

THE MATHEMATICAL INTERPRETATION OF THE PERCEPTION OF PARENTS AND DIDACTIC STAFF ON THE IMPLEMENTATION OF ZERO-GRADE LEVEL

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Abstract. *The beginning of the zero-grade experiment consists in the fact that some parents want to register their children early in school because they feel they are ready. Thus, according to the Education Law of 2010, was approved the passing of the preparatory class to the primary school and, implicitly, its transformation into the zero-grade. The implementation of the preparatory class aims to strengthen the knowledge already acquired by children, to socialize and to adapt to novelty. This paper aims to determine the degree of satisfaction of the parents and teachers involved in the proper development of the teaching activities specific to the preparatory class at the Ocnita Gymnasium School.*

Keywords: *customer satisfaction, educational marketing, educational services.*

1. INTRODUCTION

The inclusion of the preparatory class in compulsory education has been previously established by a number of normative acts approved and promoted by MECS together with the implementation of projects aimed at increasing the quality and access to education of all children from early ages.

We can say that any change that takes place in the system takes time to be assimilated. In general, the concept of a preparatory class is accepted by most parents and teachers, highlighting its advantages for the child and society.

2. THE PARENTS AND TEACHERS OPINIONS FOR THE IMPLEMENTATION OF THE ZERO-GRADE PROJECT

Teachers and parents of the children from the Ocnita Gymnasium School were interviewed, involved in the good conduct of the zero-grade activity. The purpose of opinion polls was to identify their degree of satisfaction.

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2.1. *THE QUANTITATIVE RESEARCH ON THE DEGREE OF SATISFACTION OF THE PARENTS INVOLVED IN THE PROPER CONDUCT OF THE ZERO-GRADE ACTIVITY*

According to the thematic goal of the research, the survey had as objectives:

1. determining the degree of efficiency of zero-grade implementation in primary education (Question 1);
2. identifying how to support school activities in good order (Question 2);
3. determining the frequency of attendance at school sessions and ways of communicating with the teacher (Questions 3 and 4);
4. establishing the necessary conditions for the optimal operation of the zero-grade (Question 5);
5. identifying the load level of the school curriculum for children (Question 6);
6. learning about parents' perceptions about pupil readiness and the level of satisfaction with the information received on school activity (Questions 7 and 8);
7. establishing the level of satisfaction for the activities of the teachers, the conditions for their deployment and identify other activities by parents who wish to be established in the school curriculum (Questions 9-11);
8. determining the grade of child assessment by the teacher in zero-grade (Question 12);
9. identifying the level of cleanliness and safety for children within the school (Questions 13 and 14).

The central hypothesis "Parents are very much satisfied with the development of the activity in the zero-grade and its implementation in the primary education".

In order to achieve the established objectives, the following hypotheses were formulated:

1. Parents believe that the implementation of the zero-grade in primary education is very effective.
2. The student is largely trained in the zero-grade.
3. Parents are very satisfied with the activities and information received from the teachers.

2.2. *THE QUANTITATIVE RESEARCH ON THE DEGREE OF SATISFACTION OF THE TEACHERS INVOLVED IN THE PROPER CONDUCT OF THE ZERO-GRADE ACTIVITY*

According to the thematic goal of the research, the survey had as objectives:

1. determining the degree of efficiency of zero-grade level implementation in primary education (Question 1);
2. establishing the conditions for the optimal zero-grade functioning (Question 2);
3. identifying the filling in the school curriculum for children (Question 3);
4. determining the degree of pupil training in the zero-grade in relation to the extent to which the teaching materials used in the teaching of the course correspond to the teaching requirements (Questions 4 and 5);
5. determining parenting frequency status at school when asked (Question 6);
6. identifying the disciplines in which teachers encounter difficulties in carrying out activities in the zero-grade (Question 7);
7. determining the degree of adaptation of children to the specifics of school activities in the zero-grade after the first semester (Question 8);
8. identifying the degree of participation in training courses organized by MEN for the zero-grade and the usefulness of these courses (Questions 9 and 10);

9. learning teachers' perceptions of pay for work done in relation to time and training required with the occurrence of the zero-grade (Questions 11 and 12).
10. identifying the level of cleanliness and safety for children within the school (Questions 13 and 14).

The central hypothesis "Teachers are very much satisfied with the development of the activity in the zero-grade and its implementation in the primary education".

In order to achieve the established objectives, the following hypotheses were formulated:

1. Teachers believe that the implementation of the zero-grade in primary education is very effective.
2. The student is largely trained in the zero-grade.
3. Teachers are largely satisfied with the way they work in the zero-grade and are largely remunerated for their work.

The researched collectivity is represented by the pupils' parents and the teachers of the Ocnița Gymnasium School.

The observation unit consists of the parents of the pupils enrolled in the Ocnița Gymnasium School and the staff of this school.

The polling unit follows the parents of pupils enrolled in the zero-grade and the teachers who teach or taught in the zero-grade.

Method of sampling and sample size. Simple random sampling for both polls was used. The sample comprised 22 parents and 21 teachers, and the number of validated questionnaires was 20 for each questionnaire, which represents a response rate of 91% and 95%, respectively. The sample is not representative because there are no financial resources and time available to carry out a complex research.

Data collection technique. Data collection was conducted using the opinion poll method, the face-to-face survey based on the questionnaire. Both questionnaires use 19 questions. Thus, the questionnaire addressed to parents contains 15 closed, 2 open and 1 mixed questions, and the one addressed to the teachers contains 18 closed and 1 open questions.

The period for data collection was 15.01.2017-17.02.2017. The processing of the questionnaire was done using Excel 2010, which allowed the calculation of some statistical indicators used to interpret the survey results from the point of view of their relevance.

2.3. THE INTERPRETATION OF THE RESULTS OF THE SURVEY ON THE DEGREE OF SATISFACTION OF THE PARENTS INVOLVED IN THE PROPER CONDUCT OF THE ACTIVITY OF THE ZERO-GRADE

Objective 1. Determining the efficiency of zero-level implementation in primary education (Question 1)

$$\text{Overall score} = \frac{1 \times 0 + 2 \times 0 + 3 \times 8 + 4 \times 8 + 5 \times 4}{20} = 3.8$$

The score of $3,8 \approx 4$ denotes that most respondents consider that the implementation of the zero-grade in primary education is highly effective.

Objective 2. Identifying ways in which school activities work well (question 2).

Figure 1 shows that 55% of respondents support the good performance of school activities by responding to the teacher's request, while 45% support financially and no respondent volunteer.

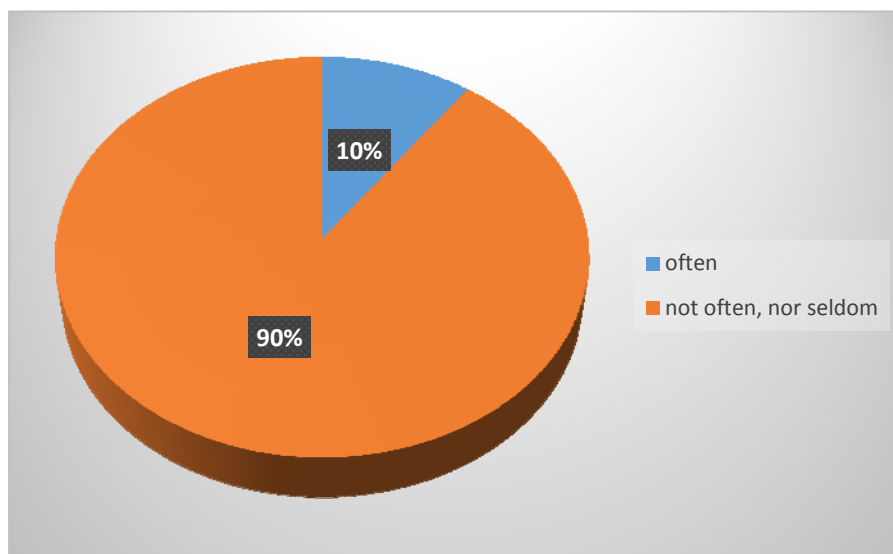


Figure 1. How to support school activities in good order.

Objective 3. Establish the frequency of attendance at school sessions and ways of communicating with the teacher (Questions 3 and 4).

90% of respondents regularly attend school sessions, and 10% often participate. This indicates that parents respond to teachers' requests.

Table 1. Methods of communication with the teacher

No. current	Ways to communicate with the teacher	Percentage%
1	Meetings	100
2	Individual consultations	75
3	Phone	100
4	E-mail	25

The main ways of communication with the teacher are sessions (100%) and communication by phone (100%). Only 25% of parents communicate via e-mail (Table 1).

Objective 4. Establishing the conditions for the optimal zero-order operation (Question 5).

Table 2. Conditions for the optimal zero-grade operation

No. current	Necessary conditions for zero-grade optimal operation	Percentage%
1	Playgrounds	100
2	Specific furniture	80
3	Teaching material	100
4	Toilet	85
5	Teacher support	35

According to Table 2, the most important conditions for the optimal development of the zero-grade are the playrooms (100%) and the teaching material (100%). The support teacher is not considered by parents to be improbable, given that only 35% consider it important.

Objective 5. Identifying the fill in for the school curriculum for children (Question 6).

$$\text{Overall score} = \frac{1 \times 0 + 2 \times 0 + 3 \times 5 + 4 \times 15 + 5 \times 0}{20} = 3.75$$

After calculating the global score, we obtained a score of $3,75 \approx 4$, which indicates that most respondents consider the school curriculum for children to be quite heavy.

Objective 6. Finding parents' perceptions about pupil readiness in the zero-grade and satisfaction with the information received on school activity (questions 7 and 8).

Zero-grade pupil's training:

$$\text{Overall score} = \frac{1 \times 0 + 2 \times 0 + 3 \times 3 + 4 \times 15 + 5 \times 2}{20} = 3.95$$

Information received about school activity:

$$\text{Overall score} = \frac{1 \times 0 + 2 \times 0 + 3 \times 0 + 4 \times 4 + 5 \times 16}{20} = 4$$

Following the calculation of the global score, we obtained a score of $3,95 \approx 4$, which shows that the vast majority of parents consider that pupils are largely trained in the zero-grade and are satisfied with the information received on the activity in school (Overall score = 4).

Objective 7. Establishing the degree of satisfaction with the activities of the teachers, the conditions for their deployment and the identification of other activities by parents wishing to be established in the curriculum (questions 9-11).

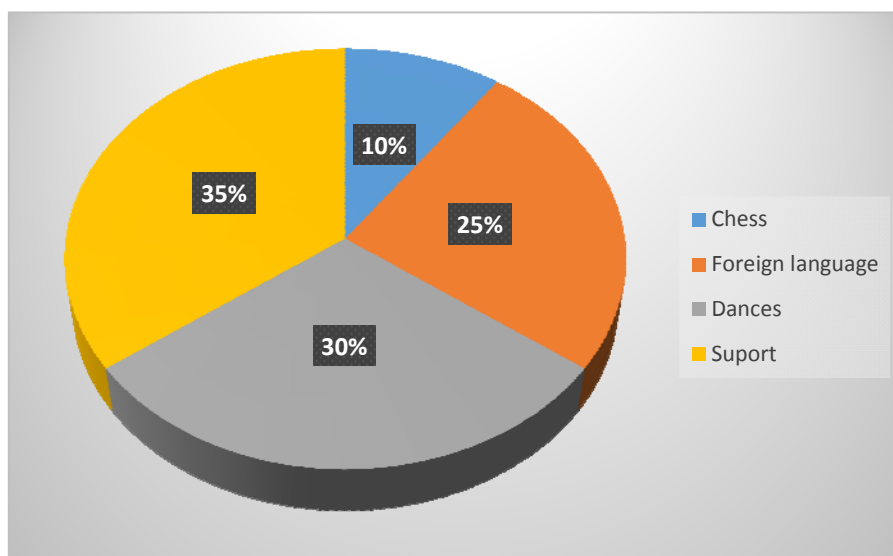


Figure 2. Activities to be set in the school curriculum by parents.

$$\text{Overall score} = \frac{1 \times 0 + 2 \times 0 + 3 \times 0 + 4 \times 0 + 5 \times 20}{20} = 5$$

Based on the global score, we obtained a score of 5, which shows that parents are very pleased with the activities of the teachers.

Figure 2 shows that parents want to set up other activities in the zero-grade school curriculum, such as sport (35%), dances (30%), foreign languages (25%) and only 10% wanting to practice chess, that they are too small to practice such an activity.

Objective 8. Determining the grade of child assessment by the teacher at zero-grade (Question 12).

$$\text{Overall score} = \frac{1 \times 0 + 2 \times 0 + 3 \times 0 + 4 \times 0 + 5 \times 20}{20} = 5$$

Based on the global score, we obtained a score of 5, which shows that parents consider the child's assessment by the teacher as very good.

Objective 9. Identifying the level of cleanliness and safety for children in school (Question 13 and 14).

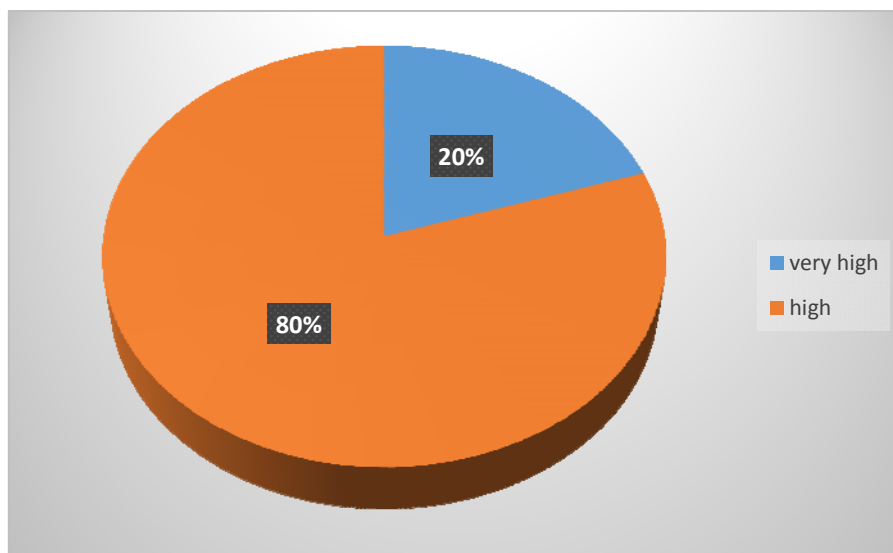


Figure 3. Safety level for children within the school.

Figure 3 shows that the majority of respondents consider that the level of safety within the school is predominantly high (80%).

In terms of school cleanliness, 100% of respondents believe that it is generally clean, which means that cleaning staff are very responsible.

2.4. The interpretation of the survey's results on the *degree of satisfaction of the teachers* involved in the proper conduct of the zero-grade activity

Objective 1. Determining the efficiency of zero-grade level implementation in primary education (question 1)

$$\text{Overall score} = \frac{1 \times 0 + 2 \times 0 + 3 \times 0 + 4 \times 6 + 5 \times 14}{20} = 4.7$$

Following the calculation of the global score, we obtained a score of $4,7 \approx 5$, which shows that the majority of teachers consider the implementation of the zero-grade in effective primary education to *a great extent* contrary to the parents who consider the implementation of the zero-grade in effective primary education in large measure (SCP = 4).

Objective 2. Establishing the required zero-grade optimal functioning (Question 2).

Table 3. Conditions for the zero-grade optimal functioning

No. current	Necessary conditions for zero-grade optimal functioning	Percentage%
1	Playgrounds	90
2	Specific furniture	85
3	Teaching material	100
4	Toilet	70
5	Teacher support	90

According to Table 3, the most important conditions for the optimal development of the zero-grade are the playrooms (90%), the teaching material (100%) and the support teacher (90%). However, the support teacher is not considered by parents to be improbable, since only 35% consider it important.

Objective 3. Identifying the fill in of the school curriculum for children (Question 3).

$$\text{Overall score} = \frac{1 \times 0 + 2 \times 1 + 3 \times 4 + 4 \times 15 + 5 \times 0}{20} = 3.7$$

As a result of the global score, we obtained a score of $3.7 \approx 4$, which shows that most of the teachers consider the school curriculum for the children to be quite heavy, and the parents think the same.

Objective 4. Determining pupil training in the zero-grade in relation to the extent to which the teaching materials used in teaching the course correspond to the teaching requirements (questions 4 and 5).

Grade of pupil training at zero-grade:

$$\text{Overall score} = \frac{1 \times 0 + 2 \times 3 + 3 \times 3 + 4 \times 14 + 5 \times 0}{20} = 3.55$$

The score of $3.55 \approx 4$ shows that most of the teachers believe that students are largely trained in the zero-grade. This is also what parents think.

The degree of correspondence of didactic materials with the teaching requirements at zero-grade:

$$\text{Overall score} = \frac{1 \times 0 + 2 \times 0 + 3 \times 1 + 4 \times 1 + 5 \times 18}{20} = 4.85$$

According to the total score of $4.85 \approx 5$, it is noted that the teaching materials used for the teaching of the classes correspond to the requirements taught to a great extent.

Objective 5. Establishing the parental attendance at school when asked (question 6)

$$\text{Overall score} = \frac{1 \times 0 + 2 \times 1 + 3 \times 1 + 4 \times 12 + 5 \times 6}{20} = 4.15$$

After calculating the overall score, we obtained a score of $4.15 \approx 4$, which indicates that parents come to school to a large extent when asked. We can say that the opinion of the teachers corresponds to that of the parents given that they regularly participate in the school sessions.

Objective 6. Identifying the disciplines where teachers encounter difficulties in carrying out activities at zero-grade (Question 7).

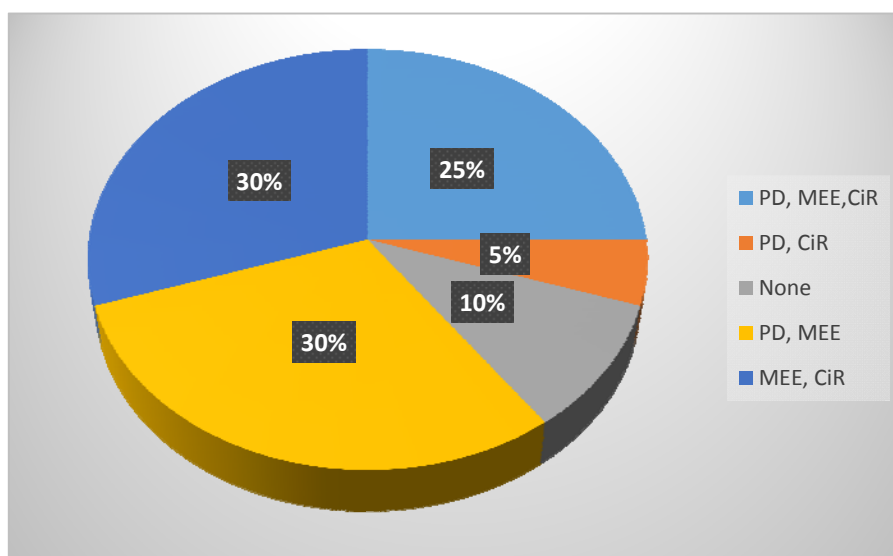


Figure 4. Disciplines in which teachers are faced with difficulties, where: PD=Personal Development; MEE=Math and environmental exploration; CiR=Communication in Romanian; None=none of the disciplines.

Fig. 4 shows that teachers with most difficulties are DP, MEM, and CLR. Thus we have DP, MEM (30%), MEM, CLR (30%), DP, MEM, CLR (25%). Also, 105 of the respondents say they have no hardship in any kind of activity.

Objective 7. Establishing the degree of adaptation of children to the specifics of school activities in the zero-grade after the first semester (question 8).

$$\text{Overall score} = \frac{1 \times 0 + 2 \times 0 + 3 \times 1 + 4 \times 2 + 5 \times 17}{20} = 4.8$$

After calculating the overall score, we obtained a score of $4.8 \approx 5$, which indicates that the degree of adaptation of pupils to the specifics of the school activities in the zero-grade after the first semester is very high, according to the opinion of the teachers.

Objective 8. Identifying the degree of participation in training courses organized by MEN for the zero-grade level and the usefulness of these courses. (Questions 9 and 10).

It is noted that all respondents participated in training courses organized by MEN for the zero-grade level.

$$\text{Overall score} = \frac{1 \times 0 + 2 \times 0 + 3 \times 0 + 4 \times 0 + 5 \times 20}{20} = 5$$

According to the overall score of 5 points, the degree of usefulness of training sessions organized by MEN is very high.

Objective 9. Learning the teacher's perceptions of pay for work done in relation to the time and training required when the zero-grade occurs (questions 11 and 12).

$$\text{Overall score} = \frac{1 \times 1 + 2 \times 2 + 3 \times 4 + 4 \times 12 + 5 \times 1}{20} = 3.5$$

After calculating the global score, we obtained a score of $3.5 \approx 4$, which shows that teachers are highly remunerated now, that they have been working for 5 years with their children since the zero-grade level appeared, instead of 4 years in the past.

Objective 10. Identifying the level of cleanliness and safety for children within the school. (Questions 13 and 14).

Figure 10 shows that the majority of respondents consider that the level of safety within the school is high (80%) and that 100% of the teachers consider that it is generally clean in school, which means that the opinion of the teachers corresponds to that of the parents.

CONCLUSIONS

Among the arguments for the implementation of the preparatory class, we mention:

- the pupil can benefit from the results of the education in advance, given that the pupil starts and finishes the school earlier;
- as we all know, there are many families in Romania who are not involved in children's education. Therefore, it is good for all children to start school at an early age, given that early education is important in post-secondary school success;
- although activities are carried out within the school, pupils are assessed by means of ratings/grades, being a school year for evaluation, training and intervention in the case of unpreparedness;
- the preparatory class helps to accommodate the environment and school staff;
- adequate preparation for school of all children, both those who have attended the kindergarten and those who have not attended it.
- increases the self-esteem and motivation for learning, given that these children are schoolchildren, they feel important because they have a responsibility and socialize with others.

In order to determine the degree of satisfaction of parents and teachers of the Ocnița Gymnasium School regarding the proper development of the didactic activities specific to the zero-grade level, we conducted two surveys among the parents of the students enrolled in the

zero-grade and the teachers who teach or taught in the zero-grade in the Ocnița Secondary School.

As far as the **satisfaction of the parents** involved in the good activity of the preparatory class is concerned, we find that they consider the implementation of the zero-class level in the primary education system, which is highly effective. We also believe that pupils are largely trained in the zero-grade (overall score = 4) and are satisfied with the information received about the work done in school (overall score = 4).

Thus, we can see that the central hypothesis **“Parents are very satisfied with the activity in the zero-grade and its implementation in the primary education”** is verified because after the calculation of the global score we obtained a score of 5, which shows that the parents are very satisfied with the activities carried out by the teachers and the degree of satisfaction for the conditions in which the school activity is carried out is 100%.

Also, the derived hypotheses are verified as most respondents said that the implementation of the zero-grade level in primary education is largely effective (the overall score obtained = 4), the pupil is largely prepared in the zero-grade (overall score = 4) and the parents are very satisfied with the activities carried out (overall score = 5) and the information received by the teachers (overall score = 4).

As regards the **satisfaction of the teachers** involved in the good functioning of the preparatory class, we find that they consider the implementation of the zero-class primary education system, which is highly effective. I also feel that the students are largely trained in the zero-grade and are largely satisfied with the remuneration for the extra work.

Thus, we can see that the central hypothesis **“Teachers are largely satisfied with the activity in the zero-grade and its implementation in primary education”** is checked because the student is largely trained in the zero-grade (overall score = 4) and the teaching materials used in teaching the course correspond to the requirements taught to a great extent (overall score = 5), according to the teachers’ opinions.

Also, the derived assumptions are verified as most respondents said that the implementation of the zero-grade in primary education is highly effective (overall score = 5), the student is largely prepared in the zero-grade (overall score = 4) and the teachers are largely satisfied with the way in which the activity is carried out in the zero-grade, given that the degree of adaptation of the children to the specifics of the school activities in the zero-grade after the first semester is very high (global score = 5) and the didactic materials used when teaching classes correspond to very taught requirements (overall score = 5). They are also highly remunerated for the extra work (overall score = 4).

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