

Ivana Krupová

Scientific-technology literacy's development in primary education by traditional folk crafts

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PaedDr. Ivana Krupová, PhD.

Pedagogická fakulta Katolíckej univerzity v Ružomberku

Inštitút Juraja Páleša v Levoči

SCIENTIFIC-TECHNOLOGY LITERACY'S DEVELOPMENT IN PRIMARY EDUCATION BY TRADITIONAL FOLK CRAFTS

INTRODUCTION

Nowadays, there is typical that globalization permeates each area of culture. It leads to the disappearance of individual distinctions among particular cultures, and to the imitation of behavior's models. It is not half-side negative feature, if child interests about others cultures, because multicultural education's development is encouraged in the process of education. But, the negative feature is the negation of one's own national identity and forgetting about national or regional traditions. As J. Skalková (2000) pointed out, these characteristics occur more and more important: the desire of free life without obligations, disinterest about public things, the lifestyle of an individual self-satisfaction. But, what is the worst, current school has been not prepared enough for solving the complicated problems of young people, yet. One of the main task of education is to help young people to search their own standpoints to the global problems of mankind, and also to find suitable countenance among traditions and modern world. In the context of the globalization it can be reflected about the educational and formative value of human work. Work creates the inseparable part of general education.

REGIONAL EDUCATION IN SLOVAKIA

Regional education in its content integrates the knowledge of various disciplines, such as history, ethnography, geography, science, linguistic, technique, environmentalist, and the like) which facilitate pupils to recognize surrounding area, town, region, state, and world from complex view. In this manner, regional education participates in the all-purpose development of pupils in primary education. It leads not only upheaval of national consciousness, but also leads to knowledge about cultural and nature values, emotions of their domicile, village, region, state. That is the partial part of lifelong education. If a pupil has to create strong national consciousness, he would have to recognize all of beauties and curiosities of nature, the works which human create by activity, the history and traditions of own nationality (Korim, V., Michal, P., Michalová, J., 1995). The intimacy and strictness of knowledge about surrounding living area (Krajčířiková,



Ľ., 2009) influences the observance and love of the one, nationality, which is the base of regional education.

In 1989, an important stimuli for awareness of the need of renewal, renovation, preservation, and development of national cultural traditions was the realization of the 25th General Conference UNESCO in Paris. The need was emphasized in the *Declaration of traditional folk culture preservation* adopted on 15th of November 1989 (Čellárová Ľ., 2002). The guideline of the Government of Education and Science from the 22nd of November 1993 was focused on experimental verification of the organization of educational forms and content, and also the way of school management, which opened the way of school conception changes (Revajová Ľ., 2001).

By reason of the support of regional specifics' implementation into educational process, in the school year 1991/92 the project of regional education in the villages of Liptovské Sliache and Malatiná started. The project was supported by the Matica slovenská and the Prebudená pieseň foundation. The activities focused on region and regional tradition's recognition was integrated into educational process. The main aim was to connect school with the life of a village, their culture, a wider region, and also to develop the national consciousness of pupils. The results of such education was at first presented by primary teachers in the national seminar *Interaction relation between regional culture and education* in May of 1993 in the village of Liptovské Sliache (Revajová, Ľ., 2005).

On the ground of successful experiment, in 1994 the national seminar *Upheaval of national consciousness in educational process* was realized under the auspices of the Matica slovenská, the Government of Education and Science, and Primary school of Liptovské Sliache. The number of schools applied the project were risen.

In 1997, the Association of educators from schools with advanced regional education and folk culture was established in Liptovské Sliache. The main aim was to connect the educators who were interested in the activity in regional education and its integration into educational process. The important targets were nationality development, the deepening of relation to Slovak nationality, national consciousness uprising, the preservation, renewal and renovation of nature and cultural heritage and the support of local and regional culture (the Statute of the Association of educators from schools with advanced regional education and folk culture). The first national seminar of the Association was realized in June of 1999 in co-operation of the Liptovské múzeum (Liptov Museum) in Ružomberok. On the seminar *Regional education and folk culture in Slovak education* the idea of effectiveness and need of regional elements integration into educational process was verified. (Korim, V., 2002). The other conferences were realized.

The conference *Regional education and folk culture in preprimary and primary education* was realized in May of 1993 in Slovenská Ľupča. The village of Slovenská Ľupča became the residence of the Association. Since 1993 the activity of the Association was signed off, but the interest of educators about the regional problematic has

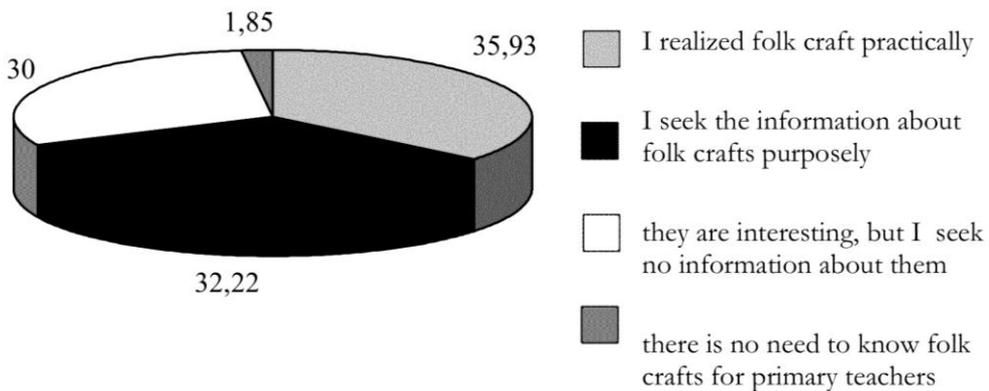


survived, and they have still applied regional elements into educational process. In 1996 the village of Detva occurred the centre of the Association.

At the present time, a plenty of experts deal with the problematic of regional education, especially at universities. The theme of regional education is the motive of bachelor, diploma, or postgradual thesis, scientific projects, and also it is the part of university preparation of future teachers. The theme was the problematic of various conference, for instance *Regional education and school* in 2002, or *Cultural heritage in Primary education* in 2008, organized by the Faculty of Education in Banská Bystrica.

TEACHERS' RELATION TO TRADITIONAL FOLK CRAFTS' APPLYING IN PRIMARY EDUCATION

On the ground of answers of 202 primary teachers on questionnaire (Krupová I., 2007) we were founding out how their relation to traditional folk crafts' applying in the process of education is. Teachers were to mark one of the sentences which most represent their opinion. The results are presented in the 1st graph.



Graph 1 Respondents' relation to traditional folk crafts [%]

The respondents who marked the first possibility, eventually who noticed they **realised folk craft practically** (35,93%), mentioned mainly such crafts as: *needlework* (25,35%), *tailoring* (15,21%), *gingerbread-making* (11,05%), *bakery* (10,14%), *weaving* (3,23%), *tinkery* (2,73%), *coloring* (1,84%), *basketry* (1,84%), *pottery* (1,38%), *carving* (1,38%), *candle-making* (1,38%), *jewel-making* (1,38%), *knitting* (1,38%) and others. Some of respondents pointed out that they visited the House of crafts in Slovenská Lupča, the Workshop of folk crafts by Middle Slovak edifying centre in Banská Bystrica, they realized the Day of folk crafts where the family members of

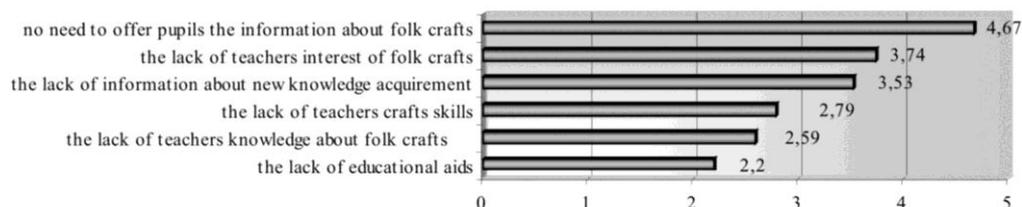


pupils presented the demonstrations of folk crafts. The 2,48 per cent of respondents noted no answer.

The respondents who marked the second possibility, i.e. who **seek the information about folk crafts purposely**, mentioned mainly such crafts as: *gingerbread-making* (6,72%), *needlework* (6,72%), *lace-making* (5,04%), *tinkery* (5,04%), *bakery* (5,04%), *pottery* (4,62%), *jewel-making* (4,62%), *weaving* (4,62%), *basketry* (4,2%), *blueprint-making* (3,78%), *carving* (3,78%), (3,78%), *tailoring* (3,36%), *furriery* (1,26%), and others.

The third possibility was marked by 30% of respondents who think that **traditional crafts** are interesting, but they seek no information about them. Only 1,85% of respondents marked the fourth possibility, so they have opinion that **there is no need to know folk crafts for primary teachers**.

The main reasons for not using folk crafts in educational process were following:



Graph 2 The reasons for not using folk crafts in educational process

The respondents noted the value from 1 to 6 to particular reasons (value 1 represents the most importance; value 6 represents the less importance). Some of them noted the same value to more possibilities of marked only the most and the less important reason. There is calculated the average of all the values marked by the respondents.

As graph 2 presents, according to respondents' opinions, the main reason for not using folk crafts in educational process is **the lack of educational aid** (average value 2,2) . It can be assumed that enough educational aids to the theme of folk crafts would lead to more intensive using of folk crafts in the process of education. As the second most important reason was marked the **lack of teachers knowledge about folk crafts** (average value 2,59) As the less important reason was marked **no need to offer pupils the information about folk crafts** (average value 4,67), and the **lack of teachers interest of folk crafts** (average value 3,74). The results correspond with the act that respondents have a great interest of acquirement the new information about traditional folk crafts, according to our other research results (Krupová, I., 2007).



THE NEED OF SCIENTIFIC-TECHNOLOGICAL LITERACY OF PUPILS

At the present time, a scientific literacy, eventually scientific-technical or scientific-technological literacy occurs more and more important. According to E. Held (In Kolláriková, Z., Pupala, B., 2001) it is created by the acquaintance with scientific facts, concepts and processes, the understanding of research methods, and the understanding of science and technology's task in society. The science and the technology are interactive and coherent components which are the part of everyday life. For our culture, the science is useless without technology, and technology is useless without science. Technology is the process by which the knowledge from science into technique is transferred, and by contrast, knowledge from technique into science is transferred. So in spite of the term of „scientific-technical“ is commonly used, the authors K. Teplanová a V. Biznárová (1997) emphasize the term of „scientific-technological literacy“.

Scientific-technological literacy is connected mainly with the understanding of nature, and basic principles on which the human products are created. There are the aspects which include the awareness of nature's fragility and vulnerability, and also the possibilities and consequences of synthetic human world, which relate to an individual's relation to own life, his own environment in a broad. It is not about encyclopedically knowledge. But approaches, environment and the way of knowledge's acquirement are important (Teplanová, K. – Biznárová, V., 1997).

The historical production technology of various useful things is different from the production technology the same function which is use at the present time. In the past, folk craftsmen used different technologies, different materials and tools, and also the time of product creation was different. By acquaintance of pupils with various technologies of useful things production we consider as suitable to start with traditional craft technologies. An educational area Human and the world of work in the State Educational Program for Primary Education in Slovak Republic (2008) includes the suggestions of work activities and technologies which can lead to the acquirement of basic skills from various areas of human activity and which can contribute to the reverence of work. The area includes also traditional crafts technologies.

PROJECT „BY THE TRACES OF FOLK CRAFTSMEN...“

On the ground of the theory of cognitive conflict (Larochelle M., Deautels J., 1992; Bertrand, Y., 1998) the process of pupils recognition's development can be divided into three phases:

- 1) **finding out the pupils' imagination about given theme,**
- 2) **the confrontation of pupils' imagination with new information,**
- 3) **the reconstruction of pupils' imaginations.**

According to upper approach to the building of recognition and the emotional development of cultural heritage and traditions we suggested the project, which



was focused on, that pupils should know to analyse a traditional craftwork (e.g. canvas, woven carpet, dipper, needlework, horseshoe, honey gingerbread.), acquire the information about used material and technology by own research activity (e.g. by seeking the first information in literature, seeking the contacts of folk craftsmen which active work till now, by planning the excursion to folk craftsmen); on the ground of acquire information they should be able to apply traditional crafts technology and create simple craftworks.

1) Finding out the pupils' imagination about given theme. Pupils are asked to formulate and discuss their understanding of study event, and also the guess of its continuing. It is important to most effectively organize the pupils' discussion, and find out how are their **before knowledge and experience** with study event.

In this phase pupils observe traditional folk craftworks. Their task is to express their imagination about how they were created (from which material, by which technology, and the like). It is very important to facilitate interactional discussion of pupils, because normally in a class pupils with various pre-concepts are. By facilitating the confrontation of various pupils' opinions they are encouraged to more active thinking about study events. Pupils also improve their communicative and social competence, they learn to express own opinion, to listen the opinions of others, to react on them suitably, to argue, to respect the opinions' plurality. Similarly, by the activity, the competence of problem solving is developed, because pupils suggest the solutions of the problem according to their knowledge and experience from given problematic.

2) The confrontation of pupils' imagination with new information. Pupils are confronting with an event hardly explainable in the frame of their imagination, and its continuance contradicts their guess. Such events should cause the pupils' cognitive conflict, which results from the distinction between their expectation and observing events.

In following way pupils have to acquire the most amount of information about study event from various sources (e.g. pupils can visit library – during the educational process or their leisure time). The other way of searching information can be taking the craftwork to pieces and the attempt of take it together again, but this approach requires to have special educational aids. Anyway, the most effective way of studying the problematics are the authentic experience. Therefore, pupils have to seek the contacts on current folk craftsmen from their nearby surrounding. The unique way of the development of pupils' problem solving competence is the planning of excursion to folk craftsmen. At first, pupils have to suggest various solutions and ways, make arrangements about the most suitable one, learn to adequately communicate with unknown people by using of more communicative media.

The pupils' task is not only to get excursion's planning and realization under control, but also to prepare expertly on the excursion – on the ground of



studying literature, to arrange on questions which pupils want to ask craftsmen, to divide the responsibility of tasks' solution, to find the suitable way of notation of observed and investigated events (by video, photos, notes, collection of material and craftworks from craftsmen, and the like).

- 3) **The reconstruction of pupils' imaginations.** Pupils practice various activities (discussions, research activities, observations, experiments, practical activities, project creation, etc.), which are aimed on to help pupils in solving the problem connected to new theme. The solution should lead to change and improvement of pupils' imagination about studying event.

The third phase, focused on the building of process of pupils' recognition about the craftwork creation, follows in class. Pupils would have the plenty of collected material (real or documentative) which can help them in the reconstruction of self-imaginings. It is need to prepare obtained material, and on the ground of them it can be reconstructed the traditional technology of traditional creation. The practical activity of pupils is necessary – they can recreate craftworks from real or alternative matters. A teacher have to have prepared the plenty of activities by which pupils would use the knowledge, experience and skills obtained in the process of their research work. The activities would have the form of complex project in which pupils would be encouraged to consider in an integrated way, to connect various kinds of information, to use them in atypical situation. Pupil can solve the projects, e.g.: creation of book about the traditions of cooperage, weaving, blueprint-making, carving, pottery, and the like; to suggest the outline on simple craftwork creation, to make a documentary film about chosen craft.



Image 1 Studying of literature



Image 2 Excursion to weaver

CONCLUSIONS

Slovakia boasts of the wealth of crafts traditions, even many of them are still practised. In present time, characterized by fast lifestyle, the traditions have gradually vanished. It is more and more difficult to hand the craft's heritage in young generation. A school is a place which would offer experience of regional or national traditions to young people. But, it requires teachers educated in such area.



A teacher's personality is the most important educational factor (Akimjaková B., 2009). The realisation of mentioned project require from a teacher not only a plenty of knowledge about folk crafts, but also positive relation to them. A teacher can be the medium of cultural heritage of our country. He can effectively influence pupils, the development of their recognition, technical thinking, manual skills, aesthetic feeling, local, regional and national consciousness. A factographical material about chosen folk crafts in the form suitable for primary teachers was published in monography *Chosen specifics of regional education in Banská Bystrica's surrounding* (Krupová, I., 2007). The book includes also CD with photos and videos about traditional folk crafts.

Ivana Krupová

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**SUMMARY****Scientific-technology literacy's development in primary education by traditional folk crafts**

The paper deals with the emphasize of need of scientific-technology literacy's development in primary education. The using of traditional folk crafts is considered as suitable medium. The author emphasizes the theory of cognitive conflict, and on the base of three steps a suggested educational project is described. The project focused on scientific-technology literacy's development and the regional consciousness development by using of traditional crafts technology in primary education.

Keywords: education, craft, literature, tradition, cognitive science, educational project, regional awareness.

STRESZCZENIE**Rozwijanie piśmienności przyrodniczo-technologicznej w edukacji początkowej za pośrednictwem tradycyjnego rzemiosła ludowego**

Artykuł skupia się na akcentowaniu potrzeby rozwoju piśmienności naukowo-technologicznej uczniów w edukacji prymarnej. Za odpowiedni sposób można uważać wykorzystanie tradycyjnego rzemiosła. Autorka podkreśla teorię konfliktu kognitywnego i na podstawie trzech kroków opisuje proponowany projekt edukacyjny orientowany na rozwój piśmienności naukowo-technologicznej uczniów oraz rozwój ich świadomości regionalnej poprzez tradycyjne rzemiosła ludowe.

Słowa kluczowe: edukacja, rzemiosło, piśmiennictwo, tradycja, kognitywizm, projekt edukacyjny, świadomość regionalna.

