APPLICATION OF INTEGRATIVE TEACHING IN PRIMARY SCHOOL TEACHING PRACTICE

UDC 37.026.9

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Abstract. Integrative teaching today appears as one of the most effective ways to train future teachers studying in university education departments or higher vocational schools in the realization of the educational goals and tasks of the modern school. This paper deals with the issue of integrative teaching, its basic characteristics, organization and significance. Theory and practice point to the exceptional values and significant effects of this innovative teaching model. The paper contains the example of integrative day articulation in relation to the topic of Winter in the second grade of primary school, which can be used by teachers for both practical implementation and individual preparation of integrative classes.

Key words: integrative teaching, innovative work model, contemporary school, effects of application.

1. INTRODUCTION

The second decade of the 21st century is characterized by numerous changes in all areas of social life, with globalization being one of the changes that have initiated all the others. It can be understood as a mysterious phenomenon that provokes multiple and dramatic changes in all dimensions of life and work (Mitić & Stanojević, 2014). The newest scientific and technological achievements in almost all areas of life and work in contemporary society, impose a need to introduce systematic and qualitative changes, with the goal of overcoming existing problems and contribute to the progress and development of society. Scientific consideration of social reality should indicate guidelines on fulfilling newly arisen people’s needs so that better conditions for coexistence, cooperation and social integration could be created (Stanojević & Zdravković, 2010). Observed from a sociological, economic, technological and cultural point of view,
the introduction of innovation is inevitable, because it represents a good model for the shaping of the modern way of life. When we speak of the possibilities on which modern societal development rests, we need to place a particular emphasis on the development of education, since knowledge is the only sure resource that initiates and correctly guides this development.

In agreement with the demands of the times, the content of education in contemporary primary school needs to be flexible, often questioned and reconsidered, in order to prepare students for its adoption. Above all it should reflect a whole complex of problems rather than shorn, independent and isolated elements. It is necessary to examine knowledge, understanding, processes, attitudes, interests and the like as integrated individual elements which represent actual problems and aspects of change in the contemporary world.

As the necessity for interdisciplinary approaches is increasingly felt to address different scientific, economic and social requirements, a demand arises that an explanation of the meaning of the dynamic and functional unity among different disciplines should follow. For these reasons integrative teaching, as one of the more innovative teaching models which links the teaching content of several subjects, appears as an opportunity to achieve the goals of the modern school.

As its basis, integrative teaching bears the idea of the wholeness, structure and universality of the bonds that exist between object and reality. This teaching model views the world as a whole and studies it as such. Activities and content which are linked together contribute to a knowledge that is whole, valuable and useful. Integrative teaching is a process in which individual elements are integrated, interpenetrate each other and join into an integrated whole; and thus composed they possess a whole new meaning. This model of learning involves looking at problems from different aspects, angles and sides. Information is best acquired and retained when it can be linked to a comprehensible network of meanings. This creates knowledge that can be looked at from different perspectives, that is, as functional knowledge.

The idea of the integrity of teaching appears fairly early. The renowned Czech pedagogue, Jan Amos Komensky, the creator of the teaching system by subject, noted precisely that teaching by subject matter leads to an excessive fragmentation of the content of the teaching. As a result of this he recommended that the teaching content be grouped into natural and logical lessons that could be worked on and cultivated within the framework of certain topics. Komensky’s idea did not enjoy practical fruition so that integrative teaching as a model was applied much later (Vilotijević, 2006).

It is well known that the theoretical basis for integrative teaching was provided by Gestalt Theory, according to which organization and wholeness are the most important features of the psychic processes and behaviour of individuals. In this regard, while learning, “it is most important to understand relationships in an organized whole, to understand the elements as firmly connected parts of an organized whole” (Vilotijević 2006, 13).

In the course of the 20th century, many pedagogical movements and tendencies appeared that included attempts at implementing integrative teaching. Among many we wish to highlight the concept of the active school of A. Ferrier and the project and method of J. Dewey and W. Kilpatrick. Exemplary teaching also contains the concept of the integrative processing of different teaching material.
2. THE CONCEPT AND BASIC CHARACTERISTICS OF INTEGRATIVE TEACHING

The concept of integration can most basically be explained as the unification of certain parts into an integrated whole and the interconnectivity of individual elements. Bearing in mind this explanation of the concept of integration, an integrative approach to teaching can be viewed as learning based on the combination of content and activities that are mutually correlated, in order to contribute to the acquisition of knowledge that is purposeful and comprehensive. Only this way of gaining knowledge can be functionally applied to reality. The process of gaining a more profound knowledge is founded on observing the object of research as a part of a single whole, and this is the essence of integrative learning; in other words, mutual permeation and unity of individual elements into one complex whole thus resulting in a completely new meaning.

In the literature we come across integrative learning under different names: integration of teaching, concentration of teaching, correlation of teaching, joint teaching, complex system. All of these conceptual terms have their own explanations but their common goal is the elimination of the negative consequences of teaching by subject matter (Vilotijević & Mandić, 2015).

It is believed that the notion of integrative teaching was most fully explained by Lake, who understood it as:
- complex research into knowledge of the different facets of life related to the students’ life;
- a rational perusal of different teaching fields and the unification of different elements into logical thought units that would truly reflect the reality of life;
- unique common hubs of knowledge that encourage students to discover relationships, create models, systems and structures;
- application of a methodology and language of several subjects for the study of man topics problems and experience;
- the merging of different subject areas into one, in the manner in which children master objects and phenomena in everyday reality, embracing them in a whole and unique process;
- new way of thinking;
- preparing for the application of knowledge to new situations, the transfer of knowledge through adopted thought models (Lake, 1994).

The essence of integrative teaching is a thematic approach that involves the integrated linking of content from different scientific disciplines or subjects within the selected topic. In that sense the concepts involved in the subject matter are enabled to be complexly built up, since the contents can be looked at from different aspects. “An integrative way of learning, which brings together experience, systemic thinking and are an original approach to the problem, is difficult to achieve by applying traditional curricula in which a rigorous subject differentiation is carried out” (Vilotijević & Mandić, 2015, 117). Today there is an understanding that this problem can most easily be solved by integrative programs focusing on general issues in complex areas. Naturally integration does not mean the abolition of subjects, but rather the establishment of a relationship that involves the existence of different subjects and the joint working of related content taken from various subjects.

It should be kept in mind that not all teaching content is suitable to be worked on using integrated teaching. A lot of teaching content requires a disciplinary approach to allow for a thorough study and mastering of the matter. In this sense it is necessary for
the teacher to carry out a detailed analysis of the curriculum in order to determine which approach should be applied to specific teaching content, with the goal of a more effective mastering and absorption of the subject matter. For a proper selection of content the teacher must methodologically and pedagogically well prepared. When it comes to an integrative approach, this means that the selection of topics is such that it provides the possibility for the content of related but different subject matter to interact with one another and to be mastered and learned in that way. This requires that one only selects teaching content that can be naturally linked. A kind of integration is already achieved within each teaching subject, but in order to make the effect even stronger, it is necessary to carry out an external integration. In the current teaching concept, there are subjects within which individual elements are integrated so that students already acquire comprehensive knowledge. In the classroom such subjects as Serbian language and the World around us, which is Science and Social Studies. Modern teaching practice pays special attention to the interdisciplinary connection of teaching materials, because intrinsic integration has largely been achieved.

The positive effects of implementing integrative teaching in everyday school practice: 1. students develop a sensitivity to problems with an ethical dimension; 2. students widen their ability to view matters horizontally; 3. the student develops the ability to synthesize and integrate facts he/she has learned; 4. creative, original and unconventional thinking is developed; 5. the ability for critical thinking is developed; 6. the student manages a balance between subjective and objective thinking; 7. sensitivity to bias increases; 8. students come to the realization that the opinion of one expert is not final (Ivanitskaya et al., 2002). The positive results of implementing the integrative approach not only relate progress in the development of students, but this teaching model also has a beneficial effect on teachers as well. It provides them with a more dynamic organization of their time and a modern method of teaching, considering the fact that they are able to use numerous sources and resources in teaching (Gajić, Andevski & Lungulov, 2009). The success of students in learning is of course the most important value in the application of this innovative teaching model.

3. THE FORMS AND TERMS OF REALIZATION OF INTEGRATIVE TEACHING

The practical application of integrative teaching involves the preparation and realization of integrated lessons. This means that a particular problem, which can be studied from several aspects within different school subjects, must be posed. The most commonly integrated content is about scientific concepts, laws, theories, values systems, and, most of all, content about the objective phenomena that surround us.

A large number of authors speak about three forms of integration: complete, partial and in blocks. A form of complete integration implies the merging of different teaching contents into a single course. A partial form of integration consists in the selection of related content from the teaching material, which are then jointly worked on. A form of integration in blocks is characterized by the construction of freely programmed, autonomous blocks, or the separation of parts of a common program, which are then worked on in an integrated fashion. The implementation of integration by blocks usually involves a greater number of interconnected teaching lessons, for which, on these occasions, the timetable is adopted (Vilotijević & Vilotijević, 2008).
In practice the integration of related contents from different subjects is most often applied. The teaching sections are reinforced and organized by larger blocks that are continuously being trained; the teaching process is controlled throughout its duration and, if there are any deviations from the goals that had been set, corrective measures are taken or the goals readjusted if they had been unrealistically set.

Given that an integrative approach does not only mean the transmittal of facts but rather the solving of problems, the posing of questions and the active search for answers (Đordjević, 2007), its successful realization necessarily requires securing certain conditions and applying an adequate method and strategy of work. Integrative teaching most often involves different sources of learning, work in small groups, work outside the classroom, and observing classes as a workshop, creating student maps.

**Sources of knowledge** – In integrative teaching, learning is not linked to the use of only one textbook, rather students are encouraged to explore different possibilities when searching for sources of information. The school library plays an important role in integrative classes as well as librarians. The possibility of holding classes in a library room exists, where students, divided into groups, could independently carry out research and work on their class assignments.

Educational technology also has an important role to play in integrative teaching, and this in the form of computers. These can be used to perform numerous operations such as writing, making presentations, the writing and reading of blogs, researching and discovering information, data, testimonies and other various curiosities. Therefore students from the very start should be trained to be able to carry out searches in various computer databases in order to be able to independently discover necessary sources of information, which they can then integrate into their classroom discussions (Ivić, Pešikan, & Antić, 2001). Education technology must firstly and surely be mastered by teachers so that it can then be gradually introduced to the autonomous work of students.

Integrative teaching often involves **work outside the classroom**. Well-planned and organized excursions, including doing basic on-site research on a specific topic, are an important part of a learner’s active research process. Leaving school for the purpose of observing and collecting data depends on the content of the topic to be worked on; thus we would be more accurate in calling it fieldwork rather than an excursion.

**Work in small groups** – In contrast to traditional teaching, which often signified an individual and separate style of work negatively tainted by competition, integrative teaching enables students to work on a common task, whereby the cooperative relationship is reflected through mutual help, assistance and explanation. Likewise in contrast to the learning of facts and their repetition, integrative learning insists on common and collaborative problem-solving and teamwork, representing a more intimate and natural way of solving problems in many life situations. In such learning “the emphasis is on all pupils who by working together on joint tasks achieve common objectives, where they are all interrelated to common success and failure, pleasures and difficulties, mutual assistance” (Stanjojević & Mitić, 2015, 792).

Learning in smaller groups is quite different from learning that is characterized by a frontal form of work, because students in smaller groups are constantly active, conversing with each other, expressing opposite opinions. In such classrooms, there is an indeed a higher level of noise and restlessness than in traditional classrooms, but in the end it is important to distinguish a productive from a non-productive activity. In group learning, the group’s activity is productively designed, targeted at the goal of creativity and learning,
while students’ movement through the classroom is subordinated to that goal. This is why such classrooms would have different rules of behaviour and discipline, but that in no way means that discipline does not exist (Ćudina-Obradović & Brajković, 2009).

**Classroom workshops** – Work in a classroom workshop represents schooling which most closely approaches the requirements of integrative learning and teaching. The basic characteristics of the classroom workshop imply all the organizational preconditions for a constructive build-up of knowledge. They are reflected in the student’s choice of work-group topics, for which working periods are to be carried out at correct intervals. When working on a particular topic, the student works with other classmates, keeps his own records and self-evaluation of the progress of his work, and autonomously estimates how much he has achieved. This kind of learning process implies the full responsibility of the student and includes all stages of work, from the selection of the topic to the achievement of a result or solution and its reporting to other students. The role of the teacher consists in providing his/her own example and opinions, research and discussion, separate discussions about the work with each student in particular, as well as giving concise “mini-lessons” which represent a direct form of teaching of certain facts or skills (Ibid., 2009).

**Student maps** – Through insight into student maps, which represent collections of students’ works (drawings, photographs, work organization plans etc.) the teacher receives feedback on the progress of each student in a given period of time. When assessing knowledge acquired through integrative learning, student maps are of great importance as they enable the teacher to clearly evaluate the degree of acquired knowledge, the level of activity and the progress of the students. The value of the maps lies also in the fact that the student has the opportunity to learn skills of monitoring his thought processes, to reflect on his work, to improve his learning, and participate in the selection and evaluation of his/her achievements.

4. INTEGRATIVE LEARNING IN LOWER GRADES OF PRIMARY SCHOOL

An integrative approach is most easily applicable to lower primary grades because students at that age perceive this approach to learning as a spontaneous way of acquiring new knowledge. In the implementation of integrative teaching, the teacher plays a significant role. In that sense, it is important that he possesses a wide learning and education as well as knowledge from the humanities, natural sciences and technical fields.

A teacher in a lower grade has more options for applying an integrative approach rather than a subject-based approach because he carries out the entire teaching in his class. The program is set according to subject matter, but the teacher does not necessarily have to keep to the schedule of the lessons specified in the curriculum. Depending on the teaching context, a teacher can combine classes, arrange blocks of subject matter or double-up on lessons to round up the teaching material into a single logical lesson. This kind of exhibited material is more easily mastered and longer remembered, it functions comprehensively and is closer to the students. In this way students are trained to effectively solve problems from different fields and gain a deeper and more systematic knowledge that can be applied to real life.

In the Serbian educational system, there are schools and individuals who, on a daily basis, use this approach in order to stimulate students from the earliest age to connect facts through the use of critical thinking. In the organization of the teaching process, teachers have the opportunity, in cooperation with teachers who exclusively teach subjects,
especially teachers of foreign languages and elective subjects, to harmonize the class schedules and implement integrative teaching. Inside such a team, the teacher plays the role of organizer and coordinator in finding ways to connect the teaching content to the compulsory, optional and elective subjects. Selected topics and content can be taken from one subject and linked and complemented with related material from other subjects. We can ascertain that teachers of younger students, due to the very nature of their work, often have the opportunity to apply integrative teaching in an easier and better fashion than their colleagues working with older classes (Lukić Radojičić, 2011).

It is important to point out that the planning and organization of integrative teaching is no easy task. In order to organize integrative classes or days, one or more teams of teachers need to be formed before the start of the school year, tasked with the overall planning of integrative classes or days. Following the planning phase, teachers need to clearly develop the teaching lesson with a precisely defined order, defined objectives and the effective use of allotted time. In usual practice, integrative days are often used and not just integrative class hours, because they are easier to implement. Environmental learning, as the most suitable form of learning for the realization of integrative days, is best organized in an appropriate environment outside of school. The choice of which environment will be selected for the day will depend on the school’s finances, organizational capacities, weather conditions and other factors (Ibid, 2011). We can conclude that in comparison to integrative teaching classes, it would be much easier to organize and lead traditional lessons, however one must bear in mind the numerous positive effects achieved by this model through its application. The integration of the content of different subjects therefore is the template for a didactic-methodological preparation for teaching, in this way students are enabled to more easily and qualitatively master the foreseen content and realize all the educational goals that had been set.

In the following text an example of integrative day articulation is given to the topic of Winter in the second grade of primary school.

5. MODEL OF APPLICATION OF INTEGRATIVE TEACHING IN THE SECOND GRADE OF PRIMARY SCHOOL

*_topic of the day:* Winter  
*grade:* 2nd  
*subjects:* The World around us, Serbian language, Mathematics, Music, Art  
*objectives:*  
- identify basic characteristics of winter;  
- enable students to learn by themselves and find information.  
*tasks:*  
- expansion of existing and acquisition of new knowledge about the characteristics of winter by searching for information;  
- understanding of the read text – development of abilities for the fairy tale analysis;  
- encouragement of musical creativity – devising rhymes on the given text and practicing the playing of rhythmic instruments;  
- practicing and consolidating knowledge of addition, subtraction, multiplication and division up to 100;  
- drawing and painting pictures on the topic of winter – an excerpt from the optional fairy tale.
Teaching methods: dialogical, demonstrative, textual, the method of learning by ear, the method of written works and practical works.

Forms of teaching: frontal, individual, group.

Teaching material: worksheets for the following subjects: The World around us, Music, Serbian language, Mathematics, Art.

Teaching aids: rhythmic musical instruments, computer.

Preparation for work:
1. Talk to pupils about the task they had to do – find and read the texts about winter in textbooks, encyclopedias, children’s press or some other source.
2. Divide pupils into groups.

Activities:
1. Expressive reading of the fairy tale „Slikarka zima” by Desanka Maksimović and a short discussion about impressions.
2. Pupils’ group work.
   - Pupils are divided into five groups according to their personal interests:
     1) Serbian Language Group – engaged in the fairy tale analysis;
     2) The World around us Group – engaged in completing worksheets that contain questions about the basic winter characteristics;
     3) Mathematics Group – engaged in solving tasks related to winter;
     4) Music Group – engaged in devising rhymes and playing rhythmic musical instruments;
     5) Art Group – engaged in illustrating a unit from a fairy tale of their own choice.

3. Independent pupils’ work in groups
   Pupils work in groups and later they change activities among the groups. A teacher moves around the pupils, explains what is unclear, helps them and motivates them.
4. Group Reporting
   When groups have done their assignments, a leader of each group, who is chosen by the teacher, reports on their work.
   1) Serbian Language Group – they read a written report on their work;
   2) The World around us Group – they read a written report on their work;
   3) Mathematics Group – they show solutions to their Mathematics tasks using a computer;
   4) Music Group – pupils perform the rhyme and, at the same time, play rhythmic instruments;
   5) Art Group – an exhibition of their works is organized – works are displayed on the school notice board.

Assignments for groups’ work:

SERBIAN LANGUAGE Group
1. Read the fairy tale carefully.
2. Find unknown words in the fairy tale and determine their meaning with the help of a dictionary in the Reader.
3. Why is the fairy tale called „Сликарка зима”? Why?
4. Choose an excerpt from the fairy tale that you like best and read it. Explain why you have chosen the particular part.
5. Find and underline vivid expressions from the fairy tale.
6. Explain the way you imagine these expressions, that is pictures – silver fern leaf, silver forest, a whole castle made of crystals where silver stars shine instead of lamps, a frozen river that seems to flow under the willow covered in snow.
7. Which picture do you like best? Why?
THE WORLD AROUND US Group
Answer the following questions. Write your answers or circle the one you think is correct.
1. Name four animals that hibernate.
2. Which birds spend winter in our country?
3. Circle the correct answer:
   
   Days – Nights are longer in winter.

4. Winter has the largest number of sunny and warm days: yes – no.
5. How do winter crops, such as wheat, survive in winter?
6. Name winter months.
7. Circle the correct answers:
   
   In winter we most often need: swimming suits, scarves, mittens, T-shirts, coats, raincoats, ankle socks, sandals, boots, trainers, sweaters.
8. How do people help some wild animals in winter?

When filling in worksheets, pupils use texts about winter from textbooks, children’s press, encyclopedias or some other source.

MATHEMATICS Group
1. Solve the following tasks:
   
   \[ 5 \cdot 17 = \]
   \[ 19 \cdot 4 = \]
   \[ 8 \cdot 12 = \]
   \[ 11 \cdot 7 = \]

   \[ (15 \cdot 3) + 16 = \]
   \[ 92 – (4 \cdot 18) = \]
   \[ (6 \cdot 16) – 38 = \]
   \[ (4 \cdot 12) + (3 \cdot 11) = \]

2. Sixteen children from the street went out to have a snowball fight and they divided into two equal groups. How many children were there in each group?
3. There are 9 ski slopes on one mountain. On each slope one team appears consisting of three boys and two girls. How many skiers will appear on the slopes altogether?
4. On mountain Kopaonik there were 3 metres of snow, on mountain Zlatibor there was 4 times more snow than on Kopaonik, while on the Stara planina mountain there was for 2 metres more snow than on Kopaonik. How many metres of snow were there on all three mountains in total?
5. Nikola, Petar and Marko each made 22 snowballs, while Jovan made 34 snowballs less than the three of them together. How many snowballs did all of them make?

MUSIC Group
1. Read the fairy tale carefully.
2. Find the part of the text where the garden addresses winter in the fairy tale „Slikarka zima“.
3. Divide that text into syllables and say it as a rhyme.
4. Determine the title of the rhyme and practice saying it while clapping hands.
5. Try to play the rhyme on one of the rhythmic instruments – drumstics, rattles, wooden drum.
6. Practice playing instruments accompanied by simultaneous saying of the rhyme and make yourself ready to demonstrate it.

ART Group
1. Read the fairy tale carefully.
2. Choose the part of the fairy tale that you like most. Explain the reason why you like the particular part most.
3. Draw that particular part of the fairy tale.
4. Prepare your drawing for the exhibition.
One should keep in mind that integrative teaching prepares and equips students for a contemporary world that is changing at a rapid pace. Through this type of teaching students not only master knowledge of certain topics, but mental abilities, physical, emotional and social skills are nurtured and developed within them as well.

Bearing in mind the importance and value of integrative teaching, and in order to popularize this innovative model, future teachers should be trained for:

- the planning and preparation of integrative teaching;
- organization of effective cross-subject linkages;
- understanding the significance of a holistic teaching approach to teaching material;
- transmittal of functional knowledge and
- readiness for teamwork (Lukić Radojićić, 2011).

Integrative teaching is still not a fully current model of work in our school system. This is proven by the fact that there is no state strategy in our country, no national vision that mandates and also supports the implementation of integrative teaching. Actual practice demonstrates that integration is left to individual schools or teachers to fend for themselves in the matter, with only their enthusiasm and no serious outside support. (Dordjević, 2007).

If there were a national strategy, i.e. an official plan or program through which the integration process could be realized, the implementation of this model of work would receive more attention. A curriculum that supports the implementation of integration would require professional and logistical support, in real terms this would mean the compulsory education and training of teachers, specialized literature made available and support through printed materials, the organization of school scheduling etc.

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Integrative teaching is becoming one of the most effective methods in preparing future teachers for the realization of educational and training goals of modern schools. The work deals with the issue of integrative teaching, its basic characteristics, organization and importance. Theory and practice indicate the exceptional values and significant effects of applying this innovative teaching model. An example of an articulated integrative teaching on the topic of Winter in II grade, which teachers can use as a practical realization, as well as preparation of integrative lessons.

**Key terms:** integrative teaching, innovative model of teaching, modern school, effects of application