

Giftedness as a Possible Risk of Bullying

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Abstract:

Introduction: The paper deals with a possible level of risk in cerebrally gifted pupils in relation to bullying at lower secondary schools and grammar schools. In terms of personality characteristics, gifted pupils form a very diverse group, but some research suggests that they might be a risky group concerning school bullying. In the Czech Republic, the most of cerebrally gifted pupils attend ordinary primary schools or grammar schools and they are in daily contact with other pupils. Due to ambiguous research results, there is a question if it is really possible to think of certain risks in the case of cerebrally gifted pupils in relation to their school environment. Quantitative research tried to answer these questions.

Methods: The research was focused on the perception of selected areas in the class social environment by the diagnosed cerebrally gifted pupils, the undiagnosed gifted ones and the ordinary pupil population. A quantitative research strategy for bullying incidence mapping in primary and grammar schools were determined. As a research tool, a questionnaire was chosen. Gathered data from the initial questionnaire were evaluated by the following methods: dispersion analysis (ANOVA) for data spread by Gauss curve, Kruskal-Wallis test for data with non-Gauss distribution, arithmetic mean, Pearson Chi-Square Test, correlation analysis and contingency tables.

Results: There are differences among the class climate in ordinary classes and the classes with diagnosed cerebrally gifted pupils and undiagnosed pupils. The comparison was at the level of schools, it means among primary schools and grammar schools. It was found out that the cerebrally gifted respondents repeatedly met some form of bullying.

Discussion: On the basis of the findings, the authors assumed that cerebrally gifted pupils (GP) represent a risky group in social interaction with their peers and are more prone to different symptoms of bullying. This has not been statistically confirmed. The overall score was similar in other groups.

Limitation: The views of teachers and the views of some psychologists suggest that within the GP group, there is a special group of GP that is not identifiable by traditional questionnaires. For further research, it is worthwhile to consider opting for such research methods that could reveal those pupils.

Conclusions: Based on these results, it is possible to support those authors who consider GP as a specific group with their own problems, different values and perceptions, but similar to their peers.

Key words: gifted pupils, bullying, social climate, risk.

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Introduction

It is not easy to define giftedness due to a big amount of definitions and models that overlap each other. Giftedness can be seen, in the narrow sense, as an achievement of given IQ value when giftedness is identified with intelligence or cerebral characteristics. In the broader sense, it is perceived as a particular kind of talent of any individual who does not have just intellectual abilities but also personal characteristics. There are more than 113 definitions of talent. Such disunity proceeds from the conviction that the gifted ones create a very heterogeneous group and this multidimensional variability makes determination of complex theory unable (Passow, 1993; Stapf, 2010; Hříbková, 2005). In Czech conditions, the notion extraordinary talent (giftedness) enters this issue and it is stipulated by the § 17 law No. 561/2004 Sb., reg. No. 72/2005 Sb. and reg. No. 73/2005 Sb. (MŠMT, Zákon č. 561/2004 Sb. o předškolním, základním, středním, vyšším odborném a jiném vzdělávání (školský zákon), 2005; MŠMT, Vyhláška č. 72/2005 Sb., o poskytování poradenských služeb ve školách a školských poradenských zařízeních, 2005; MŠMT, Vyhláška č. 73/2005 Sb., o vzdělávání dětí, žáků a studentů se speciálními vzdělávacími potřebami a dětí, žáků a studentů mimořádně nadaných, 2005). In our research, the definition of gifted pupils stems from the conception of rational talent stipulated by the school law § 17 No. 561/2004 Sb., reg. No. 72/2005 Sb. and reg. No. 73/2005 Sb. (MŠMT, Zákon č. 561/2004 Sb. o předškolním, základním, středním, vyšším odborném a jiném vzdělávání (školský zákon), 2005); MŠMT, Vyhláška č. 72/2005 Sb., o poskytování poradenských služeb ve školách a školských poradenských zařízeních, 2005; MŠMT, Vyhláška č. 73/2005 Sb., o vzdělávání dětí, žáků a studentů se speciálními vzdělávacími potřebami a dětí, žáků a studentů mimořádně nadaných, 2005). The key factor for the categorization of cerebrally gifted pupils was carried out based on the pupils' examination in pedagogical-psychological counselling institutions and the reports for schools. From the point of view of personal characteristics, gifted pupils are a very diverse group where it is difficult to work out a general system of categorization of personal characteristics or cognitive specific components. In the past, there was a lot of research focused on these characteristics (Spivack, 1974; Roedell, 1989; Neihart, 2002), but significant individual differences among gifted ones occurred in many areas. The first connection link was a notification of acceleration as in mind processes as in selected personal characteristics. In spite of the huge diversification, some orientation categories of the most typical characteristics were created for making the talent identification easier and so the gifted ones were detected already at their pre-primary age or younger school age. Due to the focus of the topic, cognitive characteristics and recognition of the cerebrally gifted ones are put aside and, on the other side, social and emotional characteristics of intellectual individuals will be highlighted.

Abroad, mainly in the U.S.A., the research trend of personal characteristics has a long tradition. No wonder that a bunch of Czech researchers are inspired by foreign authors, they translated them and apply their research to the Czech conditions. However, it is necessary to consider the difficulties connected to the socio-cultural influences or the semantics of particular notions. Portešová (2002) points out the differences between the of understanding this notion in the U.S.A. and European countries on the example of perfectionism relating to cerebrally gifted individuals. In European countries, perfectionism is understood rather pejoratively, such as putting high targets without acceptance of failure which is accompanied by subjective dissatisfaction from own performance. In the U.S.A. perfectionism is perceived as something positive where

achieving goals is a strong motivation, but a possible failure is taken into account too. Positive energy is highlighted and it can lead to high performances (Hamachek, 1978; Preusser, 1994; Nugent, 2000; Portešová, 2002). It is possible to see the differences between the American and European approaches to social and emotional characteristics of gifted pupils. The American conception (Rimm, 2001; Bain, 2004) is based on the fact that high IQ children (120-145) do not have more social or emotional problems than their peers. On the other hand, they are natural leaders more often and they are accepted by their peers positively. If cerebrally gifted pupils are not popular among peers, it is not for their exceptional talent but for their other personal characteristics that can occur even among pupils from the ordinary population or in the case of under-average pupils. Among the Czech researchers, this opinion is shared by Portešová (2002) or Dočkal (2005). Dočkal adds that gifted child can be both well-balanced or unbalanced, introvert or extrovert just as their peers. Cerebrally gifted individuals are different as for their performances in a wider repertoire of reactions, they live their inner lives more intensively and they need many social impulses for it.

In the research by Laznibatová and Mačišáková (2000) there are not recorded any noticeable differences in personal, social and emotional spheres between cerebrally gifted pupils taking part in alternative education and the ordinary pupils population. They claim that the gifted pupils have their own problems, different values, they feel differently but in the same way as their peers. Slovak authors support the theory of positive personal characteristics of cerebrally gifted pupils – self-confidence, independence, ambition, reliability and also perfectionism of self-criticism (Laznibatová, 2001).

A wide range of research conducted by Ablard (1997); Cornell (1990); Hoge and Renzulli (1993) focused on self-evaluation of cerebrally gifted children. The results showed that cerebrally gifted pupils evaluated themselves more positively than their peers.

The antipole of such a view of the cerebrally gifted pupils points out their higher social and emotional vulnerability that could negatively influence their social integration, communication and relationships with their peers and it can lead to unpopularity in a peer group with the risk of social isolation. Even if it is not possible to work out a list general social and emotional characteristics of cerebrally gifted children for their whole population, certain common characteristics occur in these children more often than in the ordinary pupil population. It can be observed even in the selected definitions of talent. Fořtik and Fořtíková (2007) work with the definition of talent according to which there is an “asynchronous (uneven) development where accelerated intellectual abilities are combined with an accelerated intensity of the creation of inner experience and awareness that are different to the norm by their quality. Such asynchrony increases with the cerebral capacity which makes gifted ones especially vulnerable.”

In the framework of emotional and social characteristics, an antagonism is visible among particular research studies and also among the results of research and experiences from the practice. For illustration, the study by McCallister, Nash and Meckstroth (1996) focused on the comparison of selected research results related to social competences of cerebrally gifted children can be used as an example. As emerged from the research, cerebrally gifted individuals are doing well as for their social abilities and their social interactions with their peers. On the other hand, these findings were not confirmed by practicing teachers and psychologists. They claim it that cerebrally gifted individuals

experience certain difficulties in the social sphere. Such conflict can be the result of methodological mistakes and inaccuracy in research, e.g. an inappropriate choice of respondents and badly chosen research tools, projection of a subjective view into the conclusions to the research, disunited interpretation of terminology, e.g. cerebral gift, and last but not least, insufficient attention paid to other variables, such as social and cultural context, gender, etc.

The opposite research results were shown in Terman's (1925) longitudinal study realized on the sample of more than 1500 cerebrally gifted pupils. As emerged from the overall scores in social and emotional areas, these individuals are doing very well. However, Terman made a revision of his conclusions a few years later and he found out that cerebrally gifted pupils with an IQ higher than 145 showed higher risk levels in the social sphere compared to their peers or cerebrally gifted pupils with IQ lower than 145. This fact was confirmed also by other studies, e.g. Hollingwoth (1942); Austin and Draper (1981), Gross (1993); Silverman (1993). The last mentioned found out that as much as 80 per cent of pupils with IQ higher than 160 experience social isolation in the class and they have to face pressure and respond to demands from their peers which can lead to stress development.

Other research dealt with the issues of integration of gifted pupils to ordinary classes where they could be educated with older students in higher classes. The results show that they experienced difficulties in the relationships with their peers and, as a coping strategy, there was a decrease in the quality of their school performances, which lead to their acceptance by more schoolmates. This phenomenon is mentioned by Konečná (2010) who claims that this strategy is used by cerebrally gifted pupils as they find own social acceptance by their peers very important. She calls it the strategy of camouflaging own difference (intentional failure in tests, using less sophisticated vocabulary in the communication with peers, get worse marks which do not correspond with their potential), which can lead to the so-called underachievement.

Contemporary young people enter their lives and they are equipped with rich theoretical knowledge but on the other hand, they are not prepared for the most important things they need in their everyday lives (Geršicová, 2016, Geršicová & Barnová, 2018).

Maureen Neihart (2002) has dedicated her life to the issues of intellectual gifted pupils in the context of the social and emotional area. She points out the fact that cerebrally gifted children are confronted with problems as well as their peers. Her study describes situations which can be a source of risks for the cerebrally gifted pupils' social and emotional development – an asynchronous development in the cognitive, emotional and social spheres; school success as a source of envy and enmity from their peers; perfectionism; social isolation; stigmatism ("labelling approach") of intellectual talent which can lead to the development of an inadequate self-picture, primarily based on feelings of being different in the process of identification of intellectual talent. The fact, that cerebrally gifted individuals are aware of their talent, influences their experiences in their relationships with their peers when they feel different to the extent that they perceive their talent to be a social handicap (Coleman, 2000). It is necessary to mention that a research by Freeman (1979) showed that sleeping disorders, hyperactivity and weaker adaptation in gifted children can be caused by their relationships with peers.

Konečná (2010) introduces the research results of Janos, Fung and Robinson (1985). They found out that an above-average self-confidence in cerebrally gifted individuals can be caused by their peers. It was lower than the self-confidence of the gifted ones that

did not find themselves different. They showed much more problems in relationships with their peers even when their parents did not notice any problems in their behaviour.

Neihart (2002) also studied the cerebrally gifted children's inclination to depression and suicides. It was not confirmed. On the other hand, a research focused on incidence of depressions and suicides showed lower suicide rates among intellectually gifted pupils than among their peers. Similar results were obtained by Gust-Brey and Cross (1999). They confirmed that despite of risky factors, it is not possible clearly say whether cerebrally gifted individuals have a higher inclination to suicides or depressions than their peers.

Self-evaluation and self-conception are important personal characteristics. According to Blatný (2001), self-concept is a hierarchically organized cognitive structure that is created in the process of interactions of the individual in his/her (mainly social) environment. The factor of the mental regulation is behaviour and it serves as a tool for orientation and as a stabilizer of activities. It is a facilitating factor leading to achieving goals especially in the school environment. It influences ones's behaviour and the whole perception of the world. A bunch of authors (e.g. Bracken, 2003; Hoge, 1993) relate self-conception to attitudes, feelings, the awareness of own abilities, experiences, and the level of social adaptation. They use the notion of self-concept in the sense of self-evaluation. In the context of intellectual talent, it was found out that there is some relationship between positive self-evaluation and higher academic abilities and better results. On the other hand, negative self-evaluation was connected to lower abilities, poor school performance, and the risk of failure. Pupils with lower self-evaluation underestimate their abilities, they predict failure and they tend to give up when difficulties occur. Due to this fact, positive self-evaluation reflects previous performances and the subjective appreciation of own social and academic abilities (Roberts, 2001).

In her research, Konečná (2010) found out that the levels of self-evaluation by intellectual gifted pupils are significantly different in many areas (self-evaluation in the context of academic skills, abilities and behaviour, and the overall self-evaluation are higher than in areas of social acceptance and moving abilities) from the self-evaluation of ordinary pupils. These results correlate with Harter's (1999) conclusions, according to which cerebrally gifted children show previous differentiation among specific areas of self-conception.

The most frequently listed characteristics can be summarized as follows (Laznibatová, 2003; Škrabánková, 2012):

- Tenaciousness, persistence.
- Various interests, a lot of extracurricular activities.
- Spiritual activity is not tiring.
- Manners and behaviour are focused on the achievement of the set goals.
- Strong motivation with a predominance of inner motivation.
- Unwillingness to accept authorities (parents, teachers, etc.).
- A developed sense of morality and justice.
- Sensitivity or oversensitivity (tearfulness).
- If compared to their peers, gifted individuals give an impression of the emotionally less mature ones.
- An increased need for emotional support and emotional acceptance.
- Intensive experiencing of events around.

- High demands placed on themselves as well as their social environment.
- Impulsivity and expressive speech during argumentation.
- Awareness of being different leads to inconsistent feelings.
- Lower self-confidence and an inadequate self-concept occur less frequently.

Social characteristics:

- Problems with following rules.
- Cooperation with peers can be difficult due their efforts to get attention for themselves and their activities.
- They often have an extreme position in a social group.
- Need for freedom and activities.
- High or extremely low social skills.
- Courage to present own ideas, to use arguments in front of the group.
- Specific sense of humour that may not get positive responses by the environment.
- Looking for older children for communication and joint activities.
- Social naivety and innocence.

Finally, the work of Webb (2005), in which emotional and social problems of cerebrally gifted individuals are divided into endogenous and exogenous factors, must be mentioned. Exogenous problems arise primarily as a result of cerebrally gifted children's interactions with the outside world. There are problems in social and emotional adaptation, risky communication with peers, problems with the integration into the class, individualism, etc. Endogenous problems depend on the personality of the individual regardless the outer environment. These are sensitivity and oversensitivity, developmental asynchrony, perfectionism, unwillingness to run the risks, inadequate self-criticism, etc.

1 Research

In the Czech Republic, the most of cerebrally gifted pupils attend ordinary primary schools or grammar schools, and they are in daily contact with other pupils. Due to ambiguous research results, the question whether it is really possible to assume a certain level of risks in the case of cerebrally gifted pupils in the context of their school environment. The authors attempted to answer this questions by means of a quantitative focused on the perception of the selected aspects of the class social environment by the diagnosed cerebrally gifted pupils, the undiagnosed gifted ones and the ordinary pupil population. The possible differences between the social climate in ordinary classes and the climate in the classes with diagnosed or undiagnosed cerebrally gifted pupils were tested. A comparison was made also at the level of schools, it means among primary schools and grammar schools. Last but not least, the authors were interested in the fact whether the cerebrally gifted respondents repeatedly met some form of bullying or not.

1.1 Research objectives

The research was focused on the link between talent and bullying in primary schools and grammar schools. Its main goal was to map the incidence of bullying in cerebrally gifted pupils in primary schools and grammar schools and to reveal the predominant forms of bullying that the cerebrally gifted pupils met at primary schools and grammar schools.

Partial goals:

- To find out how cerebrally gifted pupils perceive their position in the formal and informal life of the school.
- To compare bullying experiences of the ordinary population and of the cerebrally gifted pupils at primary and grammar schools.
- To compare bullying experiences of the diagnosed cerebrally gifted pupils and the undiagnosed cerebrally gifted pupils.

Tested hypothesis:

- H1: Cerebrally gifted pupils (GP) meet bullying more frequently than ordinary pupils (OP).
- H1.1: Cerebrally gifted pupils (GP) meet physical bullying more frequently than ordinary pupils (OP).
- H1.2: Cerebrally gifted pupils (GP) meet psychological bullying more frequently than ordinary pupils (OP).

2 Methods

A quantitative research strategy for bullying incidence mapping at primary and grammar schools was applied. As a research tool, a questionnaire consisting of the following three parts was used:

2.1 Part A

In the first part of the questionnaire, an evaluative tool for prevention of problems in pupils' behaviour (Vojtová, 2011) was used. It was constructed on the basis of the questionnaire "Attitudes of pupils to the school life" which was standardized and adapted to the Czech conditions. The tool proceeds from a 40-item questionnaire testing the quality of school life on a four-item Likert scale by Williams and Batten (Batten, 1981). The questions proceed from the theory by Binkey, Rust, Williams (1996) that distinguish between six areas of school life: general positive evaluation and feelings, general discontent, perception of feelings concerning interaction between the teacher and a pupil, opportunity, status, identity and performance. In the questionnaire, the prevention of pupils' behaviour problems and the field of social integration in peer groups was added.

The questionnaire looks into the pupils' perception of their own position in formal and informal processes in the school life. It divides the areas of school life into those supporting learning and those being risky. At the same time, it points out the potential incidence of the pupils that are endangered in problem behaviour in the research sample (Vojtová, 2011).

The reliability and the validity of the tool were tested by several methods and the inner consistence and connections with extreme indicators of behaviour were verified. By using the method of factor analysis, the expected structure of particular areas of the class evaluation was found. The value of the reliability coefficient Cronbach's Alfa is above 0.7. The next used technique was a regression analysis where a significant connection between school environment evaluation and self-evaluation at the level of the Pearson correlation coefficient $R = 0.5$ was found (Vojtová, 2011).

This research tool went through the process of standardization, it was used and repeatedly verified in the research by Němec and Vlčková (2011). They looked into the differences in the perception social climate in primary and lower secondary schools.

2.2 Part B

This part of the questionnaire with the four-item Likert scale arose by recombination of questionnaires by Kolář (2001) and Peterson (2006) and it was adjusted to be compatible with Part A. It involves statements related to the mental and physical forms of bullying that pupils can meet with in the class.

Part B is a revised version of Martínková's (2013) questionnaire. However, it was radically adjusted after the first pilot study (64 respondents) and the following consultation with colleagues from the Department of Psychology, Faculty of Social Studies.

The original version of the questionnaire was built on the basic principles of the Olweus Method (Olweus, 1993) which was adjusted to the Czech conditions by Kolář and it is still used in practice. The content validity of the tool results was verified with a special strategy and alternative tactics of research (Kolář, 2001). The questionnaire was applied by the Czech school inspection in their inquiries several times. It was used for the purposes of a nationwide research on bullying in primary schools in 2001 (Havlínová, 2001). The questionnaire was completed by items from the research conducted by Peterson (2006) in the USA on the sample of 432 cerebrally gifted respondents. For the first pilot research, there was a random choice of respondents. Respondents were the pupils of a lower secondary school because in western countries, bullying incidence was detected at about the age of 12 (see Peterson, 2006).

The data gathered by the initial questionnaire were evaluated by the methods of dispersion analysis (ANOVA) for data with normal (Gauss) distribution, Kruskal-Wallis test for data with non-Gauss distribution, arithmetic mean, Pearson's Chi-square test, correlation analysis and contingency tables.

2.3 Part C

The last part consists of anamnestic data that can intervene as certain variables to the searched phenomena. Data from the questionnaire were processed and evaluated by relevant statistic methods (programme SPSS 21):

- Chi-square test – hypothesis verification in contingency tables.
- Kolmogorov-Smirnov test for normality – used in histograms.
- Factor analysis (rotated component matrix) – served for orientation calculation of particular displays of psychological and physical bullying.
- Mann-Whitney U test – non-parametric variant of t-test for independent choices used for hypothesis testing.
- Point graph – graphical projection of regress evaluation used for the whole scale of bullying.
- Descriptive analysis – focused on several levels, e.g. the average distribution of the scale data “the class is a place where” of all respondents, or the average distribution of the scale data “the class is a place where” in the groups of diagnosed and non-diagnosed cerebrally gifted pupils and the ordinary pupil population.
- Wilcoxon signed-rank test for two independent choices – test for non-parametric assessment of median values and the normality tests.

3 Research sample

Pupils are in the focus of the research. The research was focused on particular classes divided on the basis of the presence or absence of cerebrally gifted pupils or non-diagnosed intellectually gifted pupils in a class. Due to the extent of the research results, the paper will deal only with a group represented by pupils themselves, not by particular classes.

The determination of the ideal age limit about 12 proceeded from the retrospective national study by Peterson (2006) carried out in the USA on the sample of 432 teenagers GP. Peterson (2006) pointed out the finding that GP are more often the victims of bullying mainly at the age of 12. Due to low incidence of GP in this age category in primary schools and lower grammar schools, the age interval was widened to the whole lower secondary schools (6th – 9th class). The choice of respondents was deliberate as the categorization to three groups took place there:

- GP – cerebrally gifted pupils in lower secondary and grammar schools, diagnosed by the pedagogical-psychological counselling institution.
- NGP – cerebrally gifted pupils in lower secondary and grammar schools, non-diagnosed in pedagogical-psychological counselling institutions but being nominated by the teacher based on the methodical instructions.
- OP – ordinary pupils – control group in lower secondary and grammar schools.

In the initial consideration, the research should contain pupils of lower secondary school. After a preliminary research where the number of GP respondents was very low, the authors decided to include grammar schools, too. The selected age of respondents was the same for both types of schools. At present, an increased number of GP moving from primary schools to grammar schools is natural. In lower secondary schools, there is only a tiny percentage of these pupils. They are mainly in schools where special attention is paid to the development of GP. On the secondary school-level, it is possible to find adequate care either with various programmes or forms of education (e.g. project education, excursions to CERN, etc.). For this reason, it was necessary to ensure the set of pupils GP, NGP, OP from lower secondary schools and grammar schools at the age of 10 to 15. Only schools where there are GP were selected based on the list of schools created by the author from available information on gifted students accessible on web sites, from engaged professionals, from coordinators in the region and from the members of the work group dealing with the issues of gifted children at the Institute of pedagogical-psychological consultancy in the Czech Republic. From the created list of 40 schools attended by GP, 30 randomly selected schools were addressed. From these 30 schools, three refused to take part in the research because of the load of questionnaires they need to fill in within another research (GP are a very often frequented group). The research was realized in the addressed schools both in the classes with GP and in the classes with NGP and OP. In total, there were 1,768 respondents. The most numerous group consisted of the fourteen-year-olds (503), thirteen-year-olds (435) and the twelve-year olds (418). The research involved 27 schools from six regions (see the Table 1).

Table 1

Total overview of schools involved in the research

	<i>School</i>	<i>Frequency</i>	<i>%</i>	<i>Valid %</i>	<i>Cumulative %</i>
<i>Valid</i>	Primary school Ostrava	190	10.7	10.7	10.7
	Primary school Ostrava	56	3.2	3.2	13.9
	Primary school Ostrava	115	6.5	6.5	20.3
	Primary school Ostrava	13	0.7	0.7	21.1
	Primary school Ostrava	58	3.3	3.3	24.4
	Primary school Opava	28	1.6	1.6	25.9
	Grammar School Ostrava	35	2.0	2.0	27.9
	Primary school Opava	29	1.6	1.6	29.5
	Primary school Opava	51	2.9	2.9	32.4
	Primary school Moravský Písek	111	6.3	6.3	38.7
	Primary school Uherské Hradiště	27	1.5	1.5	40.2
	Primary school Olomouc	56	3.2	3.2	43.3
	Primary school Praha	125	7.0	7.0	50.4
	Primary school Vyškov	64	3.6	3.6	54.0
	Grammar School Brno	95	5.4	5.4	59.4
	Primary school Brno	33	1.9	1.9	61.2
	Primary school JMK	119	6.7	6.7	67.9
	Grammar School Pardubice region	180	10.1	10.1	78.1
	Grammar Sch. Mor. Silesian region	87	4.9	4.9	83.0
	Primary school Brno	45	2.5	2.5	85.5
	Primary school Brno	1	0.1	0.1	85.6
	Primary school Brno	31	1.7	1.7	87.3
	Grammar School Brno	37	2.1	2.1	89.4
	Grammar School Brno	16	0.9	0.9	90.3
	Primary school Brno	87	4.9	4.9	95.2
	Grammar School Brno	56	3.2	3.2	98.4
	Grammar School Brno	29	1.6	1.6	100.0
Total		1768	100.0	100.0	

As for the type of schools, there were 19 primary schools and 8 grammar schools participating in the research. Due to the sensitivity of all data, the questionnaire was anonymous and only bigger cities were included in the research.

Refer to Table 1 for a more detailed description of the schools involved in the research.

4 Results

At first, in the process of data analysis, the average scores of all the respondents from the groups of cerebrally gifted pupils (GP), non-diagnosed cerebrally gifted pupils (NGP) and ordinary pupils (OP) both from primary and grammar schools, were introduced. After that, the average values of school environments were analyzed for each group of pupils. Subsequently, the second part of the questionnaire focused on the manifestations

of psychological and physical school bullying which the participating pupils have met will be interpreted.

“The class is a place where...”

The school environment evaluation questionnaire (“The class is a place where”) included 35 questions. Pupils had to choose one of the options on the scale from 1 = definitely yes to 4 = definitely no. The biggest agreement between the respondents from primary and grammar schools was achieved in the context of the statement *“The class is a place where I am looking forward to the break, where I like talking with my schoolmates and now, there is a lot of fun”*. Most pupils did not agree with the statement: *“The class is a place where the teachers do not like me and where I feel lonely”*. In general, pupils evaluate their class environment rather positively on the scale. There are certain differences among particular sub-groups. In total, it is possible to say that, with some exceptions, the evaluation of school environment shows a similar development in all respondents regardless the type of the school the pupils attend. These results of the whole set of data are very similar to the research results by Vojtová (2011).

On the basis of the mentioned differentiation in the set of primary and grammar schools, the best agreement with the statements of particular groups of pupils is as follows:

- GP: The class is a place where I like to talk with my schoolmates.
- NGP: The class is a place where I am looking forward to the break.
- OP: The class is a place where I am looking forward to the break.

The biggest disagreement of the selected group is in these statements:

- GP: The class is a place where teachers do not like me.
- NGP: The class is a place where I feel lonely.
- OP: The class is a place where I feel lonely.

There are certain differences among particular sub-groups that were not statistically significant, however, they are worth mentioning.

- 1) Analysis of the evaluation in the domain A – success and opportunity. It is evident that pupils see their school as a place for education, they have certain demands related to education in the same way as they perceive their possibilities in achieving good results. Difference can be observed among GP, NGP and OP when the first 2 groups evaluated this statement more positively, which can be explained by their better school results compared to OP. Also, in the first 2 groups, it is evident that there is more curiosity and enjoyment from education than in the group of OP, which is a typical feature of this specific group of pupils.
- 2) Analysis of the evaluation in the domain C – total satisfaction. Evaluation in the area of total satisfaction is in the middle of the scale, some ambivalence is visible. The total class satisfaction is neutral or the pupils are mildly dissatisfied. More than a half of respondents did not agree with the statement that learning is fun. Only the attitude of teachers and their demands placed on pupils are more positively perceived.
- 3) Analysis of the evaluation in the domain I – forming (promotion) of identity. In this field, the evaluation is ambivalent, it is mildly positive in all items except self-knowledge when GP have a more negative attitude towards it than the other two groups.

- 4) Analysis of the evaluation in the domain N – negative experience. In total, this domain gets low scores of negative experience in a class, which is a positive finding. The statement “*where teachers do not like me*” was disagreed mostly by GP. It can be interpreted by the fact that they can be more popular with teachers than the others.
- 5) Analysis of the evaluation in the domain S – school status. The statements “*The rest of people value me*” and “*I feel important*” were evaluated in the positive part of the spectre. Own importance was perceived the least approved among all the domains. The most disapproving attitude to the statement that pupils differing from others are as much respected as others was expressed by GP, which shows how they, the different ones, are perceived by others.
- 6) Analysis of the evaluation in the domain T – the teacher-pupil relationship. Items of this part are evaluated more in the positive part of the spectre. The attitudes of pupils are balanced. GP agreed most agreed with the statement “*I can ask the teacher for help when I have a problem*”. The other two groups evaluated this item positively, too, which is satisfying. In general, there is an apparent agreement in this domain – teachers are willing to help all pupils with their problems, they give them advice and marks that pupils deserve. GP and NGP evaluated the statement “*Teachers help in achieving good results.*” Positively. On the other hand, all groups of respondents – with minimal differences – evaluated their teachers as rather unfair in assessment and not listening to them.
- 7) Analysis of the evaluation in the domain Z – interaction with peers. Almost all the items of the last domain are evaluated positively, except the item “*Where I can join my schoolmates in various games.*” – the evaluation of which is neutral. The item “*I am looking forward to the break.*” was the most approved one among all the 35 items.

“Which of the following situations have you experienced repeatedly?”

The second part of the questionnaire – Part B, is focused on situations that could be repeatedly experienced by pupils in a class. The items were divided to psychological and physical form of bullying with the dominance of psychological indicators. This part contains 17 items and the pupils had to indicate their answer on a four-item scale from 1 = definitely yes to 4 = definitely no. This part also summarizes the percentages of all the evaluative answers in the whole sample of primary and grammar school pupils. It shows the most frequently occurring forms of bullying that pupils of both types of school have repeatedly experienced (sorted by frequency of definitely yes and rather yes): “*My schoolmates were slandering me, they told something which was not true.*”, “*My schoolmates (two and more) made fun of me.*”, “*I had a nickname that I did not like.*” Based on the above enumeration, it can be assumed that it’s worth to examine deeper how pupils perceive particular situations from the point of view of semantics, how they experience various forms of psychological bullying and to what degree it is only teasing. It is apparent that pupils have the fewest experiences with the items “*My schoolmates (two and more) have already beaten me more than once*” and “*My schoolmates (two and more) forbade me to do something, i.e. go to the toilettes or sit down, etc.*”. On the other hand, it is evident that children have experienced physical bullying which could be in the advanced stage.

All the answers concerning bullying in the whole research sample – the diagnosed cerebrally gifted pupils (GP), the non-diagnosed cerebrally gifted pupils (NGP) and the ordinary (intact) pupil population (OP)

On the basis of the above classification, the respondents from both primary and grammar schools most agreed with the statement “*My schoolmates (two and more) made fun of me.*” Both groups have experiences with this possible kind of bullying. The biggest disagreement among the GP was in the item: “*The schoolmates groped me but I did not agree (e.g. breasts, genitals, bottom)*”. The groups of NGP and OP had similar attitudes towards the items “*My schoolmates (two and more) have already beaten me more than once*”, “*My schoolmates (two and more) have forbidden me, e.g. to go to the toilette, to sit down, etc.*” It can be assumed that when pupils of any group met the signs of bullying, it was more likely its psychological form than the physical one.

In connection with the previous results, bullying was tested only with GP in order to identify the most important signs of psychological and physical forms of bullying in this group of pupils.

The most frequently detected sign of psychological bullying was making fun of someone. As for physical bullying, breaking things, e.g. writing tools, books, pencil cases, damaging clothes etc., occurred.

As previous results show, school bullying is connected to the evaluation of school life. The GP who have experienced bullying, have worse attitudes towards their schools (classes) than the ones who have not experienced it. If a GP meets with bullying, his/her negative approach to school life has an impact on all spheres of school life. Specifically, the negative perception of school life was statistically confirmed at these domains (see Table 2, Figure 1): C – total satisfaction, N – negative experience, S – school status, T – relation teacher-pupil.

Table 2

Test of significance of the total bullying (psychological and physical) in cerebrally gifted ones within particular domains

	<u>Mann-Whitney U</u>	<u>Wilcoxon W</u>	<u>Z</u>	<u>Test significance</u>
Index_sum	207	262	-2.8	0.004
Index_A	343	398	-1.5	0.145
Index_C	286	341	-2.0	0.042
Index_I	349	404	-1.4	0.164
Index_N	172	4732	-3.4	0.001
Index_S	220	275	-2.8	0.006
Index_T	235	290	-2.6	0.008
Index_Z	414	469	-0.7	0.499

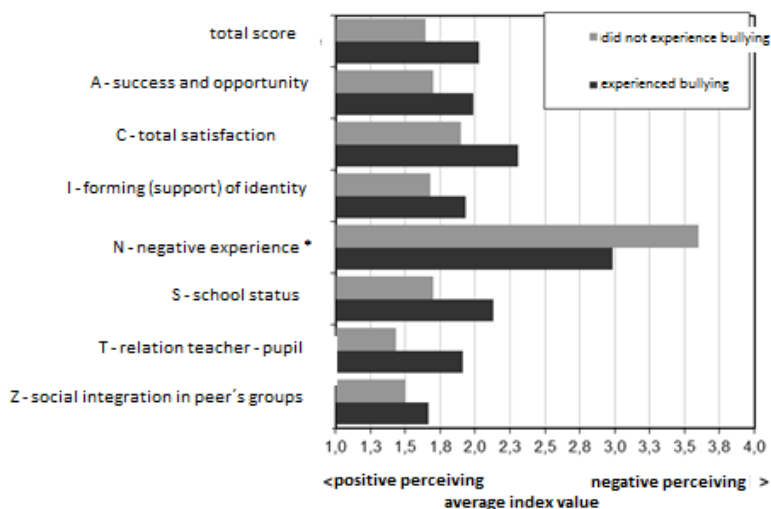


Figure 1. Average values of the total bullying index (psychological and physical) in cerebrally gifted ones within particular domains

Refer to Table 2 for a more detailed description of the test of significance of total bullying (psychological and physical) in cerebrally gifted pupils in particular domains. The average values of the overall bullying index (psychological and physical) in cerebrally gifted pupils in particular domains are presented in Figure 1.

5 Discussion

5.1 Evaluation of research hypotheses

Another phase of the research had to evaluate the selected relationships determined by the hypotheses. The Chi-square test was chosen as a method of inductive analysis (Hendl, 2006).

H1: Cerebrally gifted pupils meet bullying more frequently than ordinary pupils.

As stated in the theoretical part, there was a presumption that GP become a risky group in social interactions with their peers. It is possible to assume that they experienced the selected manifestations of bullying more frequently than OP. Even if in 74% of GP there was a little bullying, in 16% of them, more serious forms of bullying occurred. The total score was similar in other groups, too.

On the basis of the analysed data (see Table 3 and Figure 3), hypothesis H1 was not confirmed, hypothesis H0 cannot be denied. The difference is small and statistically insignificant. From the results it is clear that most children have met selected manifestations of bullying in their school life, however, bullying in the concept as stated in the theoretical part is met by 16% GP, 24.4% NGP and 24.7% OP.

Table 3

Contingent table of the bullying incidence in particular groups of respondents

	<u>Cerebrally gifted pupils</u>	<u>Non-diagnosed cerebrally gifted pupils</u>	<u>Ordinary pupils</u>	<u>Total</u>
<i><u>BULLYING IN TOTAL</u></i>				
Was not experienced	10.0	7.0	11.1	10.8
Experienced in a little extent	74.0	68.6	64.2	64.8
Experienced in a bigger extent	16.0	24.4	24.7	24.4
Total	100.0	100.0	100.0	100.0

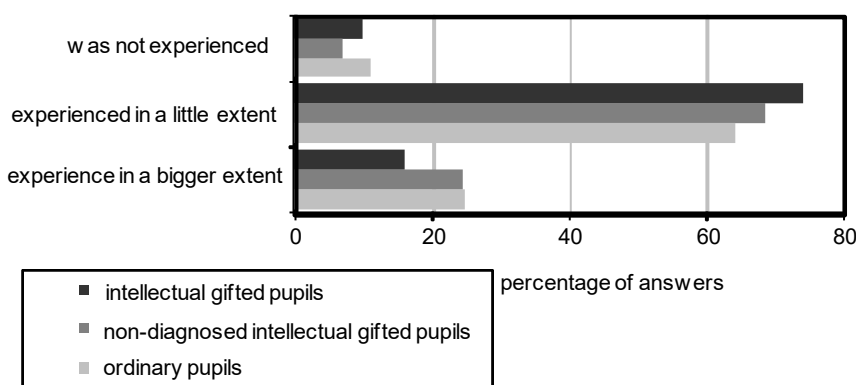


Figure 2. Incidence of bullying in particular groups of respondents.

Refer to Table 3 for a more detailed description of the bullying incidence in particular groups of respondents. Incidence of bullying in particular groups of respondents is presented in Figure 2.

The comparison of similar index values proceeds from the set of questions related to particular manifestations of bullying (the extent of respondents' agreement with various statements related to the given issue was analyzed). The set of respondents' answers to the given set of questions was transformed to a number (e.g. a few numbers) expressing the overall attitude of the respondent to the given issue. The stated numbers are the average values of indexes that proceed from the questionnaire, part B. The questions dealing with the signs of bullying related to particular groups of respondents were based on part B (see Table 4 and Figure 3).

Table 4

Comparison of average index values in particular groups of respondents.

<u>COMPARISON OF THE AVERAGE INDEX VALUES</u>	<u>Bullying in total</u>	<u>Standard deviation</u>
Gifted, diagnosed pupils	3.4	0.5
Gifted, non-diagnosed pupils	3.3	0.6
Ordinary pupils	3.4	0.6
Total	3.4	0.6

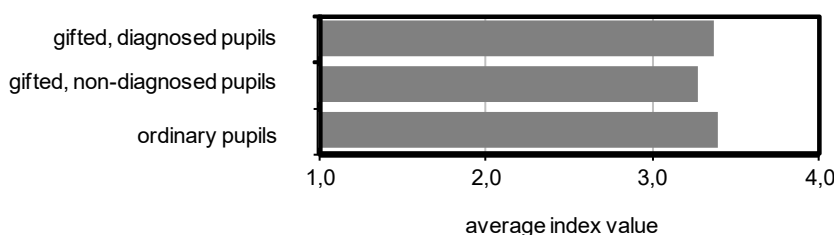


Figure 3. Comparison of average index values in particular groups of respondents.

H1.1: Cerebrally gifted pupils meet some form of physical bullying more frequently than ordinary pupils.

Similarly, as in the previous hypothesis, there was a presumption that cerebrally gifted pupils meet this form of bullying more frequently because on the basis of different characteristics related to GP, they are riskier than their schoolmates (OP).

On the basis of the analyzed data (see Table 5 and Figure 4), hypothesis H1.1 was not confirmed, hypothesis H0 cannot be denied as the difference is small and statistically insignificant (see Table 5).

Table 5

Contingent table of physical bullying incidence in particular groups of respondents.

	<u>Gifted, diagnosed pupils</u>	<u>Gifted, non-diagnosed pupils</u>	<u>Ordinary pupils</u>	<u>Total</u>
<u>PHYSICAL BULLYING</u>				
No experience	42.1	38.9	47.1	46.5
Experience in a small extent	52.6	48.4	40.6	41.4
Experience	5.3	12.6	12.3	12.1
Total	100.0	100.0	100.0	100.0

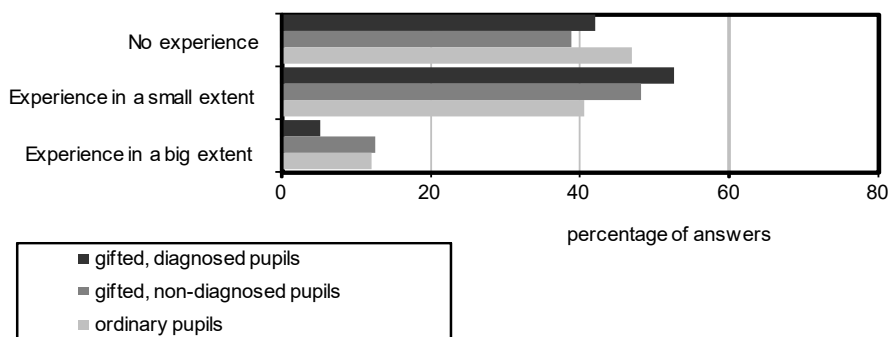


Figure 4. Incidence of physical bullying in particular groups of respondents.

Refer to Table 5 for a more detailed description of physical bullying incidence in particular groups of respondents. Incidence of physical bullying in particular groups of respondents is presented in Figure 4.

Table 6 and Figure 5 illustrate the comparison of average index values of physical bullying in particular groups of respondents. Comparison of average index values proceeds from the set of questions related to particular manifestations of physical bullying.

Table 6

Comparison of average index values in particular groups of respondents

<u>COMPARISON OF AVERAGE INDEX VALUES</u>	<u>Physical bullying</u>	<u>Standard deviation</u>
Gifted, diagnosed pupils	3.7	0.4
Gifted, non-diagnosed pupils	3.6	0.6
Ordinary pupils	3.7	0.5
Total	3.7	0.5

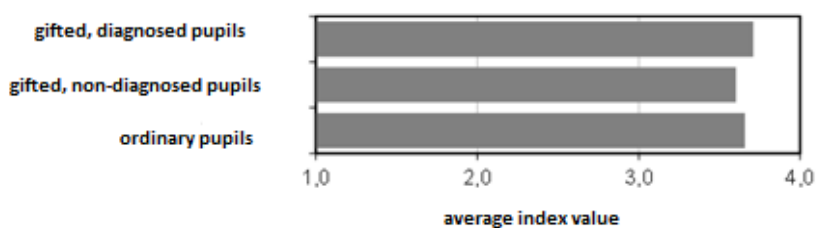


Figure 5. Comparison of average index values in particular respondents.

Refer to Table 6 for a more detailed description of the comparison of average index values in particular groups of respondents. Comparison of average index values in particular respondents is presented in Figure 5.

H1.2: Cerebrally gifted pupils met physical bullying in a bigger extent than ordinary pupils.

Similarly, as in determination of the previous two hypotheses, there was a presumption that GP meet this type of bullying more frequently for their different social and emotional characteristics. They are a riskier group than their schoolmates. However, it was not confirmed, as it is evident from the Table 7, the results on the psychological form of bullying incidence among GP and OP are balanced.

On the basis of the analyzed data (see Table 7 and Figure 6), hypothesis H1.2 was not confirmed, hypothesis H0 cannot be denied, the difference is small and statistically insignificant (see Table 7, column Psychological bullying).

Table 7

Contingent table of psychological bullying incidence in particular groups of respondents

<u>PSYCHOLOGICAL BULLYING</u>	<u>Gifted diagnosed pupils</u>	<u>Gifted non-diagnosed pupils</u>	<u>Ordinary pupils</u>	<u>Total</u>
No experience	10.7	7.5	11.2	11.0
Experience in a smaller extent	57.1	53.8	58.5	58.2
Experience in a bigger extent	32.1	38.7	30.3	30.8
Total	100.0	100.0	100.0	100.0

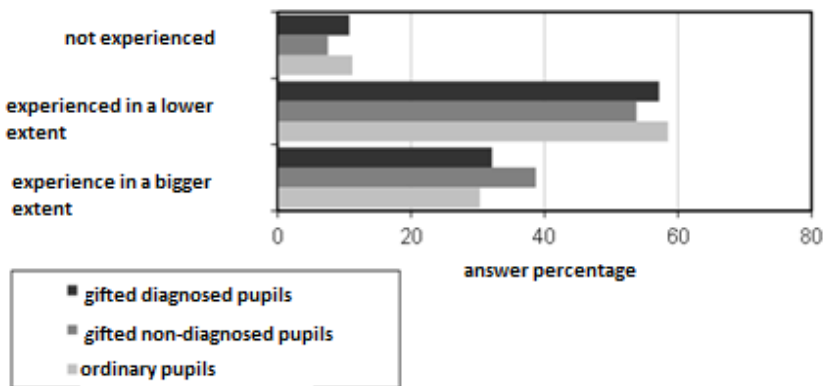


Figure 6. Incidence of psychological bullying in particular groups of respondents.

Refer to Table 7 for a more detailed description of psychological bullying incidence in particular groups of respondents. Incidence of psychological bullying in particular groups of respondents is presented in Figure 6.

Table 8 and Figure 7 illustrate a comparison of the average index values of psychological bullying in particular groups of respondents. Comparison of average index

values proceeds from the group of questions related to particular signs of psychological bullying.

Table 8

Comparison of average index values in particular groups of respondents

<u>COMPRARISON OF AVERAGE INDEX VALUES</u>	<u>Psychological bullying</u>	<u>Standard deviation</u>
Gifted, diagnosed pupils	3.2	0.6
Gifted, non-diagnosed pupils	3.1	0.7
Ordinary pupils	3.3	0.6
Total	3.3	0.6

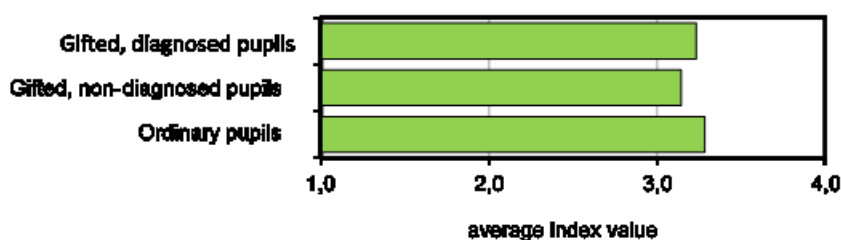


Figure 7. Comparison of average index values in particular groups of respondents.

Refer to Table 8 for a more detailed description of the comparison of average index values in particular groups of respondents. The comparison of the average index values in particular groups of respondents is presented in Figure 7.

Refer to Table 9 for a more detailed description of the statistical significance of bullying incidence – a summary of both kinds of bullying and the total index.

Table 9

Statistical significance of bullying incidence: summary of both kinds of bullying and total index.

	<u>Psychological bullying</u>	<u>Physical Bullying</u>	<u>Bullying in Total</u>
Value of the Chi-square	3.49	6.92	3.74
Degree of Freedom (Number)	4	4	4
Test significance	0.479	0.140	0.443

It was found out that all groups of respondents met psychological bullying more frequently than physical bullying. If the attention is focused on the group of GP, they met the psychological form of bullying more frequently – 89.2% (see Table 10) – than physical bullying (57.9%) which corresponds to the results of Peterson's research

(2006). She found out that psychological bullying occurs more frequently in GP than the physical ones.

Table 10

Index of psychological and physical bullying at GP – comparison

	<u>Psychological</u> <u>Bullying</u>	<u>Physical</u> <u>bullying</u>	<u>Bullying</u> <u>in total</u>
Gifted, diagnosed pupils	3.2	3.7	3.4
Gifted, non-diagnosed pupils	3.1	3.6	3.3

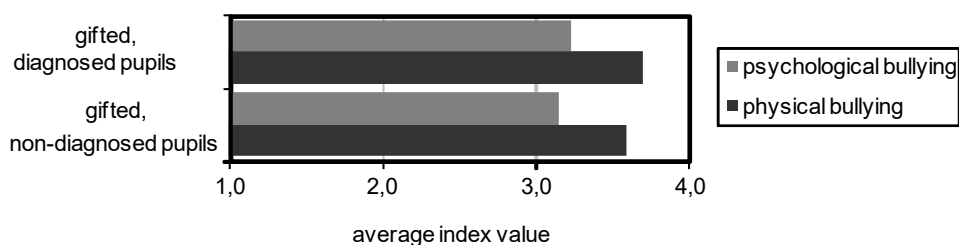


Figure 8. Index of psychological and physical bullying in GP – comparison.

Refer to Table 10 for a more detailed description of the index of psychological and physical bullying at GP – comparison. Index of psychological and physical bullying at GP – the results of comparison are presented in Figure 8.

6 Conclusion

The main goal of the quantitative research was to map bullying incidence concerning cerebrally gifted pupils (GP) in primary and grammar schools and to find the predominant forms of bullying that could be experienced by GP. At the beginning, it was necessary to define terminology related to cerebrally gifted pupils. The respondents were divided into three groups based on this terminology (cerebrally gifted diagnosed pupils GP, cerebrally gifted non-diagnosed pupils NGP and ordinary pupils OP). The research was joined by 1768 respondents from 27 schools, from six regions. 73 classes joined the research.

From the results of the quantitative part, it is evident that bullying of GP in primary and grammar schools was not confirmed on a statistically significant level due to the control groups, e.g. ordinary pupils (OP) and cerebrally non-diagnosed pupils (NGP). It is possible to tell that GP are not a riskier group in relation to bullying than other groups of pupils.

The total number of respondents shows that more than a half of pupils (64.8%) experienced at less serious form of bullying while 24.4% of pupils had to face classical bullying, whose terminology is based on the conception of the Methodical instruction for prevention and bullying solution No.24 246/2008-6 among pupils. In comparison to foreign studies, the range of bullying incidence is diametrically different, the stated

percentage is 13-89%. This data unbalance is given by heterogeneous semantics of the notion bullying which is decisive from the aspect of determine the frequency, forms and the particular signs of bullying. As an example, there is the research from the USA (Orpinas, 2003). It detected bullying in 89% of primary school pupils. The authors explain that these children were the target of at least one aggressive attack (and that is not defined as bullying neither by our authors nor by the Methodical instruction). In a study on a sample of adolescent in the middle-east of the USA (Hoover, 1992), 75% of pupils were detected, but it was a retrospective study and those results were referred to all school years.

In this research, typical bullying was detected in 24.4% of the total number of pupils. It corresponds to similar current researches where the range of bullying detection is between 20-40%, (e.g. Havlíková, 2001; Kraus, 2003; Martínek, 2009; Martínková, 2013; Eaton, 2012; Robers, 2013).

The most frequent signs of bullying experienced by all pupils in both types of schools are as follows: "My schoolmates slandered me (they told something which was not true)", "*My schoolmates (2 and more) made fun of me*", "*I had a nickname that I did not like.*". Based on the list, we can conclude that the most frequent form of bullying experienced by the pupils is the psychological one – 58.2% of a less serious form, and typical psychological bullying in the case of 30.8% of pupils. It is necessary to state that it is worth to search deeper in how pupils perceive a particular situation from the semantic view, how they experience the psychological form of bullying and in what case it is only teasing. Even teasing can have various levels involving the mentioned signs. The subsequent interpretation had to be done soberly with respect to the related events.

The developed signs of physical bullying are experienced by pupils the least frequently, the mild form of bullying occurred in 41.4% and typical bullying occurred in 12.1%. On the other side, it is evident that in chosen minority part of pupils (12.1%) some experience with the physical form of bullying was detected, which can show its more developed stadium. It is possible to state that if pupils of any group meet bullying, it is more likely the psychological one (89%) than the physical one (53.5%). That refers to the higher incidence of the possible initial stage of bullying.

Proceeding from inner differentiation of all three groups, GP and NGP mostly stated that their schoolmates made fun of them and, on the other side, a grope was experienced the least (e.g. breasts, genitals, bottom). In the Peterson's research (Peterson, 2006), making fun and abusing became the most expanded type of bullying. GP were the most teased for their appearance, intelligence and good marks.

On the basis of the presented facts, the authors proceeded from the precondition that GP are a risky group in social interaction with their peers and they are more predisposed to various signs of bullying. It was not statistically significantly confirmed. Even if mild bullying at GP was detected in 74%, in a bigger extent, it occurred in 16%. The total score was similar in other groups, too. On the basis of these results, it is possible to support authors that find GP to be a specific group with own problems, different values and perceiving, but similarly as their peers.

The explanation for why the research with no more differences in emotional and social sphere of GP differs from the opinions of the people from the practice, e.g. teacher's opinions and some psychologists' opinions, is in the fact that inside a group of GP, there is a special group of risky GP which is not detectable by common questionnaires. For the

purposes of the next research, it is worth to consider the use of such research methods which could detect even those pupils.

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