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TEACHERS, PUPILS AND PARENTS IN THE NEW MODEL FOR PRIMARY SCHOOL
Results of dependent variables

Abstract
All changes in a school are the changes in the people who make up that school. Before the war in Croatia we had completed several years' research into these changes. Throughout two school years we made efforts to achieve new models of school practice. It was a slow process. What happened with the teachers, pupils and parents in this time? Here are the results: showing their opinions, knowledge, abilities, sensitivity and creativity.

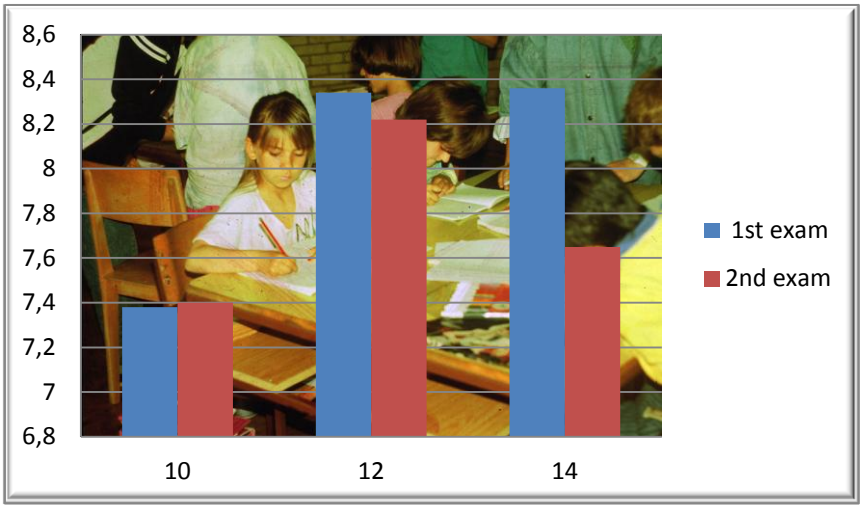
1. Introduction
During the five years just before the war we carried out pedagogical research in four schools around Osijek. We created a new model for primary schools that was different from the "normal" state schools of that time. In this model teachers and pupils became friends and learned together. Every month pupils made their own plans for all their subjects and learned as individuals or in groups. Teachers helped them at all times. In each class there were between 16 and 26 pupils, significantly less than in "normal" schools. In the first three classes (A model) one teacher teaches all subjects, in the next three classes (B model) three or four teachers teach the subjects, and in the highest classes (C model) there was one teacher for each specific subject. The evaluations were made together whereby the teachers and pupils talked about their experiences and created new ideas for their next activities. The daily time-table was 120 minutes for the elementary program, a 30-minute break with a lot of interesting activities, a 60-minute optional program, a 15-minute break, and then 45 minutes for free activities. Indoor and outdoor space was rearranged. Teachers had a years very intensive preparation for this new approach to education, using new methods. They had many seminars and workshops with experts from Croatia and foreign countries.

The process of change in the schools firstly took place according to an organized plan - reducing the number of pupils in a class, reducing the daily burden of pupils, longer breaks, restructuring the time-table, the stress in individual and group work, respecting the specific characteristics of different subjects and new ways of evaluation. These changes did not occur at the same time and at the same level in all schools. The changes in the new approach to education, which we understood to ensure the conditions for optimal development of the personality, occurred more slowly at first. An intensive process was ongoing but we cannot claim that these changes were as great as to overcome the traditional approach to education. Teachers often said that they were the ones that changed the most in this project, but also they needed more time than what we had given them.

2. Methodology
We should see what happened with people in this process of change. In the variables affecting the pupils we measured neurosis, knowledge, abilities, sensitivity and creativity. Among the teachers we examined neurosis and opinions, and among the parents only opinions. We used personality tests, knowledge tests, ability tests and creativity test.

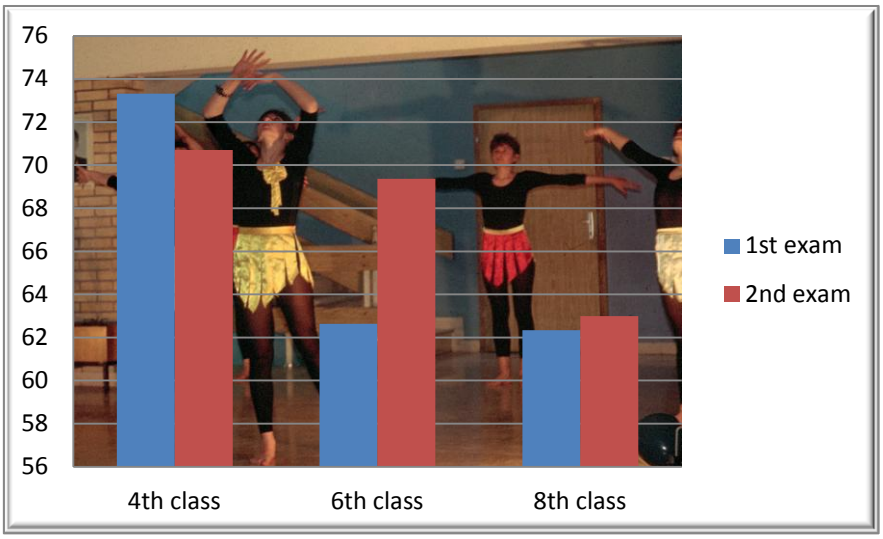
3. Results

3.1. The Pupils' results
Our psychologist Božica Štumfol examined **neurosis** in the first and in the second year of the practical experimental model. Neurosis grows with age and she examined some pupils in the fourth, sixth and the eighth grades. We can see in picture 1 that in the second examination neurosis decreases, but the difference is not significant and we stay at a null-hypothesis. Maybe it needs more time to discover those susceptible to such changes.



***Picture 1**: Pupils' neurosis in the first and in the second year of the experiment (x=age, y=neurosis)*

The Pupils' **opinions about school** are the most positive in the fourth grade in both examinations. This opinion is maintained by the pupils of the sixth grade after the application of the experimental model (2nd examination). In both examinations pupils of the eighth grade are more critical about school.



Picture 2: Pupils' opinion about school

The positive opinion of the pupils about school was also seen in the parents' reports. After returning from school children talked about interesting happenings and the less they talked the more they were tired or unhappy with something in the school. In Table 1 we gave the results. If we multiply the number of answers under "always" by 2, under "sometimes" by 1 and under "never" by 0, we can express the results numerically. Therefore, we mark positive opinions with + and negative opinions with -.

When we subtract the negative index from the positive we get the pupils' opinion about school that equates to +34. In this way we can compare the pupils' opinions of different ages. The youngest pupils (A model) have the highest opinion (+41), the same is for the (B model) pupils of fourth to sixth grades (+42), and the least positive opinions from the older pupils (C model) (+27).

Child after returning from school...	Always	Sometimes	Never	Σ
...says that it is tired, objects to other children and teachers.	12	262	298	572
...talks about interesting things, says that it is super at school, goes to play.	179	342	72	593
Σ	**191**	**604**	**370**	**1165**

***Table 1**: Reports of the parents about child behavior after returning from school (N=number of parents' declarations)*

We will show the Pupils' **knowledge** only through the results of mathematical examination. The knowledge was tested in the initial state before the project started, and then in the second year of the project. We examined pupils in the fourth, sixth and eighth grades. The results are shown in Table 2.

State	Initial	Final
N	369	332
Possible Σ x	7304	6483
Realize Σ x	4506	3994
%	**61,69%**	**61,61%**

***Table 2**: Percentage of solved tasks*

We can see that there is no significant difference between the initial and the final states and we can accept the null-hypothesis.

The experimental model anticipated individualization and in mathematics this is especially important. That means that students solved the different grades of the curriculum by the end of the school year. We wanted to see how much of the curriculum students had done. We have analyzed the answers of every student in the sixth and eighth grades. Pupils in the sixth grade realized 69% of the curriculum, and they learned 69% of its mathematical content. Students in the eighth class realized 63% of the curriculum and they learned 58% of its mathematical content. That means that the actual curriculum is too large and more time is needed for its realization.

Therefore, we cannot say that in this model students will realize more of the curriculum, but they will learn better in less time.

State	Initial	Final 1	Final 2
N	66	70	79
Σx	1178	1604	1436
x	17,84	22,91	18,17
%	**52,58**	**73,74**	**56,64**

***Table 3:** Success in solving the tasks using text*

Learning **how to study** was an important objective of our project. The examination was carried out in the fourth, sixth and the eighth grade. Initial tests had been done before the project started. The first final test in the first year of the project, and the second final test in the second year of the project were completed (table 3).
The differences in the final tests are significant and we can abandon the null-hypothesis ($p<0,01$).

Since it was a relatively small sample and composed of different pupils, we have oscillations in the results. However, we can see that in the first and the second final tests pupils have better results.

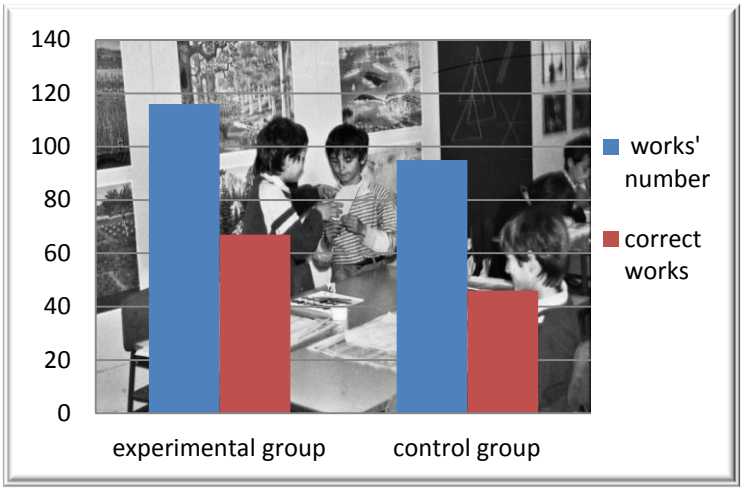
Pupils' **sensibility** was examined at the end of the project. To the students of the experimental school we gave the chance to express their own experiences of music, painting or writing. The same was completed by students of the traditional schools. The works were evaluated by literary and arts experts but were very uneven in evaluation. It was especially significant in the evaluation of paintings. Results are shown in Table 4. The students of the experimental schools show better results, but the differences could not be generalized.

Group	Experimental	Control
N	31	31
x	7,41	6,77
Σx	230	210
SD	2,062	1,856
t	**1,17**	

***Table 4**: Results of the sensibility for arts*

We believe that the different approach to the evaluation of the experts was the reason that we could not find greater differences. Pupils in the experimental schools had a different relationship to arts. Instead of the rational approach adopted in traditional schools they expressed their own experiences by painting, writing, dancing, playing, singing etc. We found out that in their free time they listened to music, painted and wrote more than children in "normal" schools.

The results of **psychomotor ability** can be seen in Picture 3. The pupils of the experimental group were more creative than the pupils of the control group. The ratio is 116:95 ($t = 5,29$, $p<0,01$). It is also similar to the technical correctness of the works. The ratio is 67:46 ($t = 2,31$, $p<0,05$). These results give us a chance to leave the null-hypothesis because there are differences in favor of the experimental group.



***Picture 3**: The relation between the number of works and technically correct works*

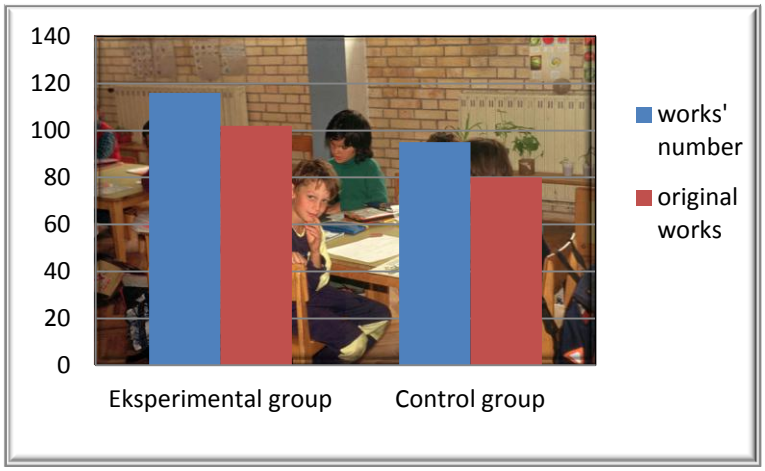
In the experimental schools there were many more opportunities and chances for the pupils' work and this is the reason why pupils in these schools have different results.

In the **creativity test** (table 5) we have some differences between first and second exam but results cannot be generalized.

	1st exam	2nd exam
N	92	88
M	33,49	34,34
SD	13,00	12,91
t	**-0,44**	

Table 5: *Results of the creativity test*

However, the relation between the original works and the total number of works in experimental and control (Picture 4) group shows differences in favor of the experimental group ($t=2.63$, $p<0.05$).



Picture 4*: Relationship between the total number of works and the original works*

3.2. Teachers' results

The most of the teachers had affirmative **opinions about the experimental model** (70%). In all schools most of the teachers have a positive opinion, however, there were significant differences between them.

Schools	Bijelo Brdo	Vukovar	Čeminac	Kopanica	Σ
Positive opinion	16(70%)	26(65%)	18(94%)	13(59%)	73(70%)
Neutral opinion	1(4%)	2(5%)	-	-	3(3%)
Negative opinion	6(26%)	12(30%)	1(6%)	9(41%)	28(27%)
Σ	**23**	**40**	**19**	**22**	**104**

Table 6*: Teachers' opinion about models of the experimental school*

We found a negative correlation between opinions and neurosis ($r=-0.26$). It means that negative opinions of the model are the cause of the development of neurosis. By detailed analysis we found out that all the teachers who had positive opinions of the model there was no development of neurosis. Among the teachers who had less positive or negative opinions of the model there was the development of neurosis.

The results show an increase of **neurosis** amongst the female teachers at the second testing. The differences are significant. Among the men at the second testing neurosis was less than at the first

testing but the differences are not significant. That means that teachers have different reaction to the project. The women reacted with the development of neurosis while the men reacted with a decrease in neurosis.

N-test	N	M1	M2	SD1	SD2
women	60	20.95	22.58	8.89	10.85
men	23	15.87	14.96	8.60	8.75

Table 7: *The average and standard deviation of the results of the neurosis test for teachers*

3.3. Parents' opinions

Parents pointed out in their reports, in a very positive view, that their children had fewer obligations that they were more independent, that they had learned how to study, that they developed self-management and cooperative abilities. Some of them were of the opinion that school equipment was not adequate, that the curriculum contained unnecessary content and that the position of the teachers should have been more appreciated. However, some requested that the project should be stopped because they didn't like their children being subjected to any experiments. Those negative opinions were 8%. The others have positive opinions (43%) or think that there were some good as well as some bad points in the experimental model (49%).

There are some differences in the opinions of the parents whose children are in A, B or C model. The most positive opinions come from parents of the youngest pupils (A model), less in the middle (B model), and the least in the oldest pupils (C model).

Opinion	A model	B model	C model
Positive	58%	54%	40%
Neutral	38%	37%	49%
Negative	4%	9%	11%

Table 8*: Parents' opinions about A, B and C models of the experimental school*

We can conclude that most parents have either positive or neutral opinions of this concept and it is more positive if the parents have younger children in school.

4. Discussion

The variables concerning pupils took an expected course. We have seen positive changes in self-learning, psychomotor abilities, creativity and opinions of school. In changes of sensitivity and neurosis, the changes were expected and yet they could not be generalized. In our opinion the project did not cover sufficient time. When we talk about knowledge, we think that having the same results as compared with "normal" schools, with a fewer number of lessons, is a good result.

Unexpected changes happened among the teachers suffering from an increase in neurosis, but only by women. Neurosis increased among teachers who had less positive or more negative opinions to these changes. This means that all of the changes in the school are connected with the changes in a teacher's personality but this does not happen easily and without opposition. Teachers who took part in the project were under pressure from both inside and outside of the school and therefore they were in a conflict-situation which produced neurotism.

Although we live in a repressive culture that produces wars and much violence - one of these schools was in Vukovar - it was a surprise that parents did not have much more of a negative opinion to these changes. Our problem was that we did not have enough energy to cooperate with the parents. It would be very important for the attitude of the parents towards the project.

5. Conclusion

Research showed that our conception had a lot of advantages over traditional schooling. With a lesser number of lessons, pupils had the same level of knowledge, a higher level of ability for self-learning, psychomotor ability and creativity. Many teachers became enthusiastic supporters of new ideas and they continued to propagate them. Something did happen! The war destroyed buildings, many pupils, teachers and parents from these schools were killed. Schools were demolished and this model does not exist. However, ideas are kept alive by people who at all times say that these ideas give them hope that they can change the world even though it seeems almost impossible.

Bibliography

Beck ,J. (1976) Schule der Angst, Jahrbuch für Lehrer 1977, Reinbek bei Hamburg, Rowohlt.
Galton,M. (1989) Teaching in the Primary School, London, David Fulton Publishers.
Gordon.T. (1977) Lehrer-Schüler-Konferenz, Wie man Konflikte in der Schule Löst, Hamburg.
Maslow,A. (1968) Towards Psychology of Being, New York, D.Van Nostrand Company.
Peterssen,H.W. (1983) Lehrbuch Allgemeine Didaktik, München, Ehrenwirt.
Riedel, H. (1977) Allgemeine Didaktik und unterrichtliche Praxis, München, Kösel-Verlag.
Singer,K. (1981) Masstabe für eine Humane Schule, Frankfurt am Main, Fisher Taschenbuch Verlag.
Schiro,M (1978) Curriculum for better Schools, New Yersey, Technology Publications.
Schrank,J. (1972) Teaching Human Beings, Boston, Beacon Press.
Silberman,C.E. (1973) The open Classroom Reader, New York, Random House.
Tyler,W.R. (1973) Curriculum und Unterricht, Düsseldorf, Pädagogischer Verlag Schwann.