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THE EXEMPLARY (PARADIGMATIC) MODEL AND AN EXAMPLE OF ITS APPLICATION IN TEACHING THE SUBJECT OF NATURE AND SOCIETY

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S u m m a r y

The paper examines the possibilities of application of the exemplary (paradigmatic) model in teaching the subject of nature and society and gives the example of its application in the teaching unit 'Weather and its Significance for Life in the Environment'.

Key words: *exemplary (paradigmatic) model, teaching the subject of nature and society*

Modern critical theories of society, as well as a series of epistemological and methodological streams in pedagogy, impose the development of critically oriented pedagogy, and thereby also critical theory of teaching and school. A significant place is occupied by Klafki's critical-constructive theory, critical-communicative pedagogy (Winkel) and Schultz's humanistically oriented didactics (Vlahović, 2001).

As far as Klafki's critical-constructive theory is concerned, we can say that it joins the elements of: didactics as a theory of education, critical theory of research, as well as postulates of constructivism, where learning is understood as a process which is realized through discovery, i.e. understanding. For that reason, the teaching process should be organized in such a way that students can learn actively, independently and that such a process can capacitate them for further learning. Self-realization, through interaction and communication process, is understood in critical theories of teaching as a relation of teaching and learning, where students learn relatively independently, gain knowledge, develop intellectual and other potentials, make themselves ready for permanent education, all of it with a teacher's assistance.

It is important to mention here also an opinion of our eminent didactic, G. Gojkov, on the constructivist approach from the postmodern perspective. Namely, in her study, *Didactics and Postmodernism,* Gojkov emphasizes that 'in postmodern

perspective of constructivist understanding of knowledge, the principle of validity is replaced by the principle of constructions sustainability; the subject of cognition is not separated from the object of perception, but nevertheless, it participates in the process; the nature of knowledge is relative and not absolute; the phenomena which are examined are inseparable from the context; the process of cognition is a social one, and not individual; it is inductive not deductive; it is hermeneutical, not explanatory, and it is a qualitative one, not quantitative' (2006, p.115).

Based on the said, we can conclude that through implementation of different modern teaching strategies, especially the strategy of setting general and personal goals, progress is made from traditional adoption of knowledge towards process learning. Such an approach enables individualization and differentiation in learning, which leads to inducing the development of creativity and metacognition. Therefore, the teaching process, and also the teaching of the subject of nature and society, should be student oriented to a maximum extent, with appreciation of his/her personal experiences and recognizing his/her personal constructs, so that the student could maximally develop his/her creative capabilities and participate with his/her own specific style in the construction of knowledge, skills and habits. This can be achieved through the implementation of adequate work methods (demonstrative, research method), as well as through different innovative models in teaching the subject of nature and society (e.g. exemplary model of teaching), with dominant creative learning and recognition of cause and effect relations. Situations should be created where the student will search for new truths more often. Therefore, our goal is to generate a creative student with developed fluency (ability to use numerous ideas in problem solving) and flexibility of opinion (ability to change opinion during problem solving). This goal can be achieved only by the teaching process which does not deactivate the student, which does not demand pure remembering of the learnt and simple reproduction of what had been learnt, but it should be the teaching process with innovative work models which focuses on a student and cherishes his/her independency, creativity and development of intellectual ability (Prtljaga, 2010).

The Exemplary Teaching

The Exemplary (paradigmatic) teaching is one of the innovative models of teaching, i.e. one of the models that do not deactivate the student and which follow the requirements of constructivism. It can be said that it is of a later date, although its beginnings were a lot earlier, more precisely in the period between the I and II World War, when attempts were made to change the existing teaching process. But it was only in 1951 after the conference in Tübingen, that it got the true meaning, primarily in the countries of Western Europe and the USA, and it was denominated by the German pedagogue Martin Wagenstein in 1952. According to Klajn and Šipka, the term exemplary (lat. exemplaris vs. exemplum example) means 'which serves as an example, commendable, serving as a model' (Klajn, Šipka, 2008). The very word indicates that exemplary teaching is a model based teaching. It is the teaching which is realized according to the representative sample.

It can be said that exemplary teaching was conditioned by extensive teaching plans and programs, because exemplary teaching releases the pressure of the vast teaching program and lack of needed time, and students are enabled to adopt important contents without being burdened by a large number of facts. This model primarily helps to increase the reflective activity of students and teachers and avoid didactic encyclopedism, thus contributing to making the students more independent in mastering the planned subject-matter. Likewise, exemplary teaching can be performed with the implementation of all methods and forms of the teaching work. (The Encyclopedia of Pedagogy, 1989).

The basic concept of this model is that instructional themes that can be processed in an exemplary way, i.e. based on a model, should be selected from the programs of certain subjects. Therefore, students are given examples for further work in instructional process of certain subjects, and at the same time, they are capacitated to learn independently and analogously based on the 'sample' (related to the contents and methods) (Milijević, 1999).

Exemplary (paradigmatic) model can be successfully implemented in the teaching of the subject of nature and society, especially in the third and fourth grade. It is more difficult to implement this teaching model in the first and second grade because students are not qualified for such a work, therefore they cannot respond to its requests.

The four phases are usually present in the implementation of this model in teaching the subject of nature and society:

1. *Phase*: study of the teaching program and recognition of the teaching units that can be processed in exemplary way, i.e. contents which belong to the same thematic circle. The representative, exemplary one is singled out from the mass of similar ones. There are a lot of such teaching units during the instruction process of the subject of nature and society; therefore it is suitable for this work model.

2. *Phase*: teacher processes the exemplary content in as commendable, high-quality and suited way as possible. That implies adequate selection and implementation of teaching forms, work methods and multi-media sources.

3. *Phase*: independent work of the students in processing analogue content. Therefore, students work independently imitating the teacher's model. Teacher helps them in a way that they will prepare together a draft, reminder, instruction, questions, additional tasks and the like.

4. *Phase*: repeating of exemplary and analogue contents. This phase, which includes also checking, enables both the teacher and students to assess the quality of independent work.

Of course, exemplary teaching has its advantages, but also its weaknesses.

The following can be emphasized as advantages:

- it incites the creative work of both students and teachers;
- it enables independent acquiring of knowledge;
- encyclopedism and didactic materialism of program contents are avoided;

- students acquire concepts, develop opinion, reasoning and generalization on a smaller number of facts;
- it instigates research work.

The weaknesses of the exemplary model are the following:

- students learn based on the model which has been imposed to them by the teacher;
- students' intellectual activities and powers are not completely utilized and mobilized;
- not all contents are suitable for this form of teaching.

The teaching unit which is presented in the example below relates to the weather and its significance to life in the environment. We think that this teaching unit would be uninteresting and hard if it were taught in a classic way, because it is abundant with facts that students have to memorize with great effort without understanding them. The lesson organized in the following way, makes the students able to work independently and motivates them for further learning, observing at the same time the requests of the constructivist approach.

Projection of Exemplary (Paradigmatic) Work Model in Teaching the Subject of Nature and Society

Instructional theme: Weather and changes in the environment

Instructional unit: Weather and its significance to life in the environment

Grade: third

Lesson type: processing

Content of instructional unit: Factors which influence the weather in a certain area: topography, precipitation, temperature, gases etc.

Operative tasks of the lesson.

Educational: Acquiring knowledge about basic factors which influence the weather in a certain area. Understanding its influence on man and his health

Functional: Recognition of cause and effect relation, phenomena and processes. Enabling students to work independently and in group.

Pedagogical: Development of a critical attitude towards how the people treat their environment. Cherishing cooperative relations through group work.

Work forms: Frontal, individual, group

Instructional methods: Conversation method, text method, written papers, oral presentation.

Instructional means: Text book, video beam projector, instructional sheets, hammer paper with images of terrain, precipitation, temperature, gases and forests, hammer paper with theses for independent learning, yellow and blue pennants.

The Structure and Course of the Lesson

Introductory part of the lesson

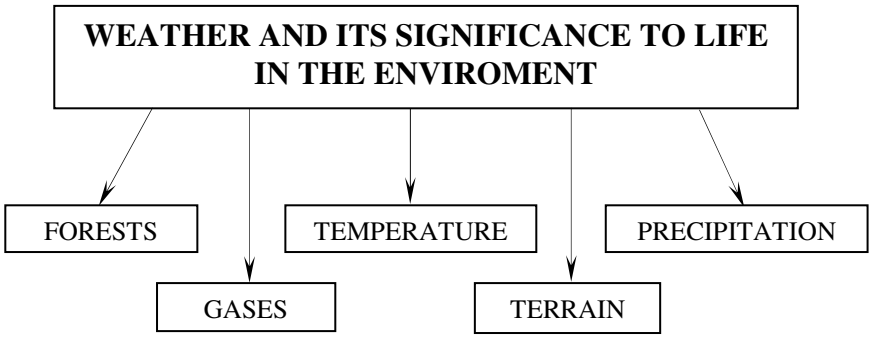
Students listen to the recording of a weather forecast on the video beam. After that follows the conversation with students about the importance of a weather forecast for people. Do they know the name of the science dealing with weather studying? (Meteorology). And what is the name for the people who study this science? (Meteorologists).

The teacher explains to the class that the weather is influenced by numerous factors such as: forests, terrain, temperature, gases, precipitation (he/she discloses factors one by one).

Main part of the lesson

1. Teacher's processing of the exemplary content

The teacher informs the students that he/she will tell them something about precipitations, making use of the theses from the hammer paper (he/she glues the hammer paper on the board), and that later on they will learn by themselves the other factors which influence the weather, using the same theses.



The teacher tells the students that precipitations include rain, fog, snow and dew (he/she glues all types of precipitation on the hammer paper). He/she reminds the students that they have already learnt that water circulates in nature. Water steam forms a cloud in the higher layers of air. Condensation of particles forms rain drops which are heavier than air and therefore they separate from the clouds. He/she explains to them that snow is formed in the same way as the rain, except that low temperatures in the high air layers are needed for its formation. He/she asks the students in which form the snow gets to the ground (in the form of snowflakes). Then, fog is the condensed water steam in the lowest layers of air. The teacher then asks the students to describe it. Likewise, the teacher explains the origin of the last

type of precipitation-dew: condensed water steam on cold objects, for example on a leaf. He/she asks the students what would happen if the rain did not fall for a long time. He/she poses the questions about the influence of precipitation on crops, as well as about the consequences of abundant precipitation and melting of snow. Teacher asks whether anybody knows anything about the influence of fog.




Theses for independent learning:

- Influence of this factor on the weather
- Man's dependence on this factor
- Influence of this factor on the health of people

2. Independent processing of analogue contents

The teacher divides the students into four groups and gives them instructions for independent work. One group deals with forests in an analogue way, the second one deals with gases, third one with temperature and the fourth one with terrain. Students are given a text that they should read carefully and then write, based on the set theses, what they have learnt about the factor they got.

Using the text that the teacher has prepared, text book, encyclopedia and exchange of experience with others from the group, the students process the set contents independently based on the teacher's model.

Text that the teacher has prepared for independent work of students:

MIRA AND NENAD ON A TRIP

Mira and Nenad are brother and sister who live in Vršac. One weekend they decided to go to Zlatibor to visit their grandparents. They used this trip to learn what influences the weather in a certain area.

Travelling to a higher ground they noticed snow on the mountain tops. They were very surprised, because snow has not fallen yet in Vršac. Their father

explained them that it was because of the influence of the terrain and that the temperature of the air was not the same in the mountains and in the plains. Nenad concluded immediately that it was one of the reasons why people in mountain areas were primarily cattle breeders, while people in plains were farmers. Their father also told them that mountains were better for people's health, referring primarily to air which is most often polluted by traffic and smoke from factory chimneys in the lower areas.

Mother reminded Mira and Nenad that forests were one of the manufacturers of that clean mountain air. She told them that forests also influence the weather, because they reduce the strength of wind, so there is less wind in the areas covered with forests. Listening to her mother Mira got worried, because she knew that there were less and less forests. Wishing to utilize wood as much as possible, men have been cutting down more and more forests without renewing them. She realized that there would be more and more polluted air, as well as consequences the people's health, such as lung diseases.

Father explained that large quantities of gases coming out of large factories, cars and other vehicles create gaseous compounds in the air which dissolve in water creating acid rains. Mother told them that they are dangerous for the living creatures, especially for plants, terrestrial animals and aquatic creatures. Mira and Nenad realized that forest vegetation and agricultural areas could be destroyed due to influence of these rains.

When they arrived in Zlatibor, their grandparents welcomed them warmly clothed. Mira and Nenad were a little bit cold, because they were not used to such low temperatures in that part of the year. Mira complained to her grandmother that temperatures were a lot warmer in Vršac, while Nenad was joyful because of the snow. During a discussion between their father and grandfather, they heard that such low temperatures could damage dad's crops, while very high temperatures influenced badly the granddad's animals which became agitated and short of breath. Grandma explained that a sudden change in air temperature caused health problems both to animals and people.

After playing in the snow and visiting animals, they headed home. They had a very nice time and would certainly visit their grandparents soon.

Theses for independent learning:

- Influence of this factor on the weather
- Man's dependency on this factor
- Influence of this factor on people's health

3. Groups Reporting

After the paper is finished, the students report per groups about what they have done. Students' presentation is followed by the placing of corresponding images on a board. Each group selects adequate images of the given factor that the teacher has prepared in advance.

Final part of the lesson

Systematic description of the learnt contents through conversation with the students.

The teacher tells the students that each of them will get one blue and one yellow pennant. After reading the assertion, on the teacher's sign, everyone who thinks that the assertion is true will raise the yellow pennant and if the assertion is wrong they will raise the blue one.

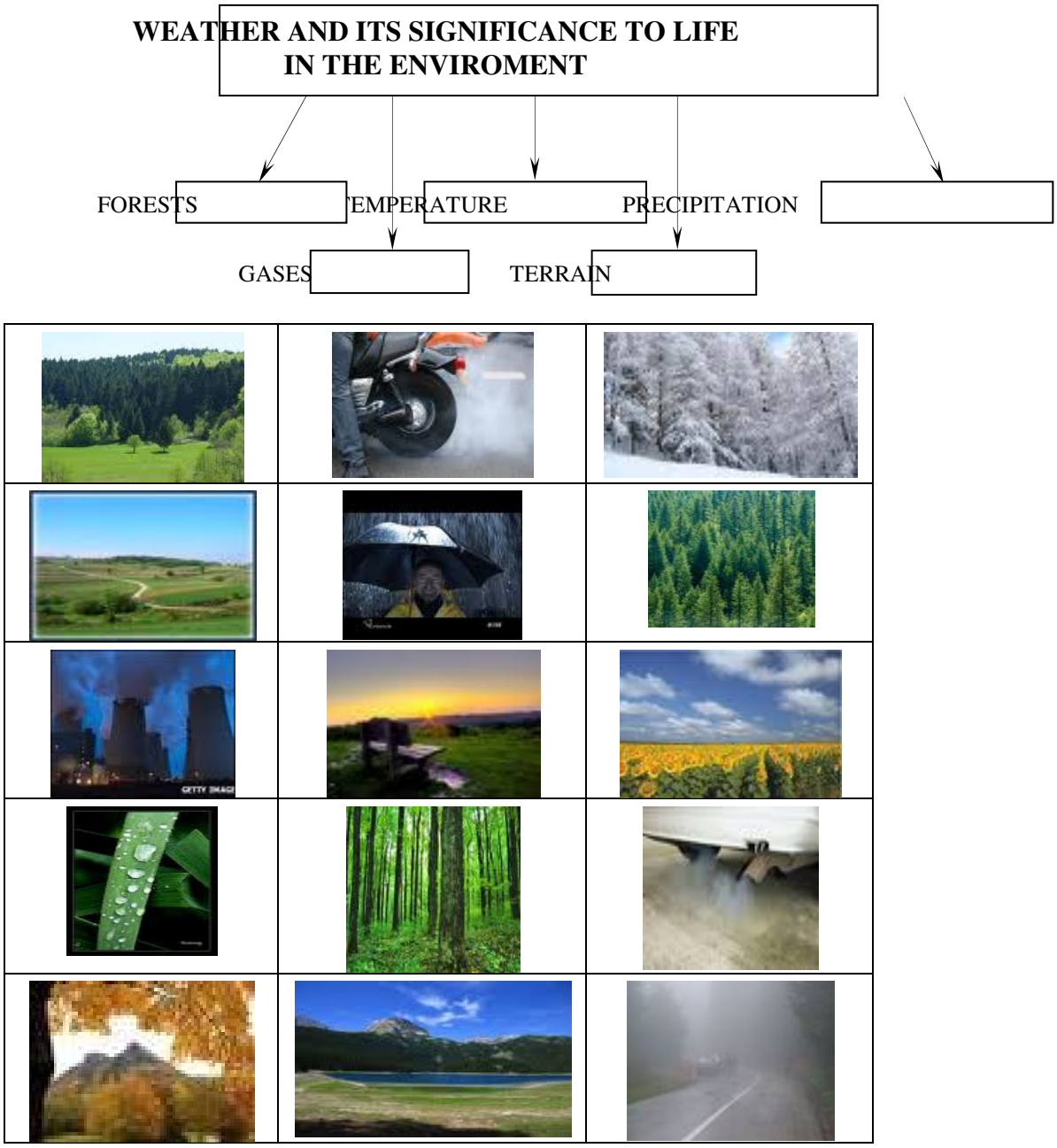
Assertions by which the systematization of the learnt will be done:

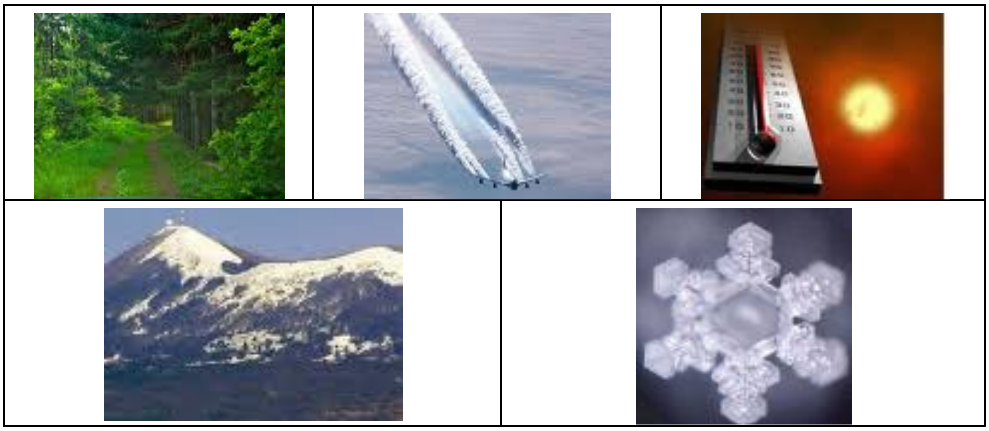
1. Snow gets to the ground in a solid state, as snowflakes.
2. Heavy rains endanger crop yield.
3. Man adapts to the temperature differences, primarily by dressing appropriate.
4. Thick fog and small quantity of snow can stop almost all types of traffic.
5. High temperatures may not bother animals, but they can be unpleasant to people.
6. Air temperature is the same in higher and lower areas.
7. Acid rains are dangerous for the living creatures.
8. Forests produce clean air, and because of the excessive cutting, the air will be more and more polluted.
9. Air traffic does not pollute air.
10. Lung diseases are developed because of mountain air.
11. Forests influence the weather, because they reduce the strength of the wind.
12. Due to low temperatures the snow remains on mountain tops.
13. Science which studies the weather is called meteorology.

Homework

Find other information in the encyclopedia in relation to the weather and the factors influencing the weather, not mentioned in the class.

The board is introduced at the end of the lesson.


WEATHER AND ITS SIGNIFICANCE TO LIFE
IN THE ENVIROMENT
FORESTS
TEMPERATURE
PRECIPITATION
GASES
TERRAIN



Conclusion

In conclusion we can say that exemplary (paradigmatic) model should find its place in the teaching process, primarily because of the too extensive teaching programs which require a lot of time that cannot be provided as students are already overburdened. Of course, we cannot rely only on this form of teaching, especially in teaching the subject of nature and society, because not all subject-matters can be processed this way, but combined with other types of instructing (e.g. problem-based learning) it can be fully recognized.

Vilotijević emphasizes that exemplary teaching has 'two basic tasks': 1. to enable at an enviable didactic-methodic level, complete processing of the subject matter included in the teaching program and 2. to capacitate the students to independently acquire knowledge (Vilotijević, 1999).

Likewise, this kind of teaching can be understood as an inspiration for new creative possibilities in instructional work.

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EGZEMPLARNI (PARADIGMATSKI) MODEL I PRIMJER NJEGOVE PRIMJENE U NASTAVI PRIRODE I DRUŠTVA

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R e z i m e

U radu se razmatraju mogućnosti primene egzemplarnog (paradigmatskog) modela u nastavi prirode i društva i daje primer njene primene u obradi nastavne jedinice „Vremenska prilike i njihov značaj za život u okruženju".

Ključne riječi*: egzemplarni (paradigmatski) model, nastava prirode i društva*