Social Inclusion Project in Bulgaria

Baseline Study

Field survey - Tests with children

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Prepared for: THE WORLD BANK
Working for a World Free of Poverty

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As part of the Baseline Study Project the Tests with Children were conducted within the Field (Typological) Survey.

They had to collect quantitative information on the development of children from vulnerable groups aged from 3 to 7 years in order to provide baseline and projected values of the following Project Outcomes Indicators:

- Cognitive development and school readiness scores, including:
  - memory, verbal and visual-motor skills development; copying scores (age 3-5);
  - fluency in Bulgarian (age 5-6);
  - achievement test results, including reading tests (age 6-8);
- Social skills (age 5-6)
- Anthropometric measures and overall appearance based on measurement and observations registered by the interviewers .

RESEARCH METHODOLOGY AND PROCEDURE

- As defined by TOR the Field survey collected information from 1400 households in total, split between three groups of municipalities – 500 in each of the two Treatment groups of municipalities and 400 – in the Control group.

- Sampling procedure was carried out in the following steps:

Step 1: Sampling of municipalities of the field survey

- Sampling was based on the list with 3 groups of municipalities, provided by MLSC.

- Of them were selected:
  - In the Treatment group - 27 municipalities and 500 units were distributed based on residence place size;
  - In the Treatment group B –20 municipalities and 500 units were distributed based on residence place size;
  - In the Control group – the sample of 400 units was spread around across all 27 municipalities.

- Another quota criteria was also applied to the sample design: typological split by children age group so as to achieve 150 respondents in the age groups of 3, 4, 5 and 6-7 year olds in each of the two Treatment groups and 100 respondents in the Control group.

- Additionally supervisors and interviewers were required to consider split by criteria for vulnerability of the households, for example - unemployed parents, single mother, the mother / parents of minors, children with parents in prison, under-age mothers, etc.

Step 2: Identification of the target units /households of vulnerable families

- The sampling lists/data-base was elaborated from the lists of families from vulnerable social groups provided locally by municipalities' administrations municipalities or the Directorates of the Social Assistance Agency. Contacts lists were based on lists of families, who have applied for welfare or children who were on a report by social workers.

- In case when vulnerable household lists were not provided or were not sufficient for recruiting the target number of the households, snow-ball approach was applied – mostly relying on local social workers contacts and acquaintances.
- Under certain circumstances local leaders or local well accepted social workers were asked for assistance.

Step 3: Identification of the target respondents

- When entering into a household the interviewers additionally screened the household for eligibility regarding:
  - availability of child at certain age
  - availability of the main child carerer, who would agree to be interviewed and the target child to be tested.

METHODS OF COLLECTING INFORMATION

- Interviews in the household were conducted by two interviewers with appropriate education:
  - One interviewer conducted an interview with the parent or other person who takes care of the child. He/she also fill household observation form
  - The second interviewer (a psychologist or preschool teacher) conducted a test with the target child. He/ she also registered in the questionnaire assessments on the general condition of the child and his anthropological parameters.
- The anthropological parameters were measure with unified scales and meters and interviewers were trained by a pediatrician instructor how to take standard measures of the child.
- Both parent and child receive gifts as incentives.
- Test with the child was held only if the parent gave a permission to interview the child at his presence.
- In total the paired interview duration was from one to one and a half hour.

SPECIFICITY OF THE APPROACH TO THE CHILDREN

- While the interview with the adult started, the children interviewer tried to get closer to the child-respondent as he/she was trained to do – using appropriate play techniques.

- If the child felt trust in the interviewer and was ready to start, the test was conducted simultaneously with the adult interview. If not – the child was questioned after and helped by the parent /other relative.

- In case the child was not able to understand the questions because of not knowing Bulgarian language, the interviewer was supported by a parent, another relative or interview mediator in the translation of into Bulgarian. The spoken language, used for every questions, was registered, which was important for evaluation of 5 – 8 year old children readiness for school.

STRUCTURE OF THE TEST WITH CHILDREN /1

- The interview consists of 4 parts:

  1. In-home ECD test of the target children, from the targeted municipalities from Treatment Groups A and B as well as in the Control Group;
  2. Synthetic assessment;
  3. Measurement of children anthropometric indicators;
  4. Household observation.

- The structure of the child interview was as follows:
  - Presentation and explanation
  - Screening Part
  - General questions on lifestyle and attitudes
  - ECD test
  - Synthetic estimation
  - Anthropometric indicators measurement
  - Demographic part

- Each one test consists of the following parts:
  - Questionnaire – a form where the interviewer fills the recruited child answers
  - Show card
  - Form for child work – drawings, copying, etc.

The interviewer used the relevant to the questions show-cards. He gave the fill-in form to the child only when the child was required to write, draw, connect or colour. These fill-in forms were attached to the corresponding questionnaire of the child.

STRUCTURE OF THE TEST WITH CHILDREN /2

- The test for children 5 years old includes an additional block studying the level of social skills and attitudes.

- At the end of each test child anthropometric measures were taken by the child interviewer:
  - Weight (with standard scales)
  - Height (with standard tailor's meter)
  - Head and chest measurement (standard tailor's meter)

- Both interviewers made an observation, which were registered in the questionnaires:

- The parent interviewer observed household as environment in which grows the child /children and then wrote down in the questionnaire. Household observation and a simple inventory check was carried out in order to evaluate the living conditions of the children, availability of space for sleeping and play, conditions for creating eating and hygiene habits, etc.
- The child interviewer was focused on observing child: appearance, body posture and movement, position of the writing hand, emotional state

- For interviewing children in-home, professional psychologists and pre-school pedagogues were recruited – part of whom were from the network of Market LINKS, and part - additionally selected. All were trained by specialists in ECD and professional researchers.

- The ECD in-home test duration was up from 30 to 40 minutes.

- The field survey completed within the framework of the SIP Baseline Survey appears to be the first attempt and a probing vehicle to set national ECD standards basic parameters of the Intermediary and Final SIP Impact Evaluation. The survey is one of the biggest among children in Bulgaria and the first one among children from vulnerable households testing altogether cognitive skills, social skills, physical health and well being conditions, and school achievement.

- As national standards for ECD including school preparedness and child wellbeing still do not exist in Bulgaria, as well as standardized instruments for their measurement, the Consultant's experts team designed the ECD test for children (3-7 years) specially for the purposes of Baseline Study.

- The consultant's expert team elaborated children tests with following content:
  - Age 3-4 - Cognitive development: memory, verbal and visual-motor skills development; copying scores; Physical health and well being: anthropometric measures and nutrition; and General physical conditions.
  - Age 4-5 - Cognitive development: memory, verbal and visual-motor skills development; copying scores; Physical health and well being: anthropometric measures and nutrition; and General physical conditions.
  - Age 5-6 - Fluency in Bulgarian; Social skills: interaction with children of different background, responsibility and respect, approaches to learning, pro-social and helping behavior; Physical health and well being: anthropometric measures and nutrition; and General physical conditions.
  - Age 6-8 - Achievement test results, including reading tests; Physical health and well being: anthropometric measures and nutrition; and General physical conditions.

- The tests were developed on the basis of socio-psychological and pedagogical methods for diagnostics. Their differentiation was directed towards exposition of significant personal forms which are in correlation with the conditions of the social environment. The elaborated tests allow the assessment of the importance given by certain social factors, including education and training of the personal formation and development of children from 3 to 7 years old.

- Verbal and non-verbal (visual-driven) methods were used to structure the tests. In the first case, both solving the problems and giving answers are mediated by the speech activity of the studied child in the field of memory, imagination, pivot brain functions, social significance of the chosen answer, etc. In the case of the non-verbal methods, the focus is on actualization of the perceptual and motor functions.

- The tests explored the formed personality features, psycho-social competence, level of intellectual development, and more generally obtained information about the child's social and family environment, peers, and so on (only in the tests of 5 year olds).

- For the measurement and assessment of the social, cognitive and other studied characteristics, a number of already known and used abroad techniques and methods were identified, explored, pre-tested and incorporated in the tests, such as Achenbach Child Behavior Checklist; Early Development Instrument; Renee Gill' s and others.

- The tests for cognitive development of children from 3 to 7 years were based on the following documents:
  - State education requirements for pre-school and education
  - Tests for pedagogical and psychological diagnostics of Prof. Dr. Dina Bateva, Doc. Dr. Teodor Popov, Dr. Eli Draganova
  - The test for diagnostics of the readiness of children for learning is based on tests from Prof. Georgi Bijkov and Doc. Feliyanka Stiyanova.

- The above mentioned tests study particular aspects of cognitive development of children. All of them require their execution to be done at kindergarten or school environment by professionally trained pedagogues.

- The most well known and used in Bulgaria in the pre-school education at present is the standardized “Test for diagnostics of the readiness of children for school” by Prof. George Bijkov and Doc. Feliyanka Stoyanova, which is primarily used for elaboration of the school readiness modules of the 6-8 y.o. test.

- Successful execution of children tests as part of the Field Survey in-home interviews, especially done in specific conditions in which part of vulnerable families live, required significant adaptation and additional elaboration of the tests by ECD specialists and experts in the field of testing and standartization.

The tests were based on the following criteria according to the child age specificity:

3-4, 4-5:

Assessment of the cognitive development of children: memory, speech and visual-motor skills and ability to reproduce

- For the assessment of the cognitive development of children from 3 to 5 years of age and in particular memory, speech and visual-motor skills and ability to reproduce the following criteria were applied:

- The child:
  - calls his/her name and the names of loved ones, familiar objects, toys, actions;
  - answers questions;
  - describes a painting;
  - talks with appropriate words and short sentences;
  - constructs simple sentences of practical and visual base;
  - uses simple extended sentences;

3-4, 4-5 year olds:

In terms of logic and memory the child at this age is also supposed to:

- recognize and forms a singular and plural of the noun names;
- coordinate the adjectives and the nouns in gender and number;
- understand and includes in his/her speech different words;
- select word definitions;
- count from 1 to 5;
- compare objects by length and height;
- compare the amount of objects;
- express quantitative characteristic with numbers and figures to 5;
- draw with straight lines and curves;
- represent the structure, shape, parts and colour of objects;
- apply techniques of construction;
- control his/her hand and makes a stable straight line within a limited section

- Taking into account the dynamics of child growth at this age group, two different tests for this age group were developed, respectively for children from 3 to 4 years and children from 4 to 5 years.

5-6 year olds:

Assessment of the knowledge of Bulgarian language

- To asses the knowledge of Bulgarian language by children aged 5 years, it was supposed that the child meets the following criteria:
  - knows basic information about himself/herself and can tell about himself/herself;
  - retells a familiar story;
  - completes the narrative and story;
  - is asking questions and maintains a conversation;
  - makes a story using a picture;
  - uses sophisticated compound-composed and complex sentences;
  - understands the polysemy of the words and uses in his/her speech synonyms, antonyms and homonyms;
  - uses properly singular and plural of nouns;
  - uses words and phrases, taking into account the context;
  - recognizes practically the present, past and future tense;
  - counts from 1 to 10 in ascending and descending order;
  - establishes equality and inequality of multitudes/sets;
  - understands relationships more, less and equal;
  - follows a three step commands;
  - groups, compares and arranges objects according a certain sign;
  - articulates well (speaks and separates) different words;

- The selection of questions considered the Bulgarian State educational requirements for knowledge of Bulgarian language at this age group.

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Age 5-6:

Assessment of social skills and attitudes of children

- Social skills of 5-6 y.o. children were assessed by using two main methods:
  - With direct questions regarding social attitudes concerning friendship, relationships with others, kindergarten
  - Interviewer's evaluation of the child's behavior during the test

- In the elaboration of this test were used methods and approaches applied in Achenbach Child Behavior Checklist; Early Development Instrument; Renee Gill's test studying the social adaptability of the child, his/her interpersonal relations and features, his/her perceptions of the inner-family relations and some characteristics of the child's behaviour.

Age 6-8:

School readiness: achievement test results, including reading tests

- The test was designed so as to measure whether the child meets the following criteria for school readiness:

- The Child:
  - asks questions and maintains conversation
  - makes a story based on a picture
  - uses compound and complex sentences
  - identifies practically present, past and future tense
  - uses words and phrases, taking into account the context
  - recognizes and forms singular and plural of the noun names
  - determines the sound at the beginning and end of the word
  - counts from 1 to 10 in ascending and descending order
  - establishes equality and inequality of multitudes/sets
  - recognizes and names the signs for quantitative relations and mathematical operations addition and subtraction
  - understands relationships more, less and equal
  - groups, compares and arranges objects according a certain sign
  - is able to reproduce curved line or elements according to a given pattern
  - fulfils thematic expression for drawing, appliquéing and moulding
  - knows the basic expressions for drawing, moulding and appliquéing: composition, colour, shape, special location

Performance Evaluation

- The scales for most answers in all tests are three-degree ones – „completely covers the criterion-3" and „partially covers the criterion-2", "doesn't cover the criterion-1". The calculated mean value over 2 means that the child has passed successfully the criterion. When the answer is dichotomous, the value 3 is given for "yes", 1 – for "no".

- The final score is based on mean values as combination of scores of the child answers and the mean scores of the interviewer's synthetic evaluation.

- Tests for each age group has its own criteria for overall assessment of passing or not successfully the test.

- Usually the tests' pass level is positioned between 50 and 75% of the correct answers. It depends mostly on the test's design, purpose and expectations. The experts' team fixed it on the lowest possible level (middle of the scale) as it will serve in a more sensitive way the next SIP evaluations. The final results for each one indicator are presented in two ways:
  - as percentage of children in particular age who passed the test
  - as mean value of all children tests for particular age

- For the purposes of the following SIP evaluations the experts' team finds the mean value better than the percentage of children passing the tests. It will show whether the mean ECD test values go up, which will be a sign for SIP success, or they go down and further actions will be needed in order to make the SIP successful.

- The level, where a child passes an ECD test is approximately above the median value (the middle of the scale) as follows:
  - ⇨ age 3-4 cognitive development – 55 points (out of 90)
  - ⇨ age 4-5 cognitive development – 74 points (out of 117)
  - ⇨ age 5-6 fluency in Bulgarian – 51 points (out of 96)
  - ⇨ age 5-6 social skills – 15 points (out of 30)
  - ⇨ age 6-7 school readiness – 62 points (out of 93)

SUMMARY OF RESULTS

Achievement test results, including reading tests (Age 6-7)

- On average 42% of the 6 and 7 year olds pass the test for School achievement.
- The scores of the children in the two Treatment groups are very close (42% in group A vs. 46% in group B).
- Control group scores lower than the two groups with about 8 – 10%: 36% of the children pass the school achievement test.
- The mean value of Achievement test designed for 6-7 y.o. group show 58.5 points with 62 points as pass level. Children in the Treatment group A performed with 58.6 points while children from Treatment group B performed 60.1 points. Children from Control group have 56.5 as mean value.

There are other two important indicators which should be taken into consideration when evaluating children performance and their readiness for social inclusion at school:

Knowledge of Bulgarian language

- This indicator was registered with a separate variable in all tests.
- The share of children not knowing Bulgarian shows tendency of gradual decrease with age growing.
- 29% of 3 y.o. children do not speak or do not understand Bulgarian, while among 4 y.o. children they are 23%, and they are 18% of the 5 y.o. and they are 13% in 6 y.o.
- There appears to be a statistically significant difference between the Treatment groups by that indicator only among 3 y.o. children: 19% in group A vs. 42% in the group B couldn't understand Bulgarian during the test.

Enrollment at a kindergarten

- The share of children enrolled at a kindergartens and attending that on every day basis grows with age of the children: 29% of 3 y.o. 37% of 4 y.o., 54% of 5 y.o. and 65% of the 6-7 y.o.

Anthropometric and motor indicators (Age 3-7)

- The tested anthropometric indicators show that majority of children of all four age groups meet the standards of weight and height: about 90% for weight and over 85% for height are in norm. There are no statistically significant differences by groups of municipalities.

- The interviewers evaluations of the children body posture while walking and standing still and in sitting position putting feet in the right way when walking indicate normal physical development in about 90% of the children, with no statistically significant difference between the groups.

- Less children of the 6-7 year olds have normal position of the hand when writing – 44% entirely correct and 20% almost. There appear to be statistically significant differences by this indicator between the scores of the children in the Treatment group A and the Control group.

Overall impressions

- On the whole, overall impressions of the interviewers show that the majority of children – over 80% had good appearance - wore *comfortable and clean clothes and shoes appropriate for the temperature in the room and with appropriate size. The personal hygiene of the child are perceived as good in about two thirds of the children*..

- About two thirds of the children are perceived as calm, cheerful and sociable (about 75%), while as aggressive ones only 7-8%.

- In about 10% of the children interviewers registered some visible deviations, indicative for availability of disability.

6 YEARS OLD CHILDREN

COGNITIVE KNOWLEDGE AND DEVELOPMENT TEST

	Scale: **1** – Doesn't cover the criterion, **2** – Partially covers the criterion , **3** - Completely covers the criterion
What do you see in the picture?	1 - No answer, 2 - few words, 3 - many words
Which season is depicted?	1 - No answer, 3 - Winter
How did you recognize the winter?	1 - No answer, 2 - Indicates one, 3 - Describes in detail
Which season is now?	1 - Not true, 3 - True
Which season comes after summer?	1 - Not true, 3 - True
I will start a sentence and you will finish it.	1 - Does not indicate, 2 - 3 correct answers, 3 - 4,5 correct answers
Game: I will say a word about a subject and you will tell me the same word for two subjects. For example: *One jar, two jars.*	1 - Does not indicate, 2 - 3 correct answers, 3 - 4,5 correct answers
Let's continue the game - *One jar, many jars* .	1 - Does not indicate, 2 - 3 correct answers, 3 - 5 correct answers
Asking question. For example: Which is the sound your name begins with?	1 - Does not indicate, 2 - 3 correct answers, 3 - 5 correct answers
Look at the pictures. Which of the objects is named with a word that begins with the sound "g"?	1 - No, 3 - 3 right answers
Help the bird to reach its nest without going out of the path and without stopping.	1 - Dashed and gone out, 2 - Dashed or gone out, 3 - Not dashed and not gone out
Try to redraw each of the drawn figures at the place next to it.	1 - No, 2 - 2 correctly redrawn, 3 - 3 correctly redrawn
Continue without going out of the outlines of the lines and squares.	1 - No, 2 - 2 correctly written, 3 - 3 correctly written
I will say a sentence and you will turn it into a question. For example: Petar gets up early. - Does Petar get up early?/ When Petar gets up?	1 - No, 2 - 2 sentences in a question, 3 - 3 sentences in a question
What did you do yesterday?	1 - No, 3 - responses in past time
What do you want to do tomorrow?	1 - No, 3 - responses in future time
How far can you count?	1 - No, 2 - with mistake, 3 - up to 20 without mistake
Now try in the reverse order from 10 to 1.	1 - No, 2 - with mistake, 3 - without mistake
Arrange the towers by height as you start from the lowest.	1 - Not true, 3 - True
Which ball are more - the blue or the yellow ones.	1 - The yellow ones, 3 - The blue ones
Please, read me the sentences. Ivan is already a student/ Grandmother has many grandchildren/ I love to drink juice very much.	1 - No, 2 - 2 right, 3 - 3 right answers
Which are the written words? Copy then (chicken, airplane, vase).	1 - No, 2 - 2 right, 3 - 3 right answers
Draw a house, man and tree..	1 - Poor, 2 - Good, 3 - Excellent

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Criteria	All N=350	A Group N=125	B Group N=125	Control N=100
What do you see in the picture? ●	2,07	1,97	2,18	2,06
Which season is depicted?	2,29	2,28	2,26	2,34
How did you recognize the winter?	2,16	2,16	2,15	2,18
Which season is now?	1,94	1,91	1,98	1,94
Which season comes after summer?	1,6	1,62	1,62	1,54
I will start a sentence and you will finish it.	1,97	1,96	1,98	1,95
Game: I will say a word about a subject and you will tell me the same word for two subjects. For example: One jar, two jars.	1,96	1,99	1,98	1,88
Let's continue the game - One jar, many jars.	1,82	1,84	1,83	1,78
Asking question. For example: Which is the sound your name begins with?	1,52	1,57	1,58	1,4
Look at the pictures. Which of the objects is named with a word that begins with the sound "g"? ■	1,93	1,98	2,07	1,7
Help the bird to reach its nest without going out of the path and without stopping.	2,39	2,36	2,46	2,36
Try to redraw each of the drawn figures at the place next to it.	1,49	1,46	1,59	1,41
Continue without going out of the outlines of the lines and squares.	1,77	1,7	1,91	1,69
I will say a sentence and you will turn it into a question. For example: Petar gets up early. - Does Petar get up early?/ When Petar gets up?	1,47	1,45	1,54	1,43
What did you do yesterday?	2,19	2,18	2,18	2,22
What do you want to do tomorrow?	2,15	2,17	2,25	2
How far can you count? ■	2,01	2,01	2,12	1,88
Now try in the reverse order from 10 to 1.	1,59	1,66	1,63	1,46
Arrange the towers by height as you start from the lowest.	2,18	2,12	2,2	2,24
Which balls are more - the blue or the yellow ones.	2,43	2,49	2,38	2,44
Please, read me the sentences. Ivan is already a student/ Grandmother has many grandchildren/ I love to drink juice very much. ♦	1,19	1,27	1,18	1,1
Which are the written words? Copy them (chicken, airplane, vase).	1,49	1,53	1,54	1,39
Draw a house, man and tree.. ■ ♦	1,77	1,84	1,84	1,58

Statistically significant differences: A vs. B ● B vs. C ■ A vs. C ♦

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Scale: **1** – Doesn't cover the criterion, **2** – Partially covers the criterion , **3** - Completely covers the criterion

Aggregated scores	All N=350	A Group N=125	B Group N=125	Control N=100
Uses compound and complex compound sentences ■	1,72	1,71	1,82	1,6
Understands the meaning of words	1,87	1,86	1,94	1,78
Practically distinguishes present, past and future time	2,01	2,02	2,02	1,96
Reproduces by memory words and sentences	1,83	1,82	1,89	1,77
Has logical and associative thinking (makes interrelations)	1,76	1,72	1,82	1,72
Understands and includes different words in the speech ■	1,92	1,96	2	1,76
Answers questions, understands and carries out set tasks	2,09	2,08	2,16	2
Articulates well (pronounces and separates) differents words	2	2,04	2,02	1,93

Aggregated scores	All N=350	A Group N=125	B Group N=125	Control N=100
Below the standrad	13,7%	12,8%	14,4%	14,0%
Average	40,0%	40,8%	36,0%	44,0%
In standard	46,3%	46,4%	49,6%	42,0%

Statistically significant differences: **A vs. B** ● **B vs. C** ■ **A vs. C** ♦