

## CHANGEABLE EDUCATIONAL ENVIRONMENT OF RURAL SCHOOL FOR SUSTAINABLE DEVELOPMENT

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**Abstract.** The Latvian rural school as educational environment works in *the global (world scale) educational environment*, where we can observe self-developing processes. The diversity of conditions allows for turning to concrete case studies, where rural school is researched as *local educational environment* in the evolutionary, structural and functional aspects in the context of contradictions, new tendencies, yet there are unsolved problems and ongoing processes which take place in the global outside educational environment. The investigation of the rural school as local educational environment is important and topical in the aspect of *continuous (unceasing) educational environment* where there must be succession, systemic approach, fairly equivalent possibilities in the aspect of education accessibility and extraction, offering and quality of education. The results of the research indicate that, in order to provide for sustainable development of schools themselves, rural communities and areas in general, rural schools expand their target audience, formal and informal education and training offers, expand the range of their functions by taking additional functions, thus becoming lifelong learning environment providers for the whole rural community. The results of the research show changes in and diversity of educational environment of rural schools, and it lets at least partially to solve the issue of balanced development in the *urban-rural* dimension in Latvia. There is great diversity of rural school educational environment.

**Keywords:** changeability, diversity, educational environment, rural schools, sustainable development.

### Introduction

Since the end of the 20<sup>th</sup> century and the beginning of the 21<sup>st</sup> century Latvian rural schools function under the conditions of constantly changing environment, where the process of self-development is observed. Nowadays, due to the influence of economical, demographical and social crises the problem of the sustainability of a rural school as the educational environment has become urgent.

The results of our theoretical research testify that nowadays research of rural schools is a topical problem of science in many countries, including Australia, Belarus, Canada, Finland, Ireland, Russia, Sweden, UK, USA etc. At the international symposium concerning the research on the rural educational environment in Europe it was particularly emphasized that there is a lack of studies on the problems of rural schools [1-3].

The research on the educational environment of rural schools has become topical also in Latvia due to the fact that the sustainability of the educational environment of rural schools and rural communities is exposed to danger under the conditions of demographic and economic crisis.

The research on the educational environment of rural schools in Latvia is mostly performed at the Institute of Education and Home Economics of the Latvia University of Agriculture [2-10].

The fact that there is an explicit tendency for the decrease of the number of small rural schools and that it is important to preserve especially rural schools and study the fluctuation of their educational environment not only in Latvia, but also in other countries is proved by the research performed by several authors [11-13].

The sustainable development of the society to a great extent is related to the rural community and the sustainable development of its cultural environment. The future existence of the Latvian nation and the awareness of the Latvian identity are impossible without the preservation of rural cultural environment and further development. It is especially important at the present moment, when assessing the consequences of the demographic and economic crisis we look at the future of our nation. The sustainability of rural cultural environment can be ensured, first of all, maintaining and further developing educational environment in rural areas. At present, approximately 30 % of Latvia population live in rural areas. Despite the fact that it is almost one third of the population, the historically inherited disbalance and disharmony between the opportunity for education in the two dimensions is persistent in Latvia: 1) the capital and regions; 2) cities and rural areas. The problem of different education offered in the dimension *Riga-regions* is being solved on the level of higher

education institutions – along with Riga higher education institutions regional higher education institutions operate successfully trying to maintain equilibrium in the educational environment providing their own educational offer. Unfortunately, the problem of educational offer in the *urban and rural* dimensions is still current.

To ensure the viability of Latvian rural schools in the contemporary conditions of crises, the changes in the rural educational environment take place not only “top down” but also “bottom up”. Schools become self-organizing, self-assessing and self-developing systems of educational environment, that change with an aim to ensure sustainable development for themselves and the whole rural community and its cultural environment in future.

The *aim* of the present article is to analyse and evaluate the results of theoretical and empirical studies within the context of sustainable development of rural schools and rural communities in Latvia.

### Materials and methods

The synergistic and ecological paradigm evolved in the research of educational environment. We support the finding of M. Fullan that *the basis for successful transformation of education is not only the ability to implement the latest approaches, but rather an ability to overcome rises and falls created by planned and unplanned changes, at the same time growing themselves and developing* [14].

In our investigation we studied and described a rural school as an *environmental system of education*, which is a *living system*, whole organism that develops in its ecosystem, functions in the sphere of education based on the maintenance of self-regulation, self-development and balance with the regularities of the changing environment. The theoretic basis of our research was the following basic statements [15-21; 25]:

- any social system, including the school, is a *natural* organization that functions almost like a biological organism, a living being that is able to self-develop and self-regulate in the influence of internal and external environment factors and whose interrelation with the outer environment is subject to definite correlations;
- the *homeostasis (self-regulation) principle* of social systems that helps to *maintain the balance with the outer environment* as well as the *morphogenetic regularities and reorientation regularities* of the development of a social system as a living organism on the basis of the feedback with the outer environment; *the social systems are autopoietic, that is, they continuously renew themselves and are self-referential, that is, they can refer to themselves; the systems have the ability to perceive the difference between the system (itself) and the environment (something else) and the ability to draw consequences*;
- not every social system is an organization, in turn, an organization is always a system, nevertheless, it differs from a usual system having specific indicators: target oriented, coordinated, self-organizing and self-regulating activities;
- an *open system, dissipative structure tends to maintain balance with the outer environment*; a viable system is only a system that is open for new information; able to study the processes going on in the surrounding environment, including transformational processes; can learn from the experience of others; ready, on the basis of obtained new information and new experience, to draw conclusions necessary for ensuring its *viability and sustainability*, and, on the basis of these conclusions, change continuously.

The observations and our research show that since the end of the twentieth century the process of transformation takes place in the educational environment of rural schools in Latvia. A rural school as an educational environment becomes more open for the whole local society, namely, rural community. In order to substantiate these processes, we believe it is essential to provide *the substantiation of the conception of community education, emphasising the significance of the school for the rural community life and facilitation of its development*. The *concept of community school* became a guarantee for the viability and sustainability of rural schools [18; 22-24]:

- a rural school functions as the centre of the community and serves as a provider of different services, it becomes more effective means for the maintenance of the community; schools as the centres of community reach their status in two ways, firstly, integrating even more in the

- community, secondly, widening the educational environment, in order to use all the resources of the community more effectively;
- from the economic perspective a rural school is the main employer in rural areas, where both teaching and technical staff are employed; effective relationships between the school and the community help people to pool the local resources, which is necessary and important for the improvement of school environment;
  - the well-functioning rural schools increase the social integration of the community within the environment, securing the identity of local people and the importance of realizing a mutual task; *community rural school* operates as a centre for different community events with an aim to involve people in various civic and community matters; they also provide premises that facilitate getting together of community inhabitants in order to participate in physical activities, stage theatre plays, organize the meetings of the board of the school; the directors of rural schools should have a whole vision about the creation of mutually beneficial process of cooperation between the school and the community; especially rural schools serve as a symbol of autonomy, viability and identity of the community.

Since 2000 the theoretical and empirical research of the rural educational environment has been performed in the Institute of Education and Home Economics at Latvia University of Agriculture. Three stages of the research can be defined: 1) work on the basis of ecological approach in the research of education, creation of theoretic basis for the research of rural school educational environment, empirical research on the changeability of the rural school environment (2000-2005) [2; 4-7]; 2) the completion of methodological basis for the research (2005-2009) [26-28]; 3) empirical research on the changeability of the rural school educational environment (2008-2012), which was based on the results of the research performed in the previous stages and served as a continuation for the commenced research [3; 8-10].

The basis for the first empirical research (the first stage of the research): 277 rural schools, including 33 rural primary schools which participated in the internal investigation of the educational environment. The basis for the second empirical research (the third stage of the research): 60 rural schools, including 31 rural primary and secondary schools which participated in the internal investigation of the educational environment. Schools of both empirical research bases represented all regions of Latvia.

During the first research of the rural school educational environment a method of assessment was developed, an important factor being a specifically developed system of assessment indicators (altogether 128 indicators), which represented several levels of school educational environment and environmental contexts. In the second research the system of indicators for the assessment of school educational environment was modified (shortened), through analysis and evaluation retaining indicators that were the most essential and conforming to the contemporary conditions for the assessment of school educational environment (altogether 50 indicators).

During both empirical research stages the changes in the school educational environment were investigated during the respective periods (2000-2005; 2008-2012).

## Results and discussion

Both in the first (2000-2005), and the second (2008-2012) empirical research, all obtained data were processed applying the Sign test in SPSS software. The results of the research let to pinpoint several new tendencies in the development of rural school educational environment, which were equally conspicuous in the environment of schools - research basis for the first research, as well as in the environment of the schools - research basis for the second research. The most important of them are given below (Table 1).

- (A) In order to ensure their own and rural community sustainability, the rural schools broaden their target audience, including in their environment also pre-school children and adults, thus ensuring an opportunity for lifelong education in rural areas.

Table 1

**Some indications of several new tendencies in the development of rural school educational environment: the results of the research (2000 – 2005; 2008 – 2012)**

N	Indications	Results of Sign Test (2000 – 2005; N 33)		Results of Sign Test (2008 – 2012; N 31)	
		Differences	p-value	Differences	p-value
1	A	+ 19 - 0 = 14	$p = 0.000 < \alpha = 0.05$	+ 10 - 0 = 21	$p = 0.016 < \alpha = 0.05$
2	B	+ 10 - 0 = 23	$p = 0.002 < \alpha = 0.05$	+ 7 - 1 = 23	$p = 0.070 > \alpha = 0.05$
3	C	+ 9 - 0 = 24	$p = 0.004 < \alpha = 0.05$	+ 3 - 0 = 28	$p = 0.250 > \alpha = 0.05$
4	D	+ 8 - 0 = 25	$p = 0.008 < \alpha = 0.05$	+ 10 - 0 = 21	$p = 0.016 < \alpha = 0.05$
5	E	+ 17 - 0 = 16	$p = 0.000 < \alpha = 0.05$	+ 4 - 0 = 27	$p = 0.125 > \alpha = 0.05$

- (B) Rural schools expand the range of their offer of non-formal education, including the offer of professional development, interest-related education, offer of professional profile programmes etc. using the technical and material resources of the school.
- (C) Rural schools expand the range of their functions, assuming additional functions, including functions that are not typical to a school, for example, elimination of social negations and their prevention, as well as the functions of social rehabilitation in the rural community, taking care for children in the day centres of these schools.
- (D) With growing of the educational offer, increase of the target audience and the functions, the process of self-complicating in rural school educational environment has been observed. Different types of subdivisions of the environment are created (educational centres for adults, associations, school development funds, pre-school education centres within the framework of the school, centres for rural tourism, rural school as cultural centre etc.).
- (E) Schools become the informative centres of the whole rural community, developing and offering to the whole community the resources of their library and computer classes.

In order to evaluate the changeability of the rural school educational environment, both in the first (2000-2005), and the second (2008-2012) empirical research, on the basis of all obtained data, all indicators of the educational environment in schools were divided into two big groups: 1) indicators (features) that indicate the constancies or unchangeability of rural school educational environment, 2) indicators (features) that indicate the changeability of rural school educational environment. The data were processed checking the correspondence of feature selections applying the test for the determination of Chi-Square ( $\chi^2$ ) criterion in SPSS software.

The question of the research was as follows: *is the number of constant features equal to the number of changeable features of the educational environment in rural schools?*

The data were processed by means of SPSS software. We obtained the following results (Table 2, Table 3).

In the first empirical research it could be concluded that with the materiality level  $\alpha = 0.05$  and the degree of freedom  $df = 1$  the value of the Chi-Square criterion is:  $\chi^2 = 0.281 < \chi^2_{0.05;1} = 3.84$ ; but  $p = 0.586 > \alpha = 0.05$ .

However, the results of the second empirical research enabled us to conclude that with materiality level  $\alpha = 0.05$  and the degree of freedom  $df = 1$  the value of the Chi-Square criterion is:  $\chi^2 = 0.08 < \chi^2_{0.05;1} = 3.84$ ; but  $p = 0.777 > \alpha = 0.05$ .

Table 2

**Distribution of qualities according to the qualities group (2000-2005; 2008-2012)**

Groups of qualities	2000-2005 (N = 128)			2008-2012 (N = 50)		
	Observed qualities N	Indicative allocation N	Difference	Observed qualities N	Indicative allocation N	Difference
Constant qualities	67	64	3.0	24	25	1.0
Changeable qualities	61	64	-3.0	26	25	-1.0

Table 3

**The obtained results (2000-2005; 2008-2012)**

Indicators	Obtained values	
	2000-2005	2008-2012
Chi-Square ( $\chi^2$ )	0.281	0.080
df	1	1
Asymp. Sig.	0.586	0.777

The hypothesis  $H_0$  could not be given with 95 % possibility both in the first (2000-2005) and the second (2008-2012) empirical research. This meant that the number of qualities which indicated the constancies of rural school educational environment was statistically equal to the number of those qualities which indicated the changeability of rural school educational environment. These qualities were evenly distributed. This means that in Latvian rural school educational environment the process of bifurcation or splitting takes place: 1) the specifics of educational environment in rural schools is maintained, its traditional values; 2) the process of searching for innovations and changes takes place.

On the basis of our research results we could work out the classification of the rural school educational environment. There are the following environmental model groups of the Latvian rural schools.

*1. Traditional educational environmental models* offer the most widespread educational environmental models such as a basic or secondary rural school (functioning of schools responds to the Educational Law of the Republic of Latvia, the school functions correspond to pupils' audience accordingly to basic or secondary school educational programs). The operation of schools is without any changes because, firstly, *the school administration does not see any danger for the existence of schools and sustainability in future*, there is enough number of pupils and set of forms that have not substantially changed in the recent years, that is why the rural school does not want to change anything in its every day work because the basic audience is saved – schoolchildren and youngsters, secondly, *the school administration and personnel perceive danger for the existence of schools and its sustainability in future* because the number of pupils and forms have decreased or it has been always a situation that the amount of pupils and forms were very low. Therefore, the school as an environmental system is not opened to changes from inside (“*from the bottom*”), but it is waiting for favourable reforms from outside (“*from the top*”).

*2. Educational environmental models of structural reorganization* include multi-structural educational environment. It is related to comprehensive schools that as a result of the optimization in the time of the reform in 2009/2010 school year have become the component of the multi-structural educational environment or substructure: 1) they have become a multi-structural educational environmental center that has got one or more branch offices; 2) they have lost their independence and were joined to some rural secondary school or basic school in such a way becoming the branch office of this particular school.

3. *Multi-functional and multi-structural educational environmental models within the framework of one school* encompass rural schools that offer multi-divisional educational environment for all rural community because the rural schools are social-cultural environments which offer the formal and non-formal education in the aspect of life-long and wide-long learning. By broadening the target audience and functions in the aspect of a person's age period "down" – preschool and school age children and "up" – adult formal and non-formal education, rural schools as an educational environment system form new substructures.

4. *Combined (mixed) educational environmental models* include the features of a multi-structural and multi-functional educational environmental model. The rural school as a multi-structural educational center or as a branch office broadens its functions and increases its target audience by offering a wide range of formal and non-formal educational programmes.

## Conclusions

1. Already beginning with the 1970-ies till nowadays, an important place in the science of western countries has been given to the concept of a rural community school, and the theoretical basis and future development of it can be found in the publications of several western scientists, who point out the importance of interdisciplinary approach in the research of the educational environment.
2. In the 21<sup>st</sup> century in order to ensure sustainable development for itself and the whole community the rural school educational environment is continuously changing: many Latvian rural schools extend their educational offer and increase their target audience, widening the scope of the target audience's age and offered educational programmes, assuming additional functions and self-complicating the structure of its educational environment.
3. The results of both empiric research phases testify that the process of bifurcation or splitting takes place: 1) the specifics of educational environment in rural schools is maintained, its traditional values; 2) the process of searching for innovations and changes in rural school educational environment takes place. This reveals the uninterrupted changeability of rural school educational environment.
4. Having assessed the threats of external environment and their own inner potential, rural schools become the educational environment for the whole community thus finding efficient and productive means for sustainability provision, resources and ways (means) that create a great diversity of models for a school as community educational environment. This changeability and diversity of rural schools provide opportunities for the solution of the issue of balanced development in the *urban-rural* dimension in Latvia, which facilitates the sustainable development of rural cultural environment in Latvia in general.
5. On the basis of the results obtained during the research, all models of rural school educational environment can be divided into four groups: 1) traditional educational environmental model; 2) educational environmental models of structural reorganization; 3) multi-functional and multi-structural educational environmental model; 4) combined (mixed) educational environmental model.

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