REFLECTION OF THE PILOT STUDY OF SELECTED FIELDS OF THE CZECH FRAMING PROGRAM FOR PRE-SCHOOL EDUCATION

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Summary: *This article presents results of a dissertation pilot study. This pilot study deals with the verification capacity of the research implementation, which is going to be used with the aim to check the communicative skills of children in pre-school education, which is a part of my dissertation research work.*

Key words: *Pilot research, pilot research stages, research implementation, statistical data processing, communicative competences, pre-school education, Czech Framing Program for Pre-school Education*

1 Introduction

The concept of pre-school education is based on the same principles as other branches and levels of education and it has objectives in common. It focuses on the fact that a child should have been acquiring the basic key skills principles since early age. Thanks to that children should obtain preconditions for their lifelong education, which enable them to apply their knowledge in the society more reliably and easily. (1) In the curriculum documents the key skills are generally defined as a set of presumptive knowledge, skills, abilities, attitudes, values, which are important for personal advancement and use of each individual. It produces a target output, which should be reached by students during each educational phase.

The mandatory curriculum for the firsts phase is represented by the Czech Framing Program for Pre-school Education (2004). By means of this program the systematical pre-school education should be guaranteed. With the adoption of the new curriculum we begin to put the emphasis on the verification of the Framing Program via research.

Considering the topic of my dissertation, in the research I deal with the verification of the communicative skills in the pre-school educational phase.

2 Pilot research

Since September 2007 I have been engaged in a pilot research, which is an essential component for the verification of capacity of a research implementation, which is going to be used in my dissertation called "Bases of communicative competences and their significance in the beginning of school education" The objective of my dissertation is to find out what is the level of communicative competences of children before they start to attend primary school and to compare the actual situation with expected outputs and communicative competences, which are determined by the Czech Framing Program for Pre-school Education.

The aim of this pilot research is to find out whether the proposed research implementation is appropriate for the examination of the communicative competences field and can provide results which can be used further. The verification of mathematical-statistic procedure for the processing of the acquired data was also a part of this pilot research.

The pilot research outcomes are:

- A compiled set of tasks for children of pre-school age and a supplement containing evaluation of the level which was reached in this studied field.
- An observation sheet
- Mathematical-statistic procedure for the processing of the acquired data

Pilot research stages

Time Period	1	2	3	4
A) Assessment of research objective	———			
B) Preparation of research information	———	———		
C) Research method preparation	———	———		
D) Data collection and processing				
E) Data interpretation			———	———
F) Writing of research report	———	———	———	———

(Caption 1 – 9/2007, 2 – 10/2007, 3 – 11/2007, 4 – 12/2007, 1/2008)

A) Assessment of research objective

Research program	Preparation and verification of the research implementation The set of tasks in the observational sheet is chosen in a specific way to be appropriate for the check of children's communicative competences
Definition of basic terms	Competence, pre-school age, nursery school
Research sample	15 children in the age of 5–6 before the start of their primary school attendance
Data collection period	November and December 2007
Circumstances under which the research takes place	Common everyday situations in the kindergarten attended by the respondent

B) Preparation of research information

In this pilot research accessible up-to-date sources of information were used.

C) Preparation of research method

The pilot research is a quantitatively orientated. As research methods, observation, scaling and interview were used.

Observation was in this case represented by monitoring children's activities, recording these activities, their analysis and evaluation. The observation of activities was direct as well as indirect. The indirect observation records were provided during the direct observations for the sake of possible data complementation, which could escape an observer's attention. The observation was intentional and systematic. It was based on thoroughly prepared focus on a child's behavior in given situations. The activities and situations were started on purpose by means of control over the child's play activities that enabled a faster and more flexible detection of important information. The children were observed during their individual activities and during their interviews with the observer. Mostly didactic games (cloze, jigsaw, activities with material, working sheets with didactic tasks etc.) were used.

The **interviews** were unstructured; the responses were being recorded in the observation sheets.

For the evaluation of the children's communicative competences the method of **scaling** was used; a scale was defined separately for each item according to

the need of evaluation details. All the outcomes had to be consulted with the teacher in each kindergarten. It was also necessary to re-verify every difference from the child's usual behavior because the conclusion of this observation should not be early and definite.

Research implementation

The verified research implementation is represented by a set of task related to communicative competences which are based on the educational content of the Czech Framing Program for Pre-school Education. This task set is included in the projected observation sheet in which the level of pre-school children's communicative competences was recorded. This was done by the means of scaling. The observation sheet was constructed on the basis of the pre-school education materials.

The observation sheet itself is divided into the following areas: formal speech advancement, oral speech, auditory perception and distinction, visual perception and distinction, writing and reading skills. The observation sheet also contained supplementary data about each child. For all of the above-mentioned areas outputs were developed which are expected from children at the end of the pre-school education period. The expected outputs which are defined in the observation sheet correspond with the expected outputs given in the Czech Framing Program for Pre-school Education. Each of the expected outputs is appointed to learning tasks, thanks to which a level of managed output can be find out. The learning tasks were defined in way to be appropriate to the age of the children and to be motivational enough in order to reach the appointed goal. The learning tasks were chosen with the purpose to get as much information as possible only with the help of few tasks. The observation sheet also mentions the sources of the applied learning tasks. The last part of the observation sheet consists of a scale rate for each of the expected outputs.

D) Data collection and processing

The data collection took place during November and December 2007 in a kindergarten in Olomouc.

The statistical data processing was consulted and later provided by RNDr. Milena Kršková from the IT Center, Palacký University, Olomouc.

E) Data interpretation

As the pilot research did not take place in the time before the end of the children's pre-school education (i.e. May, June) but at the beginning of the last pre-school education year (November, December) it is not yet possible to compare the below-mentioned results of the pilot research with the expected outputs that should be achieved by the children by the end of their pre-school education. As mentioned above, the pilot research should query possibilities of utilization of the research implementation for the check of the children's communicative competences and point out the method of statistical data processing.

The observation sheet contains 5 areas (A1–A5) including all the expected outputs.

A1) formal speech advancement
A2) oral speech
A3) auditory perception and distinction
A4) visual perception and distinction
A5) writing and reading skills

The pilot study observation group was small and that is why the statistical data processing was done only on the level of these particular five areas.

The sectional expected outputs from the observation sheets were put together (ratings were summed up); according to the responses in the given areas, the responses A1, A2, A3, A4, A5 were formulated.

To enable a comparison of the successfulness among areas, the gained points had to be transformed into percentage from the maximum available number and the calculations were done with these data.

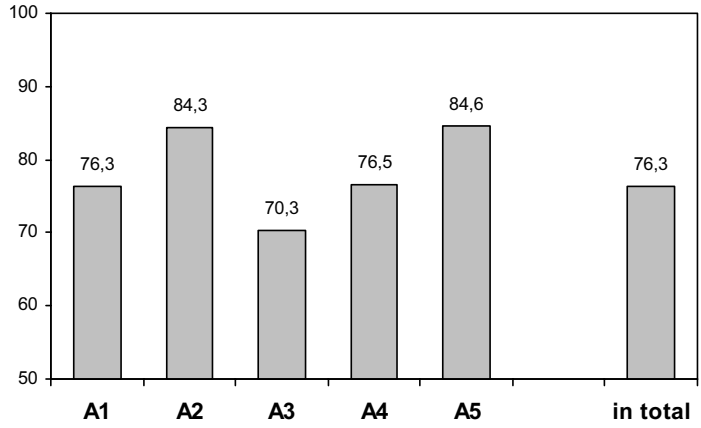
For each area the basic descriptive characteristics were calculated. Both on the level of the gained points and the percentage (see Table 1). The average level of the children's communicative competences in each area is demonstrated in a graph (see Graph 1)

Table 1
Basic describing characteristics.

	N valid	*Average*	*Median*	*Modus*	*Modus frequency*	*Minimum*	*Maximum*	*Divergence*
A1	13	9.9	10.0	13.0	4	3	13	3.2
A2	12	51.8	54.0	multiple		36	62	6.8
A3	12	35.2	36.5	multiple		23	50	8.0

A4	13	13.0	13.0	13.0	5	10	15	1.7
A5	13	3.4	4.0	4.0	7	1	4	0.9
points	12	113.9	115.5	multiple		76	144	16.7
A1 percent	13	76.3	76.9	100.0	4	23.1	100.0	24.4
A2 percent	12	84.3	85.9	81.0	2	61.0	93.9	9.4
A3 percent	12	70.3	73.0	multiple		46.0	100.0	16.0
A4 percent	13	76.5	76.5	76.5	5	58.8	88.2	9.9
A5 percent	13	84.6	100.0	100.0	7	25.0	100.0	21.7
percent	13	76.3	76.9	100.0	4	23.1	100.0	24.4

Graph 1
Average level in each area (per cent)



The comparison was carried out among the areas as well as with the Czech Framing Program for Pre-school Education. Because the sample was small, the non-parametrical methods were used (parametrical only as an illustration)

The comparison with the Czech Framing Program for Pre-school Education was calculated with the help of the Wilcoxon signed-rank test (see Table 2). In

all the areas the statistical difference is on 5 % significance level (i.e. $p < 0.05$). Alternatively also the t-test for the comparison with the reference value was used.

Table 2
Wilcoxon signed-rank test. These tests are on the significance level $p < .05000$.

	n	*T*	*Z*	*Level p*
A1 & A1max	13	0	2.67	**0.008**
A2 &A2max	12	0	3.06	**0.002**
A3 &A3max	12	0	2.93	**0.003**
A4 &A4max	13	0	3.18	**0.001**
A5 &A5max	13	0	2.20	**0.028**

(max = point maximum = Czech Framing Program for Pre-school Education level)

If we compare the areas among themselves again with the help of the Wilcoxon signed-rank test (see Table 3) or with the help of the t-test, we can see significant differences between A2 and A3, A2 and A4 or between A3 and A5.

Table 3
Wilcoxon signed-rank test. These tests are on the significance level $p < .05000$.

	n	*T*	*Z*	*Level p*
A1pct & A2pct	12	28	0.86	0.388
A1pct & A3pct	12	20	1.16	0.248
A1pct & A4pct	12	31	0.63	0.530
A1pct & A5pct	12	16	1.17	0.241
A2pct & A3pct	12	6	2.59	**0.010**
A2pct & A4pct	12	12	2.12	**0.034**
A2pct & A5pct	12	34	0.39	0.695
A3pct & A4pct	12	20	1.49	0.136
A3pct & Apct	12	9,5	2.09	**0.037**
A4pct & A5pct	13	25	1.43	0.152

But if we survey the reciprocal relation among the particular areas with the help of the correlation dependence, we will find out a significant relation between A1 and A2, A1 and A4 (see Table 4). The Spearman's rank correlation coefficient was used here.

Table 4
Spearman's correlation. These tests are on the significance level p < .05000.

	A1	A2	A3	A4	A5
A1	1.000	**0.704**	0.283	**0.709**	0.203
A2	**0.704**	1.000	0.286	0.218	0.353
A3	0.283	0.286	1.000	0.390	0.378
A4	**0.709**	0.218	0.390	1.000	0.262
A5	0.203	0.353	0.378	0.262	1.000

The results were classified in a Microsoft Office Excel file. For the calculations statistical program: StatSoft, Inc. (2001) STATISTICA Cz [Software system analysis], version 6. Www.StatSoft.Cz was used.

The response frequency was calculated by the SPSS program, version 12.0.

F) Writing of research report

The pilot research is completed with written information about its development and results in the form of a research report.

3 Conclusion

The research implementation is suitable for the check of communicative competences of the pre-school children. The observation sheet is appropriately divided into five areas focused on communicative competences. The tasks in the observation sheet are chosen in a way to obtain required information.

The statistical processing of the collected data leads to a finding what level of communicative competences children have reached before attending primary school, and it also leads to the comparison between the actual state of this level and the expected outputs according to the Czech Framing Program for Pre-school Education.

The mathematic-statistical procedure was verified. It is possible to use the Spearman and Pearson's correlation, the Wilcoxon signed-rank test and the t-test for dependent samples, the statistical program StatSoft, Inc. (2001). STA-

TISTICA Cz [Software system analysis], version 6, the SPSS program, version 12.0

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