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Reform of the School System as an Anthropological Problem – An Example from the History Education

I. Rendić-Miočević[1], D. Petranović[2] and B. Vojniković[3]

[1] Faculty of Philosophy, University of Split, Zadar, Croatia
[2] Department of Internal Medicine, School of Medicine, University of Rijeka, Rijeka, Croatia
[3] Ophthalmic Outpatients Department »Dr. B. Vojniković«, Rijeka, Croatia

A B S T R A C T

The article is a longitudinal review of experimental research of high didactic systems effects in history teaching over the last 30 years. The aims of research are to evaluate: 1. position of adolescent, especially neurotic pupils in the teaching process; 2. possibilities to enhance the level of restructured matter (historical anthropology) in programmed and problem-solving teaching; 3. influence on the anxiety, attitudes and success of pupils with changes in the teaching process. Authors conclude, that the teaching process can influence the emotional state of the neurotic pupil. Higher didactic systems in a short time can influence the enhanced level of knowledge in relation to the traditional teaching systems. In the new systems, the attitudes of the pupils towards the teaching can change positively. Experiments carried out point to the possibility of changes of national identity and the necessity of an anthropological approach to reform the educational system.

Introduction

Today, the school in Croatia and in the world is in great crisis and, closed between its walls, all participants in the teaching process experience great frustration. Experts of various sciences have described the situation extremely well, but finally, this situation has to be changed. The problem is very complex and can be resolved only with an interdisciplinary approach. An escape from the crisis is therefore, primarily, the task of pedagogy but it alone is incapable of creating a new

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system of education. Therefore, reform efforts prescribed »from above« can be reduced to the creation of external frameworks. However, without internal reform in which we must create new ways of teaching and redefining the matter of individual subjects with their good correlation, the educational reform cannot succeed. Internal reform must be based on the teaching methods of individual subjects, didactics and educational psychology and, because of psychological problems (of pupils and teachers!), medical science (especially psychiatry) must be included in reform of the school system. The problem becomes more complex if we set clear goals of education in a democratic Croatia. These goals, first of all, should relate to the self-knowledge of pupils and to development of their responsibility towards themselves and others and their orientation towards a democratic society[1,2]. These goals clearly lead us towards alteration of a traditional Croatian identity which should be free of myth patterns. However, this identity must be supported by the true values which our ancestors bequeathed to us in a legacy. The problems are very complex and obviously lead us towards anthropology which, with its interdisciplinary approach, can help pupils to understand the world around them and in a new school environment, experience school as an institution to which they enjoy going, respecting the Croatian school tradition too.

In internal reform, especially in linking of subjects, great importance should be given to history teaching which has for a long time the role of axis of horizontal gathering of teaching disciplines. This facilitates pupils to get a vision of the entire world[3]. However, in Croatian schools political history prevails[2,4] and, under no circumstances, can't resolve the complex problems. This history is indeed just »swotting« which for the pupils represents an additional stress. Helpless to resolve anything, numerous superfluous directives arrive »from above« about unburdening of the pupil. How to achieve this? Nobody indeed knows. From the other side, nobody asks the question if, with restructuring of historical matter and abandoning the classical learning structure, it is possible to master successfully more matter in a shorter period, to the pupils' satisfaction. To achieve this, political history, prevailing until recently in historical science as the spine had to be transformed into a nucleus which would be enlightened from various viewpoints (sociology, psychiatry, geography, culture, etc.). This trend has been observed in western historiography[5] but it is insufficiently reflected in teaching. This nucleus in the teaching must be the matter which the pupil has to know. It should be enriched and explained with interesting contents which are easy to remember. In one word, the subject matter ought to be focussed on modern historical anthropology[6] which studies all fields of spiritual and physical life of all people and not only the elite. In this structure of the subject matter, great importance should be given to the development of methodological skills of the pupils. So, for example, studying reaffirmed Freud's theories (Edip complex, super ego, etc.) the pupils develop a special style of thinking and face extremely challenging questions which have to be answered[7–10]. Historical sources and motives of epic poetry clearly point to symptoms similar to projection identifications, narcissism and paranoia (Prince Marco syndrome)[7]. These symptoms, to which traumatic neurosis as a consequence of frequent wars should be added, have the characteristics of long duration. These symptoms are common for the patriarchal areas of southeastern Europe. Pupils must be well acquainted with these symptoms if they are able to understand the genesis of crime committed in the XX century.

The new structure of subject matter is impossible to realize in a traditional lecture teaching. Higher didactic systems (programmed and problem-solving teaching and their combination) should be developed where the individual pace of learning and a high level of independent intellectual work of the pupils are achieved[8]. The aim of this kind of learning is, apart from mastering knowledge, to influence a change of attitude of the pupils and, if possible, act in a psychotherapeutic manner.

We have been researching these problems for almost 30 years[2,11] and we think that anthropologically oriented experts could use the knowledge of our experimental research whose results, unfortunately, due to rigidity of the school system, have hardly any effect in the teaching practice.

The Position of the Neurotic Pupil in Teaching Process

Already at the beginning of our research on the threshold of the 70s , we noticed that pupils enjoy a history class where they can create and where their personality is respected. In this context, an important question was imposed as to whether the teaching process could provoke or alleviate a state of stress in the neurotic pupil. Therefore, in the school year 1985/86 we carried out research on a small number of neurotic pupils (6) where the school psychologist, on the basis of Hanes' questionnaire on neuroticism and extraversion[12], discovered neurotic components. The subjects were aged 16–17 years. To determine the initial state, the following were used in the research: an interview (anamnesis, opinions on the type of teaching, an introspective determination of subjective state), psychological and medical measures (tremormetry[13], measuring of pressure and pulse). After the application of didactical systems and stressful situations (writing tests or oral testing) the final state was compared with the initial state.

The research led us to the following conclusions:

1. Adolescents with neurotic components of personality, growing up in an adverse family environment, display a high level of excitation before coming to school. For them this is their normal state.
2. Their capacity for attention concentration is limited temporarily to 20–30 minutes. Therefore, the school hour which lasts for 45 minutes is not suitable for them. An enforced sitting, during which attention lags, represents an additional stress.
3. High stress following written or oral testing (stress type of learning) arises in neurotic pupils and this happens quite frequently. With their adaptive mechanism, they are unable to conquer this stress during a five-minute school break after the school hour. Even after 15 minutes, the subjects do not return to the initial state level although this tendency can be seen.
4. A feeling of satisfaction or dissatisfaction with achievement has a greater influence than the situational factor. Since neurotic pupils usually achieve weaker results, their stress is greater than in other pupils who do not register such stress. Neurotic pupils who achieve good results in learning react in a similar way to pupils without neurotic components of personality.
5. The neurotic pupils vis-à-vis their peers have a tendency to greater variation of emotional excitement.
6. In a neurotic person vis-à-vis the initial state, concentration significantly rises in every teaching situation. This is probably a reflection of their low initial level of attention concentration. Nevertheless, with an increase in the level of concentration, they do not achi-

eve concentration in the work when compared with pupils without neurotic components.

7. In a combined programmed and problem-solving teaching, the greatest attention concentration has been observed. With neurotic persons who are intellectually engaged and who can achieve better results, a tranquillity which has been established subjectively (interview) and objectively (tremormetry) has been observed. Nevertheless, in such situations, an increase of pulse and pressure has been observed because of intensive intellectual work. In classic lecturing, this increase has not been observed.
8. Interesting classic lecturing of short duration calms the neurotic pupils and the tranquilizing effect, the feeling of success and self-confidence are of longer duration following the combination of programmed and problem -solving teaching.

The Possibility of an Increase of Knowledge Level and a Change of Attitudes

In the school year 1996/97, in the first year of grammar schools in Pula and Rijeka, a didactic experiment was organized. This experiment had to respond to the question of whether the level of mastery of historical subject matter with an introduction of modern historical science and its methodology in the teaching process with the application of programmed and problem-solving teaching was increasing. Apart from this, the question also had to be asked whether the anxiety level, moral judgement of pupils, their attitude towards history as a scholastic subject as well as their attitude towards history vis-à-vis other subjects, were changing under the influence of innovated teaching.

An experimental factor was the introduction of an innovated structure on the theme of the old Orient in the first year of grammar school along with application of higher didactic systems. There were 48 pupils in experimental and the same number in the control group who were homogenized on the basis of previous school success and measuring instruments which were prepared for the experiment. Pupils from the experimental group mastered the teaching theme during five school hours while pupils from the controlled group mastered the theme in a traditional manner over five hours using the textbook and with the explanation of the professor.

During the experiment, the following measuring instruments with a high coefficient of reliability were used:

1. Anxiety test – 9 questions;
2. A bi-polar scale of moral judgement – 9 questions;
3. A bi-polar scale for examining the relationship of pupils towards history and other scholastic subjects – 6 questions;
4. A bi-polar scale for examining the attitudes towards the subject of history – 6 questions;
5. A knowledge test on the theme of the old Orient – 37 questions.

With measuring instruments 1–4 the initial and final states were examined and we tried to establish eventual changes. Only the final state was examined by a knowledge test. With measuring instruments 1–3 statistically significant differences between the initial and final state in both groups were not discovered. However, through the introduction of higher didactic systems (programmed and problem-solving teaching) and innovated subject matter, greater success in history learning is achieved and this has been proved by the knowledge test on the theme of the old Orient (Table 1). In the

TABLE 1
CHANGE OF ATTITUDE TOWARDS HISTORY SUBJECT AND INCREASE OF KNOWLEDGE LEVEL IN EXPERIMENTAL GROUP (N = 48) IN COMPARISON TO THE CONTROL GROUP (N = 48) FOR THE PERIOD 1996/97

Indicator	Group	X	SD	t
Attitude towardsht history; bi-polar scale (initial)	E	42.81	8.73	0.18
	C	39.10	10.76	
Attitude towards history; bi-polar scale (final)	E	44.19	6.29	2.83**
	C	39.10	10.76	
Knowledge test	E	27.29	3.82	11.28***
	C	18.19	3.20	

* = $p < 0.01$; ** = $p < 0.001$
E = experimental group; C = control group

experimental group, an arithmetical median of 27.29 has been achieved while in the control group it amounts to only 18.19 (t=11.28). Pupils in the experimental group mastered the didactic material independently with consultation of the professor while pupils from the control group mastered the subject matter in classical lecturing. It is important, however, to note that innovated structure of historical matter along with higher didactic systems in a short time (five hours) influenced positively a change of attitude of the pupils towards history teaching. Measuring instrument no. 4 demonstrated that there were no differences in the initial state between either groups, while in the final state, differences arose (Table 1, t=2.83).

Change of Attitudes and Their Correlation Vis-à-Vis the Level of Knowledge

To assess the impact of teaching based on developed standards for Croatian history and problem-solving programmed teaching in the school year 1998/99, a didactic experiment in the second year of grammar schools in Rijeka and Pula was carried out. The experiment began at the end of the first half-term and finished in the middle of the second half-term. It lasted 15 school hours in the experimental group and 22 hours in the control group. The basic focus of research was to compare the new teaching system (by using the combined programmed problem -solving handbook »Messages from ancestors« author I. Rendić Miočević in the experimental group) with the traditional (control group). The model of experiment was a single-factor experiment with classes as groups in order to compare. The experimental factor was the manner of mastering the subject matter (two modalities). Monitoring the two modalities required the formation of two homogenous groups on the basis of school success: experimental (58 pupils) and control (59 pupils). In this didactic experiment, the greatest interest was ignoring the prob-

TABLE 2
ATTITUDES AND ASSESSMENT OF PUPILS IN THE INITIAL AND FINAL STATE 1998/99

		Group	N	X	SD	t
	Attiude towards subject	E	56	27.09	8.001	–2.06*
		C	53	29.96	6.43	
I	Attiude towards teacher	E	57	15.38	2.62	–0.88
N		C	56	15.91	3.63	
I	Assessment of own success	E	58	8.6	1.94	–3.6**
T		C	59	9.71	1.34	
I	Assessment of subject usefulness	E	57	16.49	3.25	–0.78
A		C	56	16.94	2.81	
L	Assessment of teaching quality	E	55	33.47	6.0	0.01
		C	54	33.46	6.96	
	Attitude towards subject	E	49	29.06	3.04	3.03**
		C	55	27.47	2.29	
	Attitude towards teacher	E	49	14.43	2.55	3.06**
		C	55	12.87	3.22	
F	Assessment of own success	E	49	9.27	2.21	–1.46
I		C	55	9.78	1.34	
N	Assessment of subject usefulness	E	49	11.76	3.08	–0.84
A		C	55	12.2	2.56	
L	Assessment of teaching quality	E	49	30.14	3.87	3.82**
		C	55	27.27	3.77	

* = $p < 0.05$; ** = $p < 0.01$
E = experimental group; C = control group

lem of pupils' attitudes towards the history teaching which is in deep crisis due to, among other factors, an adverse state of pupils in traditional type of teaching (»swotting« history). Therefore, through the survey (bi-polar scale), we examined

pupils' attitudes of both groups before and after the experiment. With a factor analysis, five parts of the survey with a high coefficient of reliability were determined. They examine different areas of teaching:

1. Attitude towards the subject;
2. Attitude towards the teacher;
3. Assessment of own success;
4. Assessment of subject usefulness;
5. Assessment of teaching quality.

Table 2 shows the number of pupils in the initial and final state shown for each of the five survey parts (as a result of sickness and other reasons, not all pupils completed the survey or replied to all questions). In Table 2, the arithmetical median, with standard deviation and t-indicator is shown.

It can be seen from Table 2 that pupils in the experimental group had, in the initial state, lower indicators in attitudes towards subject and assessment of their own success. In the other three variables, statistically significant differences were not discovered. In the final state, progress of pupils in the experimental group in attitudes towards subject, teacher and teaching quality is observed. Apart from this, in the final state, an increase in the level of assessment of own success is observed with pupils in the experimental group vis-à-vis pupils in the control group, which is reflected in annulment of statistically significant differences in favor of the control group in the initial state.

Through the knowledge test which has a high coefficient reliability, it was established that pupils from the experimental group had mastered the subject matter better. A great difference achievement in the arithmetical median (Table 3) is not usual in didactic experiments.

However, the research pointed to some more significant phenomena which, due to limitations of space, we cannot show statistically. An analysis of statistical significance of correlation between parts of the bi-polar scale and the knowledge test shows that the pupils' attitude in the control group towards the subject is in correlation with low results on the knowledge test. On the other hand, this attitude shows a negative correlation of these results and attitude towards the teacher. We can conclude that the teacher appears as a negative factor in development of knowledge. This indicator confirms the impotence of traditional lecturing in development of historical knowledge. In the experimental group, the high level of knowledge achieved influenced the high assessment of own success while a higher assessment of the subject, without doubt, depends on the teacher's didactic systems.. The pupils' attitude on the usefulness of the subject depends on the teacher too.

Through a statistical analysis of a special survey, it was established that pupils had extremely well accepted the textbook, structured on the basis of programmed and problem-solving didactic sys-

TABLE 3
RESULTS OF KNOWLEDGE TEST 1998/99

Group	X	SD	t	p
C	18.63	5.44		
			9.78	0.001
E	29.07	5.42		

E = experimental group; C = control group

tems. The text of this book is »full up« with new themes of historical anthropology and at first sight seems comprehensive, but to the pupils who resolve problems, such »extensiveness« does not bother them. On the other hand, classic textbooks receive a weaker reception from the pupils.

Discussion

The results of the research of 1985/86 show that teaching can influence the emotional state of neurotic pupils despite the rigidity which prevents a change in behavior and adjustment to the environment. Quietening of various characters was registered following lecturing and the combination of programmed and problem-solving teaching.

In lecturing it is possible to achieve complete tranquillity which the pupil can, but does not have to, register subjectively. On the other hand, in programmed and problem-solving teaching, a subjective feeling of satisfaction, tranquillity (this is possible to prove objectively), usefulness and self-confidence can be achieved. Objectively, with such a subjective feeling, a certain level of excitability (increase of pressure and pulse) is nevertheless registered. This can be explained by certain »innovation« of such teaching vis-à-vis that which is otherwise offered by the school and by a positive stress reaction (focused on problem solving).

Obviously, the possibility of teaching effects on neurotic pupils should be maximally explored and this can be achieved through changes in the teaching process and direct involvement of the teacher. In dealing with neurotic pupils, instead of a rigid limitation of theme in 45 minutes, the pace of learning which is suitable for them should be programmed. Furthermore, various didactic systems (lecturing, programmed and problem-solving teaching) should be combined in order to improve tranquillity and simultaneously enhance final success in teaching. The teaching process, in any case, should be individualized and adapted to the interests and the psychophysical capabilities of pupils. It is important to create human communication[2,14,15,16] in resolving scholastic problems in general and especially those linked to the position of neurotic pupils.

Knowledge acquired during the experiment in 1996/67 should be significant in defining educational goals where the development of positive pupil's attitudes must not be ignored. This experiment demonstrated the justifiability and need for a restructuring of historical subject matter and the introduction of higher didactic systems in history teaching. We can conclude that an interdisciplinary approach should be followed in the structuration of history matter in the school on the basis of modern history science focused on historical anthropology with application of higher didactic systems. Only one subject – history, cannot in a short time change the school environment. This is shown by the fact that during mastery of the innovated historical subject matter, no significant changes arose (level of anxiety, moral judgement and pupils' attitudes vis-à-vis history and other subjects). This should be the task of all school subjects which ought to be linked. In this connection, history teaching must have a significant role. This didactic experiment confirms the results of our research to date[2,11].

The experiment carried out in 1998/99 also showed that in history teaching, changes in the structuration of subject matter and organization of teaching are indispensable. With the assistance of developed standards for Croatian history and with application of programmed and problem-solving history teaching, it is possible in a short time to change the attitude of pupils towards teaching and far

better results are achieved. Apart from this, the higher level of knowledge has an influence on the increase of assessment of own success while higher assessment of the subject, without doubt, depends on the teacher and his didactic systems. The pupil's attitude and usefulness of the subject also depends on the teacher.

History education focused on anthropological themes, which reveal the dark side of our past, has a significant role in the pupil's self-cognition and preparing him for life in a democratic society. Therefore, all of this can help us in an indispensable reform and modernization of the national identity which should be based on Croatian multiregionality. In a new environment, Croatia should be focused on new strategies of adjustment of own cultural area to its outside neighbors without denying its own positive traditions. In this matter together with adaptation of culture, we must develop a culture of adaptation [17]. In changing the Croatian identity, the Croatian educational system, whose reform should be viewed as a wider anthropological problem, ought to be given a significant role. All other attempts of a singular approach are doomed in advance to failure.

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I. Rendić-Miočević

Faculty of Phylosophy, University of Split, Obala Petra Krešimira 2, 21000 Zadar, Croatia

REFORMA ODGOJNO OBRAZOVNOG SUSTAVA KAO ANTROPOLOŠKI PROBLEM – PRIMJER NASTAVE POVIJESTI

S A Ž E T A K

Rad je longitudinalni prikaz eksperimentalnih istraživanja učinaka viših didaktičkih sustava u nastavi povijesti tijekom proteklih 30 godina. Svrha istraživanja je procijeniti: 1. položaj adolescenata, naročito neurotičara u nastavi; 2. podiže li se razina usvajanja restrukturiranog gradiva (povijesna antropologija) programiranom i problemskom nastavom; 3. možemo li utjecati na anksioznost, stavove i uspjeh učenika izmjenama u nastavi. Autori zaključuju kako se nastavom može utjecati na emocionalno stanje neurotičnih učenika. Viši didaktički sustavi u kratkom vremenu utječu na povećanje razine znanja u odnosu na tradicionalnu nastavu. U tim sustavima pozitivno se mijenjaju stavovi učenika prema nastavi. Provedeni eksperimenti upućuju nas na potrebu antropološkog pristupa reformi odgojno obrazovnog sustava.