

Verification of activating teaching methods applied in primary school

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Abstract

The paper presents an overview of teaching methods applied in primary school. Activating and other teaching methods commonly used in primary school are described and compared. The author defined three hypotheses that were tested by means of a questionnaire survey. Activating teaching methods were observed for frequency of use and preferences. The survey also deals with the application of teaching methods depending on teacher age and level of education.

Key words: the activation methods, questionnaire survey, teacher, curriculum reform, teaching method

1 Current view of teaching methods

Contemporary modern education views teaching methods much more in a comprehensive perspective than ever before and focuses more on natural and stable incorporation of these methods in the educational process.

At present, teachers are provided with a large number of teaching methods. Their implementation and free selection is also facilitated by the current curriculum. Through a free concept and creativity of the curriculum, the framework educational programmes allow teachers adequate and full professional self-realization. The variability of the methods applied is crucial in meeting the requirements for an individualized approach.

However, it is also important to note that no method acts in isolation but belongs to a complex of other factors affecting the teaching process. Each method is also closely linked with organizational forms of the teaching process. According to some authors (Maňák et al., 2003; Nelešovská et al., 2005) in certain cases the terms 'organizational form' and 'teaching method' are often confused and blended in meaning. We could simply say that a teaching method conveys the content of teaching to the students, and through the surrounding reality facilitates understanding and learning about the world they live in and are educated in. At this stage, teaching methods combine well with the content of teaching to reach the objectives of the educational process.

As mentioned above, some authors consider the teaching method a way of fulfilling teaching objectives. Therefore, the difference between the traditional concept of teaching models and non-traditional applications of teaching methods must be made. To a large extent, traditional methods include the activities, management and a dominant role of the teacher. There is also an opposing view of the teaching method preferring maximum pupil involvement in the educational process with a non-dominant teacher role. This approach requires a high degree of commitment on the part of students who should be interested in the content of teaching and use this method as a way of reaching their objectives.

To a large extent, the suitability and application of an appropriate and adequate teaching method in the educational process depends on the teacher. However, it would be incorrect to assume that only modern progressive methods are suitable for today's education. There are many pupils who require an individualized teacher approach; and some methods, ranked among modern and activating approaches, are unsuitable due to their action-like nature. It should be noted that through teaching methods and through fulfilling defined objectives, pupils acquire a number of skills, habits and attitudes, i.e. key competencies that further shape the pupils' personality and affect their life and professional orientation. Therefore, teaching methods should be understood and applied in a wider context.

The teaching method was described as a set of teaching activities of the teacher and learning activities of the pupils. According to Maňák and Švec (2003, p. 26) *"Teaching activities of the teacher as well as learning activities of the pupils include both **external activities** (observed) and **internal activities**. Teaching methods are usually described through the observable activities of the teacher and pupils (e.g. teacher's explanation of new subject matter, cooperative pupil activities during group work)."*

Teaching and learning activities include the following:

- Activity motive,
- Activity objective,
- Activity planning,
- Operational activity image (what should activity look like),

- Activity implementation (practical),
- Processing continuous information on activity correctness, adequacy and functionality,
- Decision making,
- Checking of activity results,
- Correction of further action.

By cyclic repetition of the components of teaching and learning activities, these activities are gradually adopted and improved. An important criterion in selecting appropriate methods is the teacher personality. Selecting an appropriate and adequate method influenced by teacher experience is based on a comprehensive approach to the subject matter with respect to the links between the fundamental components, structure and dynamics of the educational process.

The classification of teaching methods has been addressed by many experts (Maňák et al., 2003; Nelešovská et al., 2005; Kasíková, 1997; Kalhous et al., 2002); however, there is no unanimous agreement on a comprehensive and specific classification system of teaching methods. To develop a system of classification of teaching methods that would be suitable for all stakeholders and that would meet scientific procedures and be exhaustive seems a very difficult task. Many authors disagree on the classification of the division criteria.

Activating methods that support active thinking of the pupils and allow new methods of work, e.g. involving children in various projects or problem solving situations, should be used more often. For these reasons, pupils should be adapted to various methodical approaches and rational learning methods. Pupils should be provided with all competencies offered by the new curricular reform and implemented by the Framework Educational Programme for Elementary Schools (referred to as RVP ZV). These competencies can be formed and achieved by activating teaching methods.

"Activating teaching methods are educational procedures that achieve educational objectives primarily through own learning work of pupils, while emphasis is put on thinking and problem solving (Jankovcová et al., 1988, p. 84)." There is a number of activating methods.

A comprehensive concept of teaching methods is closely linked with the organizational form of teaching. Some authors (Maňák et al., 2003; Nelešovská et al., 2005) claim that the method of teaching significantly interferes with and changes the organization of lessons. The selection of an appropriate teaching method also determines the respective organizational form.

According to Švec and Maňák (2003, p. 131): *"...comprehensive methods provide teaching approaches with additional organizational forms and didactic means and reflect overall educational objectives to a greater extent than the previous groups of methods."*

With respect to these requirements, current emphasis is placed on the selection of methods through which significant pupil activation is achieved, and also problem-

oriented and heuristic methods that guide pupils to develop their own problem-solving approaches and to a large extent enhance their creativity.

According to Maňák and Švec (2003. p. 131), comprehensive methods differ from traditional and activating methods primarily because: *"...these are complex methodological structures that require a various but always coherent combination of and association between several crucial elements of the didactic system, such as methods, organizational teaching forms, didactic means or life situations."*

2 Research survey

The above mentioned facts that are also discussed in literature raised numerous questions and issues. These became the focus of the research survey.

The objective of the survey was to find out whether teachers use activating methods more than traditional or comprehensive methods and whether this is associated with their age or length of teaching experience. We also developed a research tool (questionnaire), which was provided to teachers in the survey schools to be used as a self-evaluation tool to investigate the application of activating methods in the educational process. The survey itself was based on a questionnaire method. The obtained data was evaluated and processed in an Excel spreadsheet and converted into charts and tables.

The questionnaire was structured according to general rules (Chráska, 2007). The questionnaire was designed to meet the research objectives and to address the respective research issue.

The first part of the questionnaire presents to the respondents the information, opinions and statements related to the research and explains the necessity of a questionnaire survey in monitoring the application of teaching methods. The questionnaire further specifies the procedures for filling in. The second part includes a total of 23 items aimed at monitoring the changes in strategies and methods.

2.1 Definition of the research sample

A total of 50 schools were asked to participate in the survey. As a result of the fact that many schools refused to cooperate if addressed in written, we approached them in person. Elementary school teachers involved in the research study were divided for objectivity reasons by means of stratified selection into subgroups according to the length of their teaching experience. From each subgroup a certain amount of teachers were randomly selected to make sure that all categories were included in the survey.

The research tool was distributed in person. The questionnaire research was carried out in elementary schools in the Olomouc Region and Moravian-Silesian Region

in the Czech Republic. The questionnaire was submitted to teachers in the first level of elementary school. The teachers addressed were from fully organized schools as well as mixed-class schools. A total of 203 teachers were addressed. Out of the total of 203 addressed teachers, 186 respondents returned the questionnaire monitoring the application of teaching strategies (methods), 17 questionnaires had to be rejected. For anonymity reasons, the questionnaires specified neither the name of the respondent nor the school.

Regarding the high rate of return of the questionnaires as a result of personal contact we believe that teachers are interested in what happens in their school and want to take an active part in improving the quality of the educational process with respect to the newly defined objectives.

In dealing with the issue we asked the teachers the following question:

Do you rather use traditional teaching methods and strategies or do you try to apply activating or problem solving teaching methods?

Based on the definition of the research objective the following material hypotheses were formulated:

Hypothesis No. 1:

In the educational process in elementary school traditional teaching methods prevail over activating and comprehensive teaching methods.

Hypothesis No. 2:

Teachers older than 36 years of age use traditional teaching methods more often than younger teachers.

Hypothesis No. 3: Activating methods are used more frequently in the first level of elementary school compared with the second level.

2.2 Analysis of obtained data

The data acquired through the questionnaire survey was evaluated and processed in an Excel spreadsheet and was used to verify the hypotheses by means of the Pearson's chi-squared test of chi-squared independence for a contingency table.

These tests of significance were used because we monitored the dependence between two pedagogical phenomena captured by means of nominal measurement.

Evidence base for hypotheses

Hypothesis No. 1

In the educational process in elementary school traditional teaching methods prevail over activating and comprehensive teaching methods.

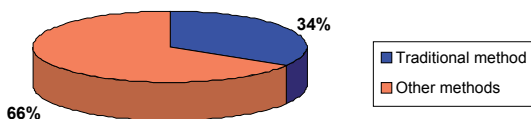
Null hypothesis H_0 : The frequency of preferred teaching methods used in the educational process is roughly identical.

Alternative hypothesis H_1 : The frequency of preferred teaching methods used in the educational process varies.

Table 1: Respondent answers to the question on prevailing teaching methods in the educational process in elementary school.

	P	O	(P - O)	(P - O) ²	(P - O) ² /O
Traditional methods	407	400.33	6.67	44.44	0.11
Other methods	794	800.67	-6.67	44.44	0.06
Σ	1201	1201			0.17

Chart 1: Respondent answers to the question on prevailing teaching methods in the educational process in elementary school.



The critical value of the test criterion for the level of significance of 0.05 for a contingency table and three degrees of freedom is $\chi^2_{0.05} = 3.841$.

The calculated value of the test criterion is lower than the critical value; the alternative hypothesis can thus be rejected and null hypothesis accepted.

Partial conclusion: As far as the teaching methods are concerned we made a conclusion that the preferences of various teaching methods are evenly distributed. Comprehensive and activating methods do not prevail over traditional methods and teachers apply the methods evenly.

Further in the research we focussed on the effect of teacher age on the preference of the different teaching methods.

Hypothesis No. 2

Teachers older than 36 years of age use traditional teaching methods more often than younger teachers.

Null hypothesis H_0 : There is no dependence between the reported frequency of traditional teaching methods and the age of the teacher.

Alternative hypothesis H_1 : There is dependence between the reported frequency of traditional teaching methods and the age of the teacher.

Table 2: Respondent answers to the question on the frequency of use of traditional teaching methods

	Younger than 36		Older than 36		Σ
1. (More frequently)	143	(124.48)	264	(282.52)	407
2. (Equally)	352	(382.91)	900	(869.09)	1252
3. (Less frequently)	39	(26.61)	48	(60.39)	87
Σ	534		1212		1746

Chart 2: Answers of respondents younger than 36 years of age to the question on the frequency of use of traditional teaching methods

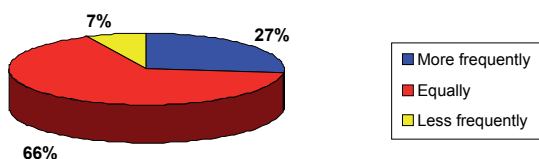
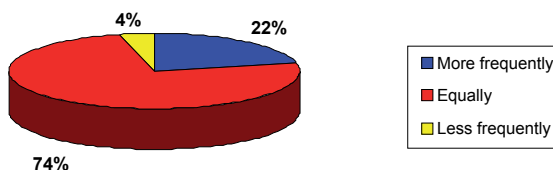


Chart 3: Answers of respondents older than 36 years of age to the question on the frequency of use of traditional teaching methods



The critical value of the test criterion for the level of significance of 0.05 for a contingency table and three degrees of freedom is $\chi^2_{0.05} = 5.591$.

The calculated value of the test criterion is higher than the critical value; the null hypothesis can thus be rejected and alternative hypothesis accepted.

Partial conclusion: The preference of the use of traditional teaching methods depends on the age of the teacher. Teachers older than 36 years of age apply traditional teaching methods more frequently than younger teachers. By verifying the hypothesis we

confirmed the assumption that older teachers prefer traditional education rather than adopting any changes even though such changes are feasible.

We also focussed on whether the use of activating methods is influenced by the level of elementary school.

Hypothesis No. 3

Activating methods are used more frequently in the first level of elementary school compared with the second level.

Null hypothesis H_0 : There is no dependence between the reported frequency of activating teaching methods and the level of elementary school.

Alternative hypothesis H_1 : There is dependence between the reported frequency of activating teaching methods and the level of elementary school.

Table 3: Respondent answers to the question on the frequency of use of activating teaching methods

	First level teachers		Second level teachers		Σ
1. (More frequently)	273	(263.65)	76	(85.35)	349
2. (Equally)	400	(419.27)	155	(135.73)	555
3. (Less frequently)	56	(46.08)	5	(14.92)	61
Σ	729		236		965

Chart 4: Answers of first level respondents to the question on the frequency of use of activating teaching methods

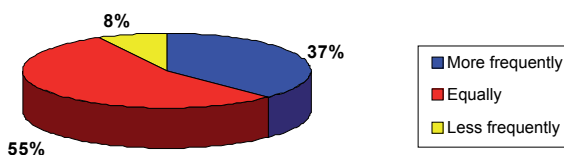
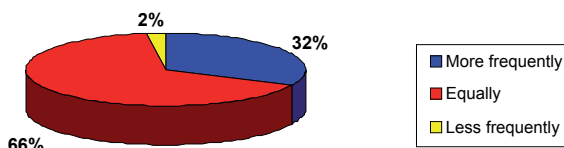


Chart 5: Answers of second level respondents to the question on the frequency of use of activating teaching methods



The critical value of the test criterion for the level of significance of 0.05 for a contingency table and three degrees of freedom is $\chi^2_{0,05} = 5.591$.

The calculated value of the test criterion is higher than the critical value; the null hypothesis can thus be rejected and alternative hypothesis accepted.

Partial conclusion: The preference of the use of activating teaching methods depends on the level of elementary school. Activating methods are more frequently used in the first level of elementary school compared with the second level. This finding corresponds with the specifics of primary school. Activating teaching methods are used with respect to various age categories. The younger the individual, the more it appears to be necessary to apply experiential learning in order to anchor cognitive knowledge in a permanent and accessible way.

3 Conclusion of the survey results

As mentioned in the initial chapter, teaching methods are dealt with by many authors. This issue is still very topical, particularly in the context of reviewing the current curriculum. After introducing the curricular reform in 2007, all stakeholders involved were convinced that teachers would accept the changes without complications and that activating methods would be used on a larger scale together with changed learning strategies focussed more on experiential learning. In 2013 it was revealed that the objectives are not fully achieved; therefore, the curriculum needs reviewing. This fact also influenced the use of the mentioned teaching methods.

In conclusion, attention should be drawn to the findings of the study, which indicate that teachers in the first level of elementary school approach activating and other comprehensive teaching methods more actively compared with second level teachers. This is likely to be caused by the specifics of primary school. The years of experience may confirm that these activating teaching methods and various teaching forms were used even before the reform because teachers working with younger-school-age children are required to adapt the style of teaching to their capacities and abilities and to attract and approach pupils.

It is also obvious that older teachers tend to use traditional teaching methods. These proven stereotypes can hardly be changed by the curricular reform.

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