the child (8) | Attitude towards the homeroom teacher (9) |
|--------------------------------|--------------------------------|----------------------------------|----------------------------|-----------------------|------------------------------------|--------------------------|---------------------|---|---|
| Attitude towards peers (1)     | 21.532**                       | 17.494**                         | 155.547**                  | 14.265**              | 3.532*                             | 10.224**                 | 14.075**            | 3.457*                                  | 6.840**                                   |
| Attitude towards education (2) | 242.585**                      | 73.131**                         | 24.525**                   | 21.505**              | 9.934**                            | 8.131**                  | 12.320**            | 16.718**                                | 21.539**                                  |

|   |          |          |          |          |         |          |          |          |          |
|---|----------|----------|----------|----------|---------|----------|----------|----------|----------|
| Attitude towards obligations (3)          | 29.175** | 64.985** | 7.346**  | 2.444    | 5.431** | 8.507**  | 9.460**  | 12.340** | 6.585**  |
| Parent's attitude towards the child (4)   | 26.298** | 32.933** | 18.975** | 1.928    | 4.378*  | 10.613** | 24.722** | 11.392** | 4.562*   |
| Level of parental support (5)             | 25.606** | 6.957**  | 6.362**  | 3.177*   | 1.029   | 2.560    | 8.842**  | 9.013**  | 3.768*   |
| Openness in communication (6)             | 45.408** | 2.632    | 33.612** | 89.974** | 5.736** | 9.297**  | 2.554*   | 4.597*   | 71.616** |
| Attitude towards the homeroom teacher (7) | 35.277** | 24.636** | 18.391** | 12.081** | 4.330*  | 7.548**  | 4.695**  | 13.188** | 27.313** |
| Satisfaction with self (8)                | 53.655** | 32.986** | 41.157** | 10.672** | 3.063*  | 14.814** | 12.579** | 6.640**  | 8.951**  |
| Permissiveness in upbringing (9)          | 5.547**  | 6.862**  | 1.805    | .105     | 1.200   | 12.194** | 1.671    | 1.546    | .176     |

\*\* p ≤ .005 \* p ≤ .050, other = p • .050

The results in Table 4 indicate that the differences across groups of pupils with regard to their behavior (as based on their self-assessment) differently reflect on the factors of parents' assessments of the pupils' needs for socio-pedagogical intervention. The assessment of attitude towards education factor statistically significantly differentiates among the pupil groups on all self-assessment factors, while the groups formed on the basis of self-assessment of parenting styles statistically significantly affect the parents' assessment of the pupils' attitudes towards education and obligations. The parents' assessments on the communicativeness scale do not discern across the behavioral groups of pupils with regard to their attitude towards obligations and the parent's attitude towards the child. Further, the pupils' self-assessed parental support is not statistically significantly correlated with the parents' assessment of the pupil's attitude towards material gain.

Most of the factors, however, statistically significantly discern the groups based on pupils' self-assessment, which is a further indicator of the reliability of the formed factors. The results on these said factors were thus used in further analyses to form pupil groups based on the level of behavioral problems. We present the percentiles for each of the factors, calculated from the entire sample and the subsamples formed on the basis of the pupils' sex and grade (Table 5).

**Table 5. Percentiles for the scores on the Pupils' Needs in the Area of Social-pedagogic Intervention Questionnaire –Parent's Version factors, by type of behavioral problem experienced by the pupil.**

| Attitude towards education (1) |       |      |      |             |             |               |
|--------------------------------|-------|------|------|-------------|-------------|---------------|
| Percentiles                    | Total | M    | F    | Third grade | Fifth grade | Seventh grade |
| 5                              | 19.0  | 18.0 | 20.0 | 22.0        | 19.0        | 16.6          |
| 10                             | 21.0  | 20.0 | 22.0 | 24.0        | 21.0        | 19.0          |
| 25                             | 25.0  | 24.0 | 27.0 | 27.0        | 25.0        | 23.0          |
| 50                             | 29.0  | 28.0 | 30.0 | 30.0        | 29.0        | 28.0          |
| 75                             | 32.0  | 31.0 | 33.0 | 33.0        | 32.0        | 32.0          |
| 90                             | 34.0  | 34.0 | 35.0 | 35.0        | 34.0        | 34.0          |
| 95                             | 35.0  | 35.0 | 35.0 | 35.0        | 35.0        | 35.0          |

| Attitude towards obligations (2)   |       |      |      |             |             |               |
|------------------------------------|-------|------|------|-------------|-------------|---------------|
| Percentiles                        | Total | M    | F    | Third grade | Fifth grade | Seventh grade |
| 5                                  | 23.0  | 22.0 | 24.0 | 22.9        | 23.0        | 22.6          |
| 10                                 | 26.0  | 24.0 | 27.0 | 26.0        | 26.0        | 26.0          |
| 25                                 | 30.0  | 29.0 | 31.0 | 30.0        | 30.0        | 30.0          |
| 50                                 | 33.0  | 33.0 | 34.0 | 33.0        | 34.0        | 34.0          |
| 75                                 | 36.0  | 36.0 | 37.0 | 36.0        | 36.0        | 37.0          |
| 90                                 | 39.0  | 38.0 | 35.0 | 39.0        | 39.0        | 39.0          |
| 95                                 | 40.0  | 39.0 | 35.0 | 40.0        | 40.0        | 40.0          |
| Attitude towards peers (3)         |       |      |      |             |             |               |
| Percentiles                        | Total | M    | F    | Third grade | Fifth grade | Seventh grade |
| 5                                  | 17.0  | 17.0 | 17.0 | 18.0        | 16.0        | 16.6          |
| 10                                 | 19.0  | 19.0 | 19.0 | 20.0        | 18.0        | 18.0          |
| 25                                 | 22.0  | 22.0 | 22.0 | 22.0        | 22.0        | 21.0          |
| 50                                 | 24.0  | 24.0 | 24.0 | 24.0        | 24.0        | 24.0          |
| 75                                 | 26.0  | 26.0 | 26.0 | 26.0        | 26.0        | 26.0          |
| 90                                 | 28.0  | 28.0 | 28.0 | 28.0        | 28.0        | 28.0          |
| 95                                 | 29.0  | 29.0 | 29.0 | 29.0        | 29.0        | 28.0          |
| Communicativeness (4)              |       |      |      |             |             |               |
| Percentiles                        | Total | M    | F    | Third grade | Fifth grade | Seventh grade |
| 5                                  | 10.0  | 9.0  | 10.0 | 10.0        | 9.0         | 10.0          |
| 10                                 | 11.0  | 11.0 | 11.0 | 11.0        | 11.0        | 11.0          |
| 25                                 | 13.0  | 13.0 | 13.0 | 13.0        | 13.0        | 13.0          |
| 50                                 | 15.0  | 15.0 | 15.0 | 16.0        | 15.0        | 15.0          |
| 75                                 | 17.0  | 17.0 | 17.0 | 17.0        | 16.0        | 17.0          |
| 90                                 | 19.0  | 19.0 | 19.0 | 19.0        | 19.0        | 19.0          |
| 95                                 | 19.7  | 19.0 | 20.0 | 19.0        | 20.0        | 20.0          |
| Attitude towards material gain (5) |       |      |      |             |             |               |
| Percentiles                        | Total | M    | F    | Third grade | Fifth grade | Seventh grade |
| 5                                  | 12.0  | 12.0 | 12.9 | 12.0        | 12.0        | 12.0          |
| 10                                 | 13.0  | 13.0 | 13.0 | 13.0        | 13.0        | 13.0          |
| 25                                 | 14.0  | 14.0 | 15.0 | 15.0        | 14.0        | 14.0          |
| 50                                 | 16.0  | 16.0 | 16.0 | 16.0        | 16.0        | 16.0          |
| 75                                 | 17.0  | 17.0 | 18.0 | 17.0        | 17.0        | 17.0          |
| 90                                 | 19.0  | 19.0 | 19.0 | 19.0        | 19.0        | 19.0          |
| 95                                 | 20.0  | 19.0 | 20.0 | 20.0        | 20.0        | 20.0          |
| Responsible behavior (6)           |       |      |      |             |             |               |
| Percentiles                        | Total | M    | F    | Third grade | Fifth grade | Seventh grade |
| 5                                  | 16.0  | 15.0 | 16.0 | 15.0        | 16.0        | 15.0          |
| 10                                 | 17.0  | 17.0 | 17.0 | 17.0        | 17.0        | 17.0          |
| 25                                 | 19.0  | 19.0 | 20.0 | 19.0        | 19.0        | 19.0          |
| 50                                 | 21.0  | 21.0 | 21.0 | 21.0        | 21.0        | 21.0          |
| 75                                 | 23.0  | 23.0 | 23.0 | 23.0        | 23.0        | 23.0          |
| 90                                 | 24.0  | 24.0 | 24.2 | 24.2        | 24.0        | 24.0          |
| 95                                 | 25.0  | 25.0 | 25   | 25.0        | 25.0        | 25.0          |
| Emotion control (7)                |       |      |      |             |             |               |
| Percentiles                        | Total | M    | F    | Third grade | Fifth grade | Seventh grade |
| 5                                  | 4.0   | 4.0  | 4.0  | 4.0         | 4.0         | 4.0           |
| 10                                 | 5.0   | 5.0  | 5.0  | 5.0         | 5.0         | 5.0           |

| 25  | 6.0   | 6.0  | 6.0  | 6.0         | 6.0         | 6.0           |
|---|-------|------|------|-------------|-------------|---------------|
| 50  | 8.0   | 8.0  | 8.0  | 8.0         | 8.0         | 8.0           |
| 75  | 10.0  | 10.0 | 10.0 | 10.0        | 10.0        | 10.0          |
| 90  | 12.0  | 12.0 | 12.0 | 12.0        | 12.0        | 12.0          |
| 95  | 13.0  | 13.0 | 13.0 | 13.0        | 13.0        | 13.0          |
| Parent's attitude towards the child (8)   |       |      |      |             |             |               |
| Percentiles                               | Total | M    | F    | Third grade | Fifth grade | Seventh grade |
| 5   | 7.0   | 7.0  | 7.0  | 7.0         | 7.0         | 7.0           |
| 10  | 8.0   | 8.0  | 9.0  | 8.0         | 8.0         | 8.0           |
| 25  | 10.0  | 10.0 | 10.0 | 10.0        | 10.0        | 10.0          |
| 50  | 12.0  | 12.0 | 12.0 | 12.0        | 12.0        | 12.0          |
| 75  | 13.0  | 13.0 | 13.0 | 13.0        | 13.0        | 13.0          |
| 90  | 14.0  | 14.0 | 12.0 | 14.0        | 14.0        | 14.0          |
| 95  | 15.0  | 15.0 | 15.0 | 15.0        | 15.0        | 15.0          |
| Attitude towards the homeroom teacher (9) |       |      |      |             |             |               |
| Percentiles                               | Total | M    | F    | Third grade | Fifth grade | Seventh grade |
| 5   | 8.0   | 8.0  | 8.0  | 8.0         | 8.0         | 8.0           |
| 10  | 9.0   | 9.0  | 9.0  | 9.0         | 9.0         | 9.0           |
| 25  | 10.0  | 10.0 | 10.0 | 11.0        | 10.0        | 10.0          |
| 50  | 12.0  | 12.0 | 12.0 | 12.0        | 12.0        | 12.0          |
| 75  | 13.0  | 13.0 | 13.0 | 13.0        | 13.0        | 13.0          |
| 90  | 14.0  | 14.0 | 14.4 | 14.0        | 14.0        | 14.0          |
| 95  | 15.0  | 15.0 | 15.0 | 15.0        | 15.0        | 15.0          |

As shown in Table 5, parents' assessments of pupils' needs for socio-pedagogical intervention with regard to their sex and age differ in four of the nine factors, i.e. aspects of behavior. These four factors are attitude towards education, attitude towards obligations, openness in communication, and responsible behavior. Sex additionally contributes to the differences in the assessment of the parent's attitude towards the child, and age contributes to the differences in the assessment of the child's attitude towards his/her peers. In these cases, girls tend to achieve higher scores, indicating a lesser need for socio-pedagogical interventions than is present among boys. When it comes to age, the differences are not unequivocal. The pupils' attitude towards education tends to deteriorate with age, and the same is true for the attitude towards obligations (particularly in the seventh grade). The quality of peer relationships drops from the third to the fifth grade, only to increase again in the seventh grade. Pupils in the third and seventh grades score equally on the assessment of openness in communication and responsible behavior, while the fifth-graders are less likely to be open in communication and engage in responsible behavior. Given that the F-ratios indicated that the pupil's grade qualitatively discerns among the pupils according to age ( $F\text{-ratio}=20940.125, p=.000$ ), the pupil groups were formed based on results on the factors and split by grade that the pupil is in. On this criterion, the pupils were placed in three groups: pupils with behavioral disorders (first percentile), pupils with behavioral difficulties (second percentile), and other pupils (third and all the other percentiles). The results achieved by analyzing the thus formed groups are shown in Table 6.

**Table 6. Distribution of respondents based on the manifested behavioral problems (in %)**

| Factor                                    | Pupils with behavioral disorders | Pupils with behavioral difficulties | Pupils with behavioral disorders and difficulties |
|---|----------------------------------|-------------------------------------|---|
| Attitude towards education (1)            | 6.1                              | 5.4                                 | 11.5  |
| Attitude towards obligations (2)          | 5.4                              | 6.1                                 | 11.5  |
| Attitude towards peers (3)                | 6.4                              | 4.8                                 | 11.2  |
| Openness in communication (4)             | 7.0                              | 5.6                                 | 12.6  |
| Attitude towards material gain (5)        | 6.0                              | 7.1                                 | 13.1  |
| Responsible behavior (6)                  | 6.6                              | 6.8                                 | 13.4  |
| Emotion control (7)                       | 7.6                              | 10.3                                | 17.9  |
| Parent's attitude towards the child (8)   | 6.1                              | 4.7                                 | 10.8  |
| Attitude towards the homeroom teacher (9) | 8.1                              | 7.6                                 | 15.7  |
| <b>TOTAL</b>                              | <b>6.6</b>                       | <b>6.5</b>                          | <b>13.1</b>                                       |

The results in Table 6 lead us to conclude that the behavioral difficulties and disorders, as assessed by the parents, are manifested by 13.1% of all the pupils in the sample, which is in line with the pupils' self-assessments (12.88%, in Bouillet, 2016). Accordingly, when planning to include pupils in socio-pedagogical interventions and planning of the intervention contents, one may be guided by the norms presented in Table 7. There, a lower score indicates a higher extent of pupil's behavioral difficulties

**Table 7. Criteria for placing pupils into different groups based on the extent of their behavioral problems, and for planning an intervention, as expressed by the scores in the Pupils' Needs in the Area of Social-pedagogic Intervention Questionnaire – Parent's Version**

| Factor                                    | Third grade    |                   | Fifth grade    |                   | Seventh grade  |                   |
|---|----------------|-------------------|----------------|-------------------|----------------|-------------------|
|   | Pupils with BD | Pupils with BDIFF | Pupils with BD | Pupils with BDIFF | Pupils with BD | Pupils with BDIFF |
| Attitude towards education (1)            | 0-22           | 21-24             | 1-19           | 20-21             | 1-17           | 18-19             |
| Attitude towards obligations (2)          | 0-22           | 23-26             | 0-23           | 24-26             | 0-23           | 24-26             |
| Attitude towards peers (3)                | 0-18           | 19-20             | 0-16           | 17-18             | 0-17           | 18                |
| Communicativeness (4)                     | 0-10           | 11                | 1-9            | 10-11             | 0-10           | 11                |
| Attitude towards material gain (5)        | 0-12           | 13                | 0-12           | 13                | 0-12           | 13                |
| Responsible behavior (6)                  | 0-15           | 16-17             | 0-16           | 17                | 0-15           | 16-17             |
| Emotion control (7)                       | 0-4            | 5                 | 0-4            | 5                 | 0-4            | 5                 |
| Parent's attitude towards the child (8)   | 0-7            | 8                 | 0-7            | 8                 | 0-7            | 8                 |
| Attitude towards the homeroom teacher (9) | 0-8            | 9                 | 0-8            | 9                 | 0-8            | 9                 |
| <b>TOTAL SCORE (od 220)</b>               | <b>118</b>     | <b>133</b>        | <b>114</b>     | <b>128</b>        | <b>113</b>     | <b>126</b>        |
| <b>Effect of sex</b>                      | <b>m + 2</b>   | <b>f + 11</b>     | <b>m -</b>     | <b>f + 10</b>     | <b>m -</b>     | <b>f + 6</b>      |

BD = behavioral disorder; BDIFF = behavioral difficulties

Given that the score on the Questionnaire also depends on the pupil's sex (see Table 5), the norms in Table 7 thus need to be interpreted on that criterion as well. Sex is the least relevant among the seventh-graders, where the assessment of girls should be adjusted by adding 6 points to the norm (three of these account for the attitude towards education, while the attitude towards obligations, attitude towards peers, and responsible behavior contribute one point). When assessing the seventh and fifth grade pupils the total number of points remains the same (one point is added to the assessment of the attitude towards education and attitude towards peer, and two points are subtracted for the assessment of the attitude towards obligations). Among fifth grade girls the

total sum of points increases by 10, accounted for by one-point increases in the attitude towards education, attitude towards responsibilities, communicativeness, attitude towards peers, and the parent's attitude towards the child, and a five-point increase on the assessment of responsible behavior. Sex is most relevant on the behavioral assessments among third-graders, with male pupils scoring two points less on the assessment of attitude towards education, and four points less on the attitude towards responsibilities. On the other hand, they score a point more on the scales of attitude towards peers, attitudes towards material gain, and responsible behavior scale, equating the total difference to two points. The female third-graders score three extra points in the assessment of the attitude towards education, and an extra point in the assessment of attitude towards obligations, parent's attitude towards the child, and attitude towards the homeroom teacher. They score six more points on the assessment of responsible behavior, while they score a point less on the assessment of the relationship towards peers.

The described differences point to the conclusion that the above presented norms ought to be additionally tested and determined on a sample of pupils with behavioral problems, which will be realized in the next phase of the project, when the schools will be implementing and evaluating the socio-pedagogical interventions based on the *Questionnaire for assessment of socio-interventional needs of pupils*, both the parents' and the pupils' versions.

## Conclusion

This article has presented the results of a portion of the *Development of models of socio-pedagogical interventions in elementary schools* project, funded by the Education and Teacher Training Agency of the Republic of Croatia and in the process of implementation since September 2015. More specifically, the article concerns the part of the project that aimed to develop a measurement instrument for timely identification of behavioral problems among elementary school pupils, based on parents' assessments.

In the context of socio-pedagogical activity in elementary schools, the measurement instrument developed above can be a good basis and framework for planning socio-pedagogical work with the pupils who are experiencing behavioral problems and their parents. The parents' scores on the Questionnaire can be compared to the children's, allowing for the identification of areas of congruence and incongruence between the two sets of responses, and making it possible to use the thus acquired information to plan the content of the socio-pedagogical intervention.

We found that it was the case that the *Pupils' Needs in the Area of Social-pedagogic Intervention Questionnaire – Parent's Version* appropriately discerns the pupils with behavioral problems from others, with the added caveat that the norms for categorization of pupils do depend on age and sex. We have also confirmed that the proportion of pupils with behavioral problems in the whole population of elementary school pupils, as determined by parents' assessments, matches that determined by the self-assessments of the corresponding sample of pupils. This further suggests that the measurement instrument developed in this project is valid, objective, and reliable. The norms for categorization of pupils, however, do require further testing and development, as the current findings are based on a general population (rather than that of pupils with behavioral



problems), and on the samples of third-, fifth-, and seventh-graders (rather than the pupils in all elementary school grades).

The next stage of the project is thus dedicated to further improvement of the questionnaires themselves, and to the development of the models of socio-pedagogical interventions that will be in line with the pupils' needs, and based on the assessments by parents and children themselves. The questionnaires will also be usable as tools for tracking the effect of interventions at their different stages.

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