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Primary schooling in the Czech Republic and children from socially disadvantaged backgrounds

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Abstract

This paper deals with the issue of preparatory classes implemented in primary schools for children from socially disadvantaged backgrounds. It analyzes the issues of children from socially disadvantaged backgrounds, it describes the survey - diagnosing the level of cognitive-perceptual features that are important for practicing reading and writing, and it also checks (after six months of attendance in a preparatory class) the efficiency level of individual care. It informs on legislation and the European Social Fund (ESF) project "Together we can", which took place in the Czech Republic between 2009 and 2012, whose main aim was to increase the school success of children from socially disadvantaged backgrounds and allow them education in mainstream education.

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1. Introduction

Entrance of each child into primary school is an important social milestone in their life, as well as in lives of their parents. The child acquires a new social role, which is not selective and at the same time it is confirmation of the so far successful development. A child becomes a schoolkid. The start of schooling can also mean an increased risk of school failure.

2. Theory background

Basic schooling in the Czech Republic

Compulsory school attendance in the Czech Republic was established by Marie Terezie in 1774. School attendance was for six years, except for the summer months when children from villages helped to work in the fields. After 1918, an eight-year compulsory school education was established. By early 1960's, primary school attendance

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was gradually extended to 9 years, and pupils complete the education by the end of the last year of their compulsory schooling.

Admission of children to primary school is set by § 36 of Act No. 561/2004 Coll., on preschool, elementary, secondary, vocational and other education (Education Act). According to this law, the responsibility of child's legal guardians is to register them for compulsory school attendance. These are children who reach 6 years of age by 31st of August of that year. If a child after reaching the age of six is not physically or mentally ready and if the child's legal representatives require it in writing by 31st of May of the calendar year, in which the child should begin compulsory schooling, the school director postpones the start of compulsory schooling by one school year. The application must be accompanied by a recommending assessment of the relevant school advisory facility and specialist or clinical psychologist. If the student in the first year of primary school shows a lack of physical or mental maturity for school during the first half of the school year, the school director may postpone compulsory school attendance for the following school year, after consultation with the legal representatives of the child.

Some children may therefore start primary school with some disadvantages. For example they inadequately control the language lesson (they have a small vocabulary, reduced verbal alert), the level of their knowledge lags behind their peers (it is determined by the environment in which they grow up), they have poorly developed fine motor, graph motor, fall behind in the development of visual and auditory perception, have reduced social skill levels. These children adapt very difficulty to the new role of a schoolkid, their family does not provide them with an adequately stimulating environment and their school attendance is often irregular. Also, teachers' expectations in relation to children from socio-culturally challenging environments that require specific educational approaches are often influenced by prejudices and previous experience with the education of members of this target group.

For these children, school is a greater burden than for the majority of society children, because they have to change or modify their habitual behavior and deal time with a large number of new tasks in a short (Sikulova, Brtnova-Cepickova, Bartosova, Hornackova 2009).

**Child and socio-cultural disability**

Socio-cultural disability results from social diversity and cultural jurisdiction and it represents a determination that an individual can feel due to their different social, national, ethnic, religious layer.

For the purposes of the Education Act, the socio-cultural disadvantage is defined as "a family environment with a low cultural and social status, vulnerable with social pathologies" (Act No. 325/1999 Coll.).

The group of children from socially disadvantaged backgrounds also include children, whose parents don’t support them in school preparation or in other school activities. The relationship of a family to education may be negative. A family may also have difficulties providing enough material for the needs of children.

In these cases, timely care is very important for child from a socially disadvantaged environment. A suitable environment for the development of child is involving the child into the system of preschool education in nursery schools, or preparatory class before start of the first class.

**Preparatory class**

Currently the development of preparatory classes is allowed to schools by Education Law (Act No. 561/2004 Coll., on preschool, elementary, secondary, vocational and other education, as amended.

The legislative document also states that the educational content of the preparatory class is a part of the school curriculum. This means that teachers have a duty under the SEP to provide educational content for this class, or to create an educational program, which will be followed by preparatory classes (Smolikova, 2007).

Education of children in preparation classes is based on an individual approach and individualized work. For work in preparatory classes, teachers must use diagnostic activities, which should help them to identify and compensate the weaknesses in child development and learning.

**Project titled "Together, we can"**

The overall objective of the project was to increase the potential school success of children from socially disadvantaged backgrounds and to allow them education in mainstream school. The intention was to develop and
verify in practice education strategies and ways of methodological assistance, based on the needs of children, they will optimize their further development and will lead to integration into the educational process from the 1st year of primary school. The project has contributed to promoting and improving the work of teachers, who teach in the preparatory classes. This was achieved by creating training courses. Within the project, methodological materials and aids (for children as well as for teachers) were originated for work in the preparatory class. The project included an annual verification of work in preparatory classes, the use of aids and methodological materials and also knowledge from courses.

The following section is devoted to the implemented survey in selected preparatory classes.

3. Method

The methodology and monitored sample of the survey

The presumption for the successful acquisition of trivia fundamentals is to achieve a certain level in the field of perceptions. Their diagnosis of children around six years of age is a current topic, with which many Czech and foreign experts deal with. For example Lili Monatova, Vaclav Mertin, Vera Pokorna, Olga Zelinkova, Brigitte Sindelarova.

It is preferable to perform early screening of children before entering school, and devote training of children showing problematic performance in weakened areas - in the family, nursery school, or in preparatory class.

*The test for risk of failure for reading and writing of early schoolchildren* from authors Anna Kucharska and Dana Svancarova (1996, 2000, 2001) is a method that is designed for children in nursery and primary schools and it relates to the diagnostic of functions that are necessary to practice reading and writing. The test allows the screening of children before their entrance to school or after the commencement to the first class of primary school, or in the preparatory class (Svancarova, Kucharska, 2001).

The survey objectives

1. To determine the level of functions that are important for practicing reading and writing in children in preparatory classes.
2. To implement a re-test (after 6 months), which verifies the effectiveness of individualized care in preparatory class.

The survey tasks

1. To determine the degree of correlation between each sub-test of *the Test for risk of failure for reading and writing in early schoolchildren*, and between each sub-test of the test and the re-test.
2. To verify the assumption that children will improve after training of weakened areas in the preparatory class.
3. To determine whether there is a significant difference between younger and older children.
4. To determine whether there is a difference between boys and girls.

Sample description

The survey was conducted in all the preparatory classes involved in the annual research within the "Together we can." project. There were fourteen preparatory classes at twelve primary schools in the Usti, Hradec Kralove and Pardubice regions.

A total of 180 children were tested. The initial diagnosis involved 164 children (illness, irregular attendance). 147 children completed the re-test (illness, irregular attendance, change of residence). A total of 67 boys, 90 girls, and in 23 cases, sex was not stated. Age was categorized into two values: 1 = up to 6 years, 68 children in the file, 2 = over 6 years, 104 children in the file, 7x unlisted, 1x was zero.

Testing schedule
The initial diagnosis was implemented in October and November of the school year 2010/2011, i.e. at the time when there was already a certain degree of adaptation of children to the new environment, but a systematic development of perception and graph motor of children have not begun yet. The re-test was carried out after six months in May and June of the school year.

**Implementation of the survey**

Individual test administration in the environment of ordinary classes. The administration was implemented by trained assistants of methodology - supervisor and a co-operating teacher within a defined project plan.

**Methods of data acquisition**

The test of risk of failure for reading and writing in early schoolchildren (hereinafter as the Test of risk) is a diagnostic tool designed for the screening in pedagogical - psychological counseling, trained teachers in kindergartens and primary schools (Svancarova, Kucharska, 2001).

It is possible to use the test from the age of 5.5 to 7 years, 10 years within educational diagnosis in nursery school, in educational - psychological counseling in the diagnosis of school readiness. Further use is possible after the onset to primary school in the early months, or even during the first half.

The test allows to search for children who do not have all the developed perceptual and motor areas, as would be required for a successful start to school and children where specific learning deficits could occur in the future due to partial deficits.

The test contains 13 sub-tests, which are distributed in 56 items. The test includes imagery. To complete some sub-tests, it is necessary to have a "buzzer" and a paper with three lines to re-draw characters (sub-test No. 1). The test is entered individually and according to the child's ability and takes approximately 30 minutes.

Before each task training has to be done – the assessor familiarizes the child with the task and verifies whether the child understands the instructions. During performance of the tasks they cannot help the child, their positive motivation is very important. For every correct answer one point is obtained. According to the number of points achieved in each sub-test, the assessor finds out the level of the child in the given area. The total number of points assign the child to stena standard. Children who reach a 5 - 10 stena (average or significantly above-average performance) should not have major difficulties in acquiring reading and writing. From a 4 or lower stena (lower average to significantly below-average) the child belongs to a risk area.

Sub-tests S1 - S5 are focused on the auditory area. They find the level of auditory analysis of words, phrases into individual syllables, sound resolution ability at the beginning, middle and end of a word. A child differentiates length, staking like Če, Če, Če, dí, ti, ni and some close pairs of sounds. Differentiation of length is verified using the buzzer in the form of interpretation of a heard word or phrase.

Sub-tests S6 - S9 relate to the visual field. S6 requires the co-operation of sight, hearing and motor skills, it is the understanding and interpretation of rhythm with the help of a buzzer. The rhythm is graphically illustrated by large and small drops (imagines), a child watches the drops on the line and transfers the rhythm of a small drop, large drop to the tone (buzzer) as a short - long. Then the task is turned and the assessor shows a certain rhythm with the buzzer and the child must determine which line it is.

S7 verifies the ability to differentiate similar shapes mirror-like (illustrated appendix - a pair of images).

S8 detects a short-term memory. A child watches a picture for about five seconds and after its completion, they have to find it in the menu of three options. Assessment of the accuracy assumes a more comprehensive visual analysis.

S9 A child re-draws lines to the grid of nine points. The completion of the task requires a visual differentiation in a flat space.

S10 Articulation skills – the sub-test assesses whether a child is able to correctly repeat a word (without repeating the beginning, switching of syllables, the discharge of certain sounds). It does not consider pronunciation defect.

S11 The level of fine motor skills and learning ability. It is an imitation of a draft, i.e. copy. The shapes are similar to writing, they are painted on a larger scale. The performance of the child should be as close as possible to the draft – in size, shape of graphs, orientation in the space, various details.

S12 These forms verify the ability to learn. A child should remember the names of shapes and their locations.

S13 Ability to create rhymes. Child's task is to create a rhyme to a stimulus word.
Data processing methods

The obtained data was processed using descriptive methods, correlation and T-test.

4. Results and discussion

Task No. 1:

To determine the degree of correlation between the Test of risks sub-tests and between test and re-test sub-tests. Structures in TRx and TRx correlation vs. RTRx.

<table>
<thead>
<tr>
<th>Tab. 1 Correlation of individual sub-tests in TRx</th>
</tr>
</thead>
<tbody>
<tr>
<td>TR1  TR2  TR3  TR4  TR5  TR6  TR7  TR8  TR9  TR10  TR11  TR12  TR13</td>
</tr>
<tr>
<td>TR1  0.322 0.276 0.299 0.332 0.243 0.221 0.289 0.271 0.382 0.283 0.282 0.057</td>
</tr>
<tr>
<td>TR2  0.322 0.284 0.518 0.274 0.47 0.432 0.394 0.355 0.375 0.397 0.559 0.307</td>
</tr>
<tr>
<td>TR3  0.276 0.284 0.382 0.197 0.274 0.255 0.338 0.169 0.157 0.218 0.309 0.142</td>
</tr>
<tr>
<td>TR4  0.299 0.518 0.382 0.297 0.39 0.419 0.369 0.298 0.363 0.244 0.521 0.146</td>
</tr>
<tr>
<td>TR5  0.332 0.274 0.197 0.297 0.343 0.324 0.325 0.359 0.164 0.232 0.384 0.104</td>
</tr>
<tr>
<td>TR6  0.243 0.47 0.274 0.39 0.343 0.352 0.399 0.349 0.4 0.383 0.421 0.184</td>
</tr>
<tr>
<td>TR7  0.221 0.432 0.255 0.419 0.324 0.352 0.46 0.31 0.346 0.385 0.462 0.278</td>
</tr>
<tr>
<td>TR8  0.289 0.394 0.338 0.369 0.325 0.399 0.46 0.438 0.233 0.419 0.49 0.21</td>
</tr>
<tr>
<td>TR9  0.271 0.355 0.169 0.298 0.359 0.349 0.31 0.438 0.218 0.582 0.312 0.172</td>
</tr>
<tr>
<td>TR10 0.382 0.375 0.157 0.363 0.164 0.4 0.346 0.233 0.218 0.232 0.261 0.212</td>
</tr>
<tr>
<td>TR11 0.283 0.397 0.218 0.244 0.232 0.383 0.385 0.419 0.582 0.232 0.418 0.251</td>
</tr>
<tr>
<td>TR12 0.282 0.559 0.309 0.521 0.384 0.421 0.462 0.49 0.312 0.261 0.418 0.241</td>
</tr>
<tr>
<td>TR13 0.057 0.307 0.142 0.146 0.104 0.184 0.278 0.21 0.172 0.212 0.251 0.241</td>
</tr>
</tbody>
</table>

Explanatory notes to table No. 1 and 2:
Although questions TR1 - TR5 should be similarly orientated, the correlation of the data does not show it. According to the data, TR2 and TR4 question associates with each other, also question TR2 and TR12, TR12 and TR4, TR9 and TR11 and other pairs which have a mutual correlation above 0.4. The table does not show any significant structure that would emphasizes the creation of scales (e.g. creation of TR1 – TR5 scale).

The highest correlations (above 0.5) were demonstrated in these sub-tests:
- auditory analysis (first vowel in the word), and auditory distinction of similar words, auditory analysis (the first vowel in the word), and learning of writing, auditory distinction of similar words and learning of writing, visual perception and imitation of printed fonts.

Correlations (above 0.4) were demonstrated in these sub-tests:
- aural analysis -1st sound and visual distinction - rhythm, aural analysis -1st sound and visual differentiation - right-left orientation, visual distinction - right-left orientation and visual memory, visual memory and visual perception - flat, auditory distinction of similar words and visual distinction - right-left orientation, visual perception – flat and fine motor skills - imitation of fonts, intermodality - learning fonts, and visual distinction - rhythm, intermodality - learning fonts and visual distinction - right-left orientation, intermodality - learning fonts and visual memory,
- The correlation was not demonstrated between the sub-test of Rhyming and:
  - auditory analysis for the syllabus, auditory distinction of length, auditory distinction of sounds in a word, auditory distinction of similar words, visual memory, visual distinction - rhythm, visual perception - flat, articulation skills.

The results of individual sub-tests TRx – RTRx, should correlate with each other, which they do, on the diagonal there are values of correlations generally greater than 0.5. Children thus achieved similar results in similar sub-tests. The greatest differences were in the TR3 - RTR3 (Auditory distinction of sounds in the word).

**Task No. 2:**

To verify the assumption that children will improve after training of the weakened areas in preparatory classes. Comparison of the overall test re-test
Significant differences appeared for all pairs, specific values of the difference in the Mean column. For example, TR5 value minus RTR5 is an average -0.609, so there was an improvement of 0.6 points in this issue (maximum is 4, so improvement is by 0.6/4 = 0.15, i.e. 15%). Other values can be also analogically interpreted. The differences are statistically significant (last column, sig is less than 0.05) except for TR3 - RTR3 where the difference is 0.07 in the level of significance 0.07.

The differences are again around 0.5 points per question, this time all are statistically significant (sig < 0.05). However, be aware and be careful to interpret the differences in pairs TRx - RTRx are not adjusted for the age shift. Important is the stena location that is already adjusted for age. Here is an average shift of 1.16 stena, so it can be clearly said that intervention (and any other untracked factors) had a positive effect, improvement was around one stena at the appropriate age norms.
The table shows descriptive statistics for the test and re-test in stenas, you can see a shift not only in the average, but also in the percentiles. The worst 10 percent remains in the first stena, but in other percentiles the shift is visible (25-quart from the second to the third stena, 50 - median from the third to fifth, 75-quart from fifth to sixth, 90 from the sixth to eighth stena).

**Task No. 3:**

To determine whether there is a significant difference between younger and older children.

**Tab. 6** Age group 1 (up to 6) and 2 (over 6)

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std.Deviation</th>
<th>Std. Error Mean</th>
<th>Lower</th>
<th>Upper</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pair 1 Age group 1</td>
<td>V21 - V35</td>
<td>-0.951</td>
<td>1.702</td>
<td>.266</td>
<td>-1.489</td>
<td>-.414</td>
<td>40</td>
<td>.001</td>
</tr>
<tr>
<td>Pair 2 Age group 2</td>
<td>V21 - V35</td>
<td>-1.343</td>
<td>1.693</td>
<td>.207</td>
<td>-1.756</td>
<td>-.930</td>
<td>66</td>
<td>.000</td>
</tr>
</tbody>
</table>

In the category of up to 6 years the average difference in the stenas is 0.951 and it is significant. In the category of over 6 years, the average difference in stenas is 1.343 and is significant. According to the sample, it can be stated that: the intervention (and any other factors not monitored) worked better for children over 6 years.

**Task No. 4:**

To determine whether there is a difference between boys and girls.

**Tab. 7** Gender groups

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std.Deviation</th>
<th>Std. Error Mean</th>
<th>Lower</th>
<th>Upper</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pair 1 boys</td>
<td>V21 - V35</td>
<td>-1.143</td>
<td>1.958</td>
<td>.280</td>
<td>-1.705</td>
<td>-.580</td>
<td>48</td>
<td>.000</td>
</tr>
<tr>
<td>Pair 2 girls</td>
<td>V21 - V35</td>
<td>-1.143</td>
<td>1.514</td>
<td>.216</td>
<td>-1.578</td>
<td>-.708</td>
<td>48</td>
<td>.000</td>
</tr>
</tbody>
</table>

For 0 gender group the difference in the stenas is 1.143 and is statistically significant. For gender group 1, the difference in the stenas is again -1.143 and is statistically significant. We can say that the intervention worked on boys as well as on girls.

5. **Conclusion**

The use of the Test of risk of failure for reading and writing in early schoolchildren within the survey of children in preparatory classes generated the following results.

1. It found significant correlations between individual sub-tests and also between sub-tests within the initial and final diagnosis.

2. Positive development was demonstrated in their performances. In some areas, such as Auditory distinction of lengths – there was improvement of 15%. From the perspective of stena, an average shift is around 1.16 of stena, so it can be said that intervention had a positive effect, improvement was about one stena in the appropriate age norms.

3. In the category of up to 6 years, the average difference in the stenas is 0.951 and is statistically significant. In the category of over 6 years, the average difference in stenas is 1.343 and is significant. According to this sample, we can say that intervention (and any other factors not monitored) worked better for children over 6 years.

4. Intervention worked on boys same as on girls.

The objectives of the research were reached using the Test of risk of failure for reading and writing in early schoolchildren. Re-test (after 6 months) verified the effectiveness of individualized care in a preparatory class in terms of development and maturity of the individual perception - cognitive and motor functions, which are a prerequisite for reading and writing.

Development of perception depends not only on the maturation of the CNS, but it is also conditioned by stimulation of the external environment (quality and quantity of stimuli), which is needed especially for children...
from socially disadvantaged backgrounds. Preparatory classes are proven to help these children in their preparation for the start of primary school.

As stated by Šikulova, Brtnova - Cepickova (2010), the aim of the preparatory classes is to systematically prepare children from socially disadvantaged backgrounds for a smooth integration into the educational process from the beginning of schooling, and to prevent them from possible failures in the beginnings, which could endanger their further education and their prospects in future life.

6. References


