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Grading of Pupils in History: One-Year Research in the Czech Republic

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Abstract:
Introduction: The aim of the research was to point to a wide range of factors of the pupils' grading in History classes and to find out if this grading on the given sample corresponds with the context of the independently selected variables: pupils' weight, inclination to the Socratic type of values, type of family, and parents' education.
Methods: A sample of 1819 7th grade pupils was made up of the pupils of randomly addressed primary schools willing to cooperate. In the course of one school year, a questionnaire survey was carried out on this sample: each of the 14 regions of the Czech Republic was represented by 5 to 9% of the respondents. Data were evaluated at a 5% level of significance by means of the Chi-squared test.
Results: In all the monitored cases, a statistically significant link was demonstrated between the dependent variable (pupils' grading) and independent variables, i.e. the results in History have a wide-spectrum effect.
Discussion: The research findings correspond with the results obtained by other scholars, and external factors (independent variables) significantly affect the pupils' school success regardless of their mental and intellectual dispositions.
Limitations: School success is simply monitored through numerical grading of pupils, which does not always and completely reflect the pupils' progress in terms of their development. It was not a longitudinal survey but only a single one-year research from which no major conclusions can be drawn.
Conclusions: It was confirmed that the results of pupils in History, or their historical knowledge, represent a broad-spectrum matter in which the multiplication effect of external influences must be counted. In the future, research should be carried out in longer time ranges and with a greater emphasis on the causality of the phenomena.

Key words: school achievement, grading, knowledge, skills, History.

1 Introduction

The level of school success, commonly expressed by means of a 5-degree numerical grading scale, does not represent an ideal form of evaluation (Helus, 2015). Its long-term and extensive use rather suits teachers' schematic approach as it is simple, it saves time and enables both teachers and pupils to standardize certain groups, from which the teacher does not like transferring a pupil somewhere else (Čapek, 2014). It is generally accepted that the younger the pupil is, the less efficient the numerical grading is, both

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due to the insufficient range of the distinguishing level of pupils' knowledge and skills, as well as for the lack of sufficient feedback given to the pupil so that he/she can be aware of the roots of his/her problem (Kolář & Šikulová, 2009). Thus, this numerical grading scale cannot be regarded as sufficiently objective, it does not provide the teacher with the essential wider picture about the pupil and for the pupil, it is, in the right sense of the word, neither motivational nor educational. In addition to this, it creates a tendency to minimise the teacher's pedagogical optimism necessary for encouraging the pupil to obtain "good" marks, instead of encouraging him, for instance, to understand the nature of a phenomenon and its context, or to eliminate some procedural shortcomings with respect to learning, to acquire security and the feeling of confidence, or to achieve the desired goal, etc. Being under the sway of this numerical grading system, even the pupil finally gives in to this system of grading and starts striving more for a certain grade – i.e. the outer form – rather than for the internal understanding of the subject matter, his/her consideration of the subject matter in the context, the removal of misconceptions or the active acquisition of knowledge instead of mere learning/memorizing (Škoda & Doulík, 2011; Fraser & Garg, 2011).

Primary schools should, at least for the reasons listed above, work with the verbal form of assessment, which is, however, labour- and time-consuming for teachers. Also, at lower secondary schools (ISCED, 2011; 2012) for assessment, use of a scale of points or a percentage rating appears to be, in terms of the development of the pupils' personalities and strengthening their positive approach to cognition, more efficient and at the same time even more fair/just than the numerical form of grading. Both of them allow teachers to express the extent of the mastery of the subject matter, i.e. the degree of the fulfilment of the standards of education, or the level which should be reached by every eligible individual. The assessment by points in all subjects also gives teachers the option of a more comprehensive view of the pupil who, for example, is lagging – and achieves a low score, but is excellent in the majority of other subjects. The total score gives the pupil a chance to find compensation for his/her partial failure, and can assume the nature of a game in which the pupil is not reliant on a single subject as a source of point. No one needs to excel in everything, as it has typically been conceived in the case of top pupils, but every pupil can achieve success in another area.

Unfortunately, the common elementary schools in the Czech Republic work exclusively with this five-degree system of grading and in practice, they do not take into account the impact of its formative function (Nelešovská & Spáčilová, 2005). Years of teaching practice confirm that some "pure top learners" are excellent only because they do not go to school whenever they do not feel like getting a good mark on that day; and they prefer to devise a strategy as an excuse to escape a bad grade (Laznibatová, 2007). Thus, the essence of education – to master the educational content very well – remains on the side-line. These escape strategies of pupils may become, based on positive reinforcement (Plháková, 2004), the pupil's entire philosophy and approach to the solution of situations whenever they find the likelihood of becoming the winner very low. The said access is thus undesirable in relation to the fulfilment of the objectives of education: i.e. to raise an active, energetic and critically thinking person with a positive approach to life and to solving problems (Skinner & Holland, 1961).

In the above-described context, the issue of numerical grading of pupils is accompanied – both on the part of the pupil and his/her parents as well as on the teacher's side – by the phenomenon of the fundamental attribution error (Mareš, 2005). Its essence lies in

the fact that in the case of good achievement, people tend to ascribe it to themselves emanating from internal causes. In the case of any failure, there is an obvious tendency to search for causes outside themselves and put blame on external factors. In the school environment, similar situations occur when a teacher subsequently re-creates or re-shapes a pupil's auto-attributions by applying an erroneous causal attribution and thus, he can also change the conditions of the pupil's performance and so, even his/her achievement (i.e. grades) (Helus, 2006; 2011).

As it results from the above facts, the numerical school grading system is not quite an ideal form of school assessment and, as such, it has a number of pitfalls and weaknesses in terms of its efficiency. Despite that, due to the lack of any other adequate instrument, we used it in our research and we monitored final numerical grading in History in the context of selected variables in the 7th grade of lower secondary schools. The results of the research and their methodological design are approximated in the following two chapters.

For the 7th grade of lower secondary schools, the educational content of History is defined by the Framework Educational Programme for Lower Secondary Education (NÚV – National Institute for Education, 2013). It concerns, in particular, the educational areas of Man and His World, and Man and the Society, the content of which each school elaborates for individual subjects and forms by means of the School Education Programme. In general, it is expected that the pupils at lower secondary schools can find orientation in the timeline and in the historical map, that they can arrange the main historical epochs into a chronological sequence, they know where to find sources of information about the past, are aware of the importance of knowledge about history and that they are able to illustrate it by examples. The development of their competencies also depends on the educators' ability to link the educational content of different school subjects and on their ability to strengthen the cross-curricular relationships and contexts so that the pupils can create a complex idea.

2 Methodological context and nature of the research

The contribution focuses on the wider context of school success expressed in the form of the final school grades of students attending the 7th grade of lower secondary schools in History as an example. Its purpose is to broaden the view of school success as an independent variable by other contexts of independent variables, for instance, certain localities of the region in which a pupil attends his/her school, the type of the family which the pupil comes from, the highest educational attainment of his/her parents, the physical dispositions of the pupil expressed by the body mass index (Finucane at al., 2011), as well as the pupil's inclination to the selected value type. In the context of the entire spectrum of the value types monitored by the research according to Sekera (1994), this paper demonstrates the section of the research concerning the Socrates system of values. All relations between dependent and independent variables have been verified by means of the Chi-square test on the 5% significance level $\alpha = 0.05$. This contribution also introduces some selected results of the research, which was carried out on a sample of 1819 respondents from 42 lower secondary schools in the Czech Republic at the end of the year 2014 and the beginning of the year 2015.

The investigation was based on the assumption that numerical grading – despite its obvious limitations – shows, in the order of large numbers, the knowledge and skills of the students in a given subject rather than the impact of other variables. All respondents

answered the same questions in the paper version of an anonymous questionnaire, which consisted of 39 items. The first thirteen items were factual, for the rest of them, a four-degree scale was used ("Definitely Yes", "Rather Yes", "Definitely Not", "Rather Not") to indicate the degree of inclination to the given statement. In the context of the selected independent variables, it was examined whether school grades in History is statistically significantly related to them or not. For this purpose, the following five hypotheses were formulated:

H1 The distribution of the pupils' grades in History does not depend on the region, which means that the distribution of grades of these pupils across all the regions of the Czech Republic is well-proportioned;

H2 the distribution of the pupils' grades in History does not depend on the type of the family from which the pupils come, i.e. their knowledge of history projected in the final grade is not affected by the fact, for instance, whether the family is complete or incomplete;

H3 the distribution of the pupils' grades in history is not influenced by the level of education attained by parents, i.e. in terms of pupils' school results, this fact is irrelevant;

H4 the distribution of the pupils' grades in History is not related to the value of their body mass index (BMI), i.e. lower or higher weight is evenly distributed within the framework of the acquired school grades;

H5 the distribution of the pupils' grades in history does not depend on their inclination to the Socratic type of values.

The subsequent validation of the given hypotheses was carried out under simplified conditions, which are reflected in the interpretation of the obtained findings as well. The theoretical abstraction is based on the assumption that all teachers assess the pupils' knowledge and skills in History classes in the Czech Republic in a more or less similar way; that all teachers teach similarly; that all pupils have a similar interest in history; and that all pupils have similar predispositions for learning, etc. The research paper introduces the results of the verification of the defined research hypotheses under such simplified assumptions and opens the controversy to the causes of the ascertained statistically significant relations.

3 Research results

The Czech Republic is a relatively small community of people living in a relatively small space, which creates the impression of its uniformity and homogeneity. However, one cannot ignore the changes that have occurred in the last 25 years, e.g. in the social structure, in the lifestyle, in value preferences, in the extent of the activities within the concept of success, as well as in the accepted patterns and expectations, willingness to work on oneself, etc. Their influence is generally seen to be more centrifugal, with a tendency to cumulate similar things (Piketty, 2015).

The relations between the region in which pupils live and their final grade in History were examined in all 14 regions of the Czech Republic. The implied premise that the distribution of the pupils' grades across all regions of the Czech Republic is uniform is expressed in hypothesis H1. However, in the reference sample examined by us, this hypothesis was not confirmed since the value of the Chi-square distribution coefficient was reported far below 5% (the Pearson Chi-square: 127.432, $p = 0.00000$) – see Figure 1.

Knowledge about the historical context of events, i.e. the consequences of certain events or, on the contrary, their causes, can be considered the key issues in the context of humanities education. Didactically, when working with them, higher intellectual operations are being developed (Tollingerová & Malach, 1973) – e.g. the processes of evaluation, comparison and verification are developed in pupils, as well as their skills of interpretation, deduction, induction, etc.

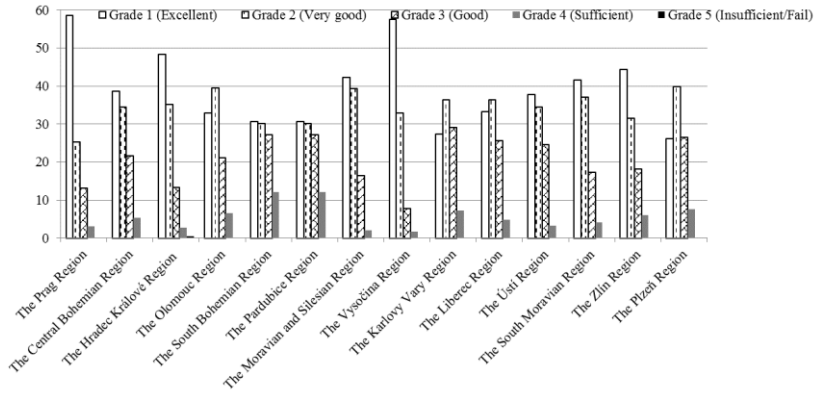

Figure 1. Regional distribution of the final grades in History (7th grade) according to regions.

The results referred to in Figure 1 depict the position of regions according to the frequency of the final grades at the end of the 7th grade:

- the "excellent" grade dominates in the Vysočina Region (54%), the Capital City of Prague (52%) and the Zlín Region (40%);
- the "very good" grade dominates in the capital city and the Karlovy Vary Region (48%), the Moravian-Silesian Region (47%) and in the Hradec Králové Region (41%);
- the "good" grade dominates in the Olomouc Region (33%), the Liberec Region (31%) and the Plzeň Region (29%);
- the "sufficient" grade dominates in the South Bohemian Region (13%), the South Moravian Region (11%) and the Pardubice Region (9%);
- the "insufficient" grade dominates in the South Bohemian Region (0.76%), the Plzeň Region (0.75%) and South Bohemian Region (0.70%).

The representation of the above-average pupils in all regions was more than 50%. The awarded grades in History in all regions reported more than 50% of "excellent" and "very good" grades. The most successful were the pupils in Vysočina Region (86%), Ústí nad Labem (78%) and the Hradec Králové Region (76%); the least successful among them were the pupils in the South Bohemian Region (57%). On the contrary, below-average pupils represented the minority in every region, the highest rate was reported in the South Bohemian Region (14%), the South Moravian Region (11%) and the Olomouc Region (9%).

On the basis of the findings, it was not possible to confirm Hypothesis H1 and declare that the grades in History were, in terms of all the 14 regions of the Czech Republic, evenly distributed. On the contrary, the reference sample of the respondents confirmed

the existence of a link between the grades and the regions and signalled an uneven distribution of pupils with good grades in History in the context of the Czech Republic. Similarly, the impact of the pupils' family background was partially tested, specifically the type of family – see hypothesis H2, and the highest education attained by parents – see hypothesis H3, on the final grades of pupils attending History classes in the 7th grade. The school success rate of pupils – including History – is generally associated with the influence of the family (e.g. Matějů & Večerník, 1998; Teleková, 2013; Vomáčková & Cihlář, 2013). In our research, we attempted to verify the dependence on two independent variables through the grades achieved in History. We distinguished between the following types of families: complete, incomplete, complemented and substitute (foster) family (Dunovský, 1986) and we observed the performance of their social and psychological functions (Helus, 2007). With respect to the low representation of certain types of families, we have assigned them to the "other" group (2%) and that group was statistically evaluated along with the complete family group (66%), that of the incomplete family (19%) and that of the complemented family (13%). The differences in the distribution of the achieved grades (grading) according to the types of families are evident not only visually but also graphically and statistically (the Pearson Chi-square: 59.2687, p = 0.000009) – see Figure 2.

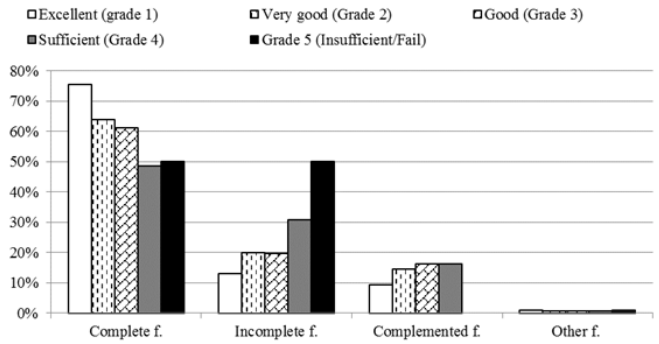

Figure 2. The relation between the type of family and the school success of 7th grade pupils in History.

Figure 2 illustrates that from the aspect of school success – namely the pupils' school grade in History – it really matters what family background the pupil comes from, i.e. there is a statistically conclusive connection between the type of family and the degree of success in this school subject. Thus, hypothesis H2 cannot be confirmed on the 5% level of significance. In our research sample, the assumption of family functionality in complete families is supported by frequent "excellent" grades and by the tendency of decline in the case of worse grades up to the "insufficient" grade. On the contrary, in the case of single-parent families and supplemented families, "excellent" grades are the least frequent, and the representation of worse grades grows as far as the "insufficient" grade (in pupils from supplemented and other families no "insufficient" grade was awarded at the end of the 7th grade). Although it is not in any way a unique finding, as it corresponds with the results of a whole series of similar research (e.g. Sobotková, 2001; Jedlička et al., 2004; Fischer & Škoda, 2008; Blížkovský, 1997), these results are not in fact reflected in the educational practice.

The second tested independent variable in relation to the pupils' school grade was the highest education attained by their parents. When processing the obtained data, two groups were created from the original 6 questionnaire variants: the first, in which at least one parent attained university education (41%) and the second, which included the pupils' parents who did not (59%). The reference sample of 1819 respondents proved the existence of a statistical link (Pearson Chi-square: 21.1298, p = 0.000299), and it can be stated that from the perspective of the school results in History it really matters how well educated the family from which the pupil comes is – see Figure 3.
The impact of the family on the student's academic achievement in History can be associated, for instance, with a more challenging and active family environment, with its adventure activities, with the level of communication, discipline, and rigor of the parents, with the education of the pupils, divergent and lateral thinking, social responsibility, cultivation of their will and perseverance in overcoming obstacles, but also with a growing interest in historical roots, etc.

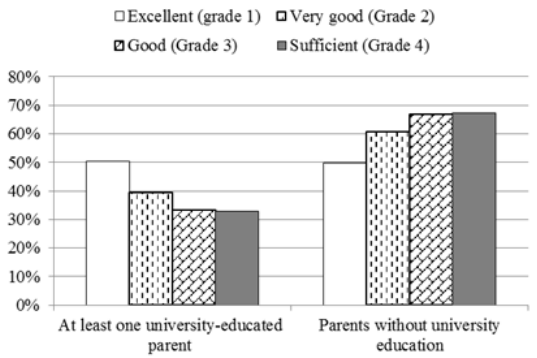

Figure 3. Correlation of the parents' educational level and the school success of 7th grade pupils in History.

As Figure 3 illustrates, in the families with at least one university-educated parent, there is an evident declining tendency from the "excellent" to the "sufficient" grade (shows the share of a given grade), while in families without a university-graduate, the tendency is just the opposite (for the clarity of the chart the "insufficient" grade was not included, it represented a mere 0.1% of all grades). From this perspective, the parents' highest attained education appears to be the fundamental prerequisite for success in the given sample of respondents. Based on the above, hypothesis H3, according to which the level of students' school success in History does not show a correlation with the level of education attained by their parents, must be rejected. The opposite is true and the family background in this matter gets to its quality or loses just with the level of the parents' educational attainment. However, this is not the only connection with this independent variable. For example, international comparative studies indicate that the highest educational attainment of parents is also closely associated with the likelihood that their children will receive university education (Chevalier, 2004).
A link to the final grade in History at the end of the 7th grade was investigated in relation to the physical predispositions of pupils measured by BMI. The current trend of decline in physical fitness and children's excess weight are associated with insufficient

physical activity, and poor eating habits developed in the family in the context of its lifestyle. Seemingly unrelated variables in the given sample of respondents showed a statistically conclusive correlation (Pearson Chi-square: 23.0452, p = 0.027357). In the Czech Republic, the best results in History were achieved by students with normal weight (examined in the aggregate frequency of "excellent", "very good" and "good grades": 94%) – see Figure 4. The results of our research investigation thus indirectly support the fact of cohesion between the cognitive, physical and mental factors of the personality of an individual (e. g. PIAAC, 2014; Mudrák et al., 2013).

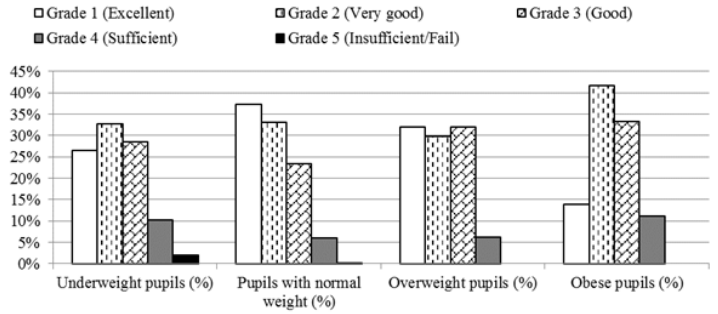

Figure 4. The relation between the Body Mass Index and the school success of 7th grade pupils in History.

As Figure 4 illustrates, a decreasing distribution of the spectrum of grades from the "excellent" grade up to the "insufficient" grade is demonstrated on the part of pupils with normal weight (they acquired the highest number of "excellent" grades and the lowest number of "insufficient" grades in History). The most "very good" grades in the whole monitored reference sample were acquired by obese pupils (42%), who also acquired the highest number of "good" grades (33%) and even the highest number of "sufficient" grades (11%). If we divided the entire sample of respondents into a group of above-average pupils (with total frequency of the "excellent" and the "very good" grade) and that of below- average pupils (the sum of the "sufficient" and "insufficient" grade frequencies), the most above-average pupils would be those with normal weight (70%), followed by overweight pupils (62%), underweight pupils (59%) and obese pupils (56%). In the group of below-average pupils, those with underweight would dominate (12%), closely followed by obese pupils (11%). As already mentioned, the grade "good" was the most frequent with obese pupils.

Based on the above, it can be concluded that pupils with normal weight in the reference sample showed a certain excellence in this school subject, while the pupils evaluated as overweight based on their BMI, can be characterized by standard or average performance. Even the fourth hypothesis H4, – according to which there is no link between the pupils' grade in History and the value of their BMI – was not confirmed.

In search for the possible correlations with the reported school results in History, we further tested the pupils' inclination to selected value types. The Socratic type of values was selected for this testing with regard to the content of History as a school subject and the goals of the educational process. This is a type of values focused on self-improvement and self-education, i.e. on the qualitative transformation of the individual,

the willingness to sacrifice to achieve the desired results. This pupils' inclination is demonstrated in the following two statements (or propositions) selected from the four propositions examined in our research:

A. I have my book heroes and I want to be like them – see Figure 5,
B. I have undertaken a lot of work on myself since the previous year (e.g. language improvement, improvement of physical prowess, progress in Mathematics) – see Figure 6.

In Figure 5, the direct correlation between the grades in History and the pupils' self-development by means of reading books (in this case, not only books dealing with history) is shown. By applying the Chi-square test, a statistically significant correlation was confirmed (Pearson Chi-square: 47.7882, p = 0.000003), the better grades pupils achieved, the more frequent their consent with the proposition was and vice versa.

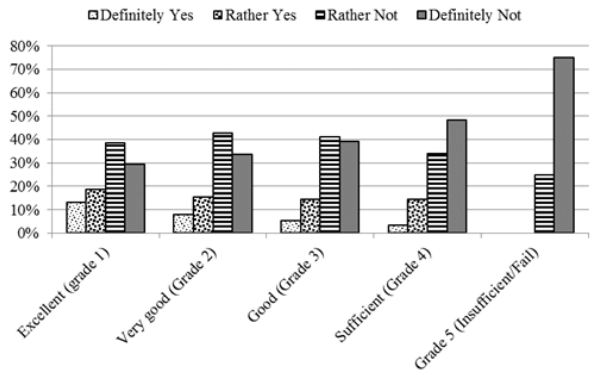

Figure 5. Correlation between the grading in History and the Socratic "A" type of values.

In the case of the "A" statement/proposition, the frequency of top pupils (those with "excellent" grades), whose unambiguous standpoint was affirmative (i.e. "Definitely Yes"), was at the level of 13%, with pupils who acquired the "very good" grade it was at the level of 8%, with pupils who acquired the "good" grade it was at the level of 5%, with those whose grade was "sufficient" at the level of 3%, and with pupils with "insufficient" grade a categorical consent did not appear at all. This structural distribution corresponds with some minor aberrations, even with other values in the scaling zones, i.e. when considering the overall affirmative statement ("Definitely Yes", "Rather Yes") the proportion of pupils gradually decreases on the scale from the "excellent" grade to the "insufficient" one, on the contrary, the proportion of pupils grows with the aggregate of negative statements ("Definitely Not", "Rather Not"). While 68% of top graders do not agree with statement "A", in the case of those with the "very good" grade it is 82% and none of the pupils with the "insufficient" grade agrees.

The reading comprehension skill, at the same time, belongs among the key features of literacy monitored by such international research as PIRLS and TIMSS 2011(ČŠI – Czech School Inspection, 2016), PISA, 2012 (ČŠI, 2013). When comparing the results of reading literacy between the years 2000 and 2009, on the international level, a statistically significant decline in Czech pupils was observed. In that period, the percentage of students with an insufficient level of reading competencies increased to 23%, which represents a ratio exceeding the international average (VÚP – Research

Institute of Pedagogy, 2011). This is related to the statement made by one third of Czech pupils, who think that reading is a waste of time for them. In those nine years a decrease in the number of pupils who read daily for a longer period for joy was also discovered in the Czech Republic.

The second tested proposition, by means of which the inclination of pupils to the Socratic type of values was observable, was the statement "B" – "I have undertaken a lot of work on myself since the previous year". On the examined sample of respondents, we could observe a connection with the awarded grades in History within the framework of the verification of Hypothesis H5 – the school success of pupils in History does not show any connection with the pupils' inclination to the Socratic type of values. Even in this case, however, the hypothesis was not confirmed (the Pearson Chi-square: 90.2910, p = 0.000000) and it had to be rejected at the 5% level of significance – see Figure 6.

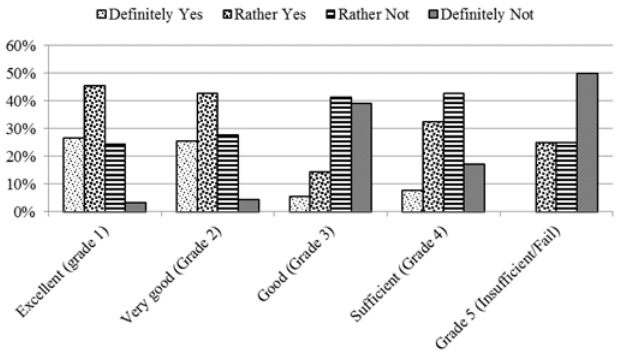

Figure 6. Correlation between the grading in History and the Socratic "B" type of values.

As it can be observed in Figure 6, the positive comments/statements of the respondents (the sum of "Definitely Yes" and "Rather Yes") drop down from the "excellent" grade (72%) to the "insufficient" grade (25%), which is in agreement with the previous statement, and the negative comments (a sum of "Definitely Not" and "Rather Not") increase from the "excellent" grade (28%) to the "insufficient" grade (75%). A deviation in the distribution of the responses can be seen in the case of respondent with the "good" grade.

4 Conclusions

The research paper pointed to some of the correlations between the pupils' school achievement in History at the end of the 7th grade of lower secondary schools in the Czech Republic. Although it was only a one-year research, it is impossible to overlook the multiplication effect of the observed factors (the independent variables) on the dependent variable – the final grade in History. In all these cases, statistically significant correlations were demonstrated, which confirms that the pupils' results in History (or historical knowledge, the ability to infer time and causality, critical drawing of conclusions based on studying sources, etc.) are influenced by a broad spectrum of issues in which it is necessary to reckon with a multiplication effect of seemingly unrelated phenomena, such as the pupils' BMI or the pupils' belonging to a specific region. It was proven that education cannot only make use of the cognitive plane

(mediating knowledge), but that it works on a significant psychomotor plane (learning to cope with problems, overcoming obstacles) and the affective plane (shaping properties, growing confidence, giving hope, assisting the search for meaning or the goal). Education in this broad sense is not just an issue for teachers and pupils, as it is generally conceived in a simplistic way. It is also the responsibility of parents, as well as politicians, who set up the legislative framework for its achievement. In particular, with compulsory education, which is guaranteed by the state, a standard level of education should be required, and the state should take advantage of all the tools – including the restrictive ones – to achieve it, which the current educational practice in the Czech Republic does not fully reflect (Vomáčková et al., 2015).

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