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„SCIENTIA EDUCOLOGICA“**



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Summary

ECOLOGY EDUCATION OF ADULTS IN UTENA DISTRICT

Marija Ilčinskienė

Ancient people were inseparable from nature. They depended on environment and this dependence was reflected in their way of live, customs, creation and rituals. Civilized people don't connect themselves with nature as much as their ancestors did. They don't have a strong feeling of harmony with surrounding environment. However people today feel concern about endangered nature and devastated environment. And this is not only aesthetic problem, but necessity to preserve nature and man. That is why more and more attention is paid to ecology and ecological education.

Ecological education is one of the fields of integrated education. It's role is to help adults realize ecological problems, acquire cultural and social competence, be independent, active and responsible.

The main good of ecological education is to form ecological consciousness, ethics world outlook, to develop responsibility for survival of nature.

Ecological education is effective when work is organized gradually. Adults should acquire this education in one or another way all their lives, only then we can successfully form an ecologically educated personality.

Key words: *ecology, ecology education*

ADAPTIVE TEACHING OF CHEMISTRY

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Introduction

The Education act of Russian Federation was adopted in 1992. The adaptability of the educational system to the levels and features of development and preparation of students was proclaimed in it. This principle is urgent for all types of comprehensive schools. That's why the role of the adaptive approach in teaching is growing.

Given the various contingent of students, the process of education can be realized successfully by means of adaptive approach (Богорев В.В., 2001; Границкая А.С., 1991; Капустин Н.П., 1999; Русских Г.А., 2002; Ямбург Е.А., 1996, and others).

The results of our learning and analysis of problems of adaptive teaching shows the lack of psychological aspects like leading modality and styles of thinking (Гриндер М., Лойд Л., 2001; Данилова Н.Н., 1998; Ильин Е.П., 2001; М. Grinder, L. Loyd; Сиротюк А.Л., 2000, and others) That's why it was necessary to build a new methodic taking into account personal features of every student (Пак М.С., Иванова И.С., 2005).

In the system of adaptive chemistry teaching we distinguish two basic subsystems: adapting activity of a teacher and adaptive activity of a student. In our system we regard the adaptive activity of a student not as the adjustment but as the function of development.

Adaptive chemistry teaching (Иванова И.С., 2005). – is the chemistry teaching, taking into account the individual characteristics of students (predominating modalities, information processing styles, different levels of knowledge), as much as possible adapting for them educational process.

In adaptive chemistry teaching the dominating role is assigned to the didactic aims as the means of steady development of students. These aims (stages) are (Figure 1): 1.

Diagnosing predominating modalities, information processing styles and level of students' chemical knowledge etc. 2. Studying new material (in the form of frontal or group work in view of dominating modalities, information processing styles and levels of knowledge). 3. Monitoring of the quality of learning new material. 4. Correction of knowledge (getting rid of mistakes and gaps in knowledge, application of studying material, generalization and systematization of knowledge). 5. Inspection and self-appreciation.

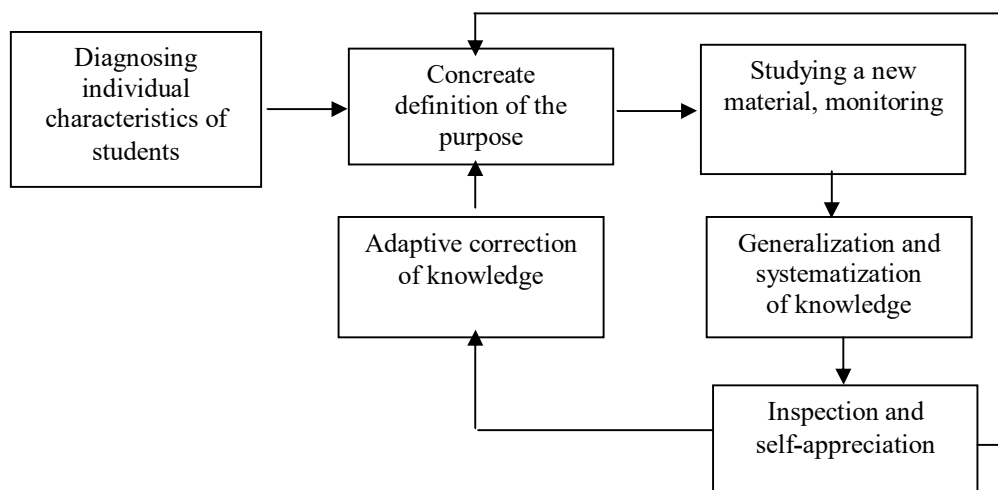


Figure 1. Stages of adaptive chemistry teaching

According to the above-mentioned modalities and information processing styles, we selected the most preferable methods and means of adaptive chemistry teaching (Table 1). For left-brained students with audible modality the most preferable methods of learning chemistry are lecture, conversation, discussion, listening to audiocassettes, solving oral tasks etc. For students with visual modalities: demonstration of chemical objects, charts, videos, models etc. For right-brained students with kinesthetic modality: experiments, laboratory works, practical works, didactic games, making devices and models etc.

Table 1

Methods and means of adaptive chemistry teaching

Methods and means of adaptive teaching of chemistry according to the above-mentioned modalities and information processing styles		
Left-brained students		Right-brained students
audible modality	visual modalities	kinesthetic modality
lecture, conversation, discussion, listening to audiocassettes, solving oral tasks etc.	demonstration of chemical objects, charts, videos, models etc.	experiments, laboratory works, practical works, didactic games, making devices and models etc.

While adaptive chemistry teaching the 12 types of adaptive tasks are realized taking into account individual characteristics of students (Table 2).

Table 2

Levels of students' knowledge digestion	Types of adaptive tasks in chemistry		
	Styles of thinking and leading modalities of students		
	Left-brained-L	Equal-side-brained-E	Right-brained-R
	Audible modality -A	Visual modality -V	Kinesthetic modality -K
1 - recognition	1LA	1EV	1RK
2 - reproduction	2LA	2EV	2RK
3 - application	3LA	3EV	3RK
4- transformation	4LA	4EV	4RK

The students with the readiness level “recognition” are offered the tasks oriented not only for recognition, but also for reproduction. As tasks for reproduction can be difficult for some students so the dosed help of the teacher is provided.

Let's give an example of 1LA-type tasks (for the students with the readiness level “recognition”, *left-brained* style of thinking and *audible* modality). The teacher reads the tasks to the students orally.

1. Choose the right answer:

A) Acids are the electrolytes ionizing in water solutions to give hydroxide anions and cations of metals.

B) Acids are the electrolytes ionizing in water solutions to form cations of hydrogen and anions of the acid residue.

C) Acids are the electrolytes ionizing in water solutions to form cations of metals and anions of the acid residue.

2. Give an answer: Name the process of electrolyte ionizing into ions when being melt or dissolved in water?

The students with the readiness level “reproduction” are offered tasks not only for understanding, but also for an establishment of cause-and-effect relations.

Let's give an example of 2EV-type tasks (for students with the readiness level “reproduction”, *equal-side-brained* style of thinking, and the *visual* modality). The tasks are written on the card.

1. Reproduce the dissociation schemes of electrolytes with ionic and covalent polar bond.

2. Place the following terms: “monoprotic acids”, “the diprotic acids”, “acids”, “triprotic acids” – on the appropriate places in the scheme “Classification of acids”.

.....

 HCl, HNO₃, H₂SO₄, H₂SiO₃, H₃PO₄

Write down a characteristic based on which the classification is given.

3. Write out the formulas of acids and their names:

MgCl₂, HNO₃, Mn, H₂S, H₂O, SO₃, H₃PO₄, Na₂CO₃,
 Al₂(SO₄)₃, H₂SO₄, Na₂S, HCl, Ca(NO₃)₂, P₂O₅

The students with a readiness level “application” are offered the tasks oriented towards application of the studied material in familiar situations

Let's give an example of 3RK-type tasks (for students with the readiness level “application”, *right-brained* style of thinking and *kinesthetic* modality).

1. In the test-tubes A, B and C there is limy water, solutions of nitric acid and potassium hydroxide. How to define contents of each test-tube? Carry out the corresponding reactions.

2. Using the set of cards (water dipoles – 20 pieces, H^+ – 3 pieces, Na^+ – 2 pieces, Cl^- – 5 pieces, HCl – 2 pieces) simulate the mechanism of electrolytic dissociation for substances with different bond type.

Methodical conditions of effective functioning of the adaptive chemistry training technique are: 1) regular measuring and registrating of students' levels knowledge digestion; 2) testing and constant registrating of students' styles of thinking; 3) diagnostics and registrating of students' leading modalities; 4) revealing and realization of preferable teaching means and methods when studying new material, improving and applicating of students' knowledge and skills; 5) the maximal adaptation of educational means to students' individual and typological characteristics.

First of all, the system of adaptive chemistry teaching should take into account its didactic aims, the individual characteristics of students, predominating modalities, information processing styles, adapting to them the most preferable methods and means of training. We consider that our system will make it possible to achieve steady quality of chemistry education of students.

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Summary **ADAPTIVE TEACHING OF CHEMISTRY**

Irina Ivanova

Adaptive chemistry teaching – is the chemistry teaching, taking into account the individual characteristics of students (predominating modalities, information processing styles, different levels of knowledge), as much as possible adapting for them educational process. Stages of adaptive chemistry teaching are: 1. Diagnosing predominating modalities, information processing styles and level of students' chemical knowledge etc. 2. Studying new material (in the form of frontal or group work in view of dominating modalities, information processing styles and levels of knowledge). 3. Monitoring of the quality of learning new material. 4. Correction of knowledge (getting rid of mistakes and gaps in knowledge, application of studying material, generalization and systematization of knowledge). 5. Inspection and self-appreciation. According to the above-mentioned modalities and information processing styles, we selected the most preferable methods and means of adaptive chemistry teaching. Our system will make it possible to achieve steady quality of chemistry education of students.

Key words: *an adaptive teaching, a leading modality, styles of thinking, levels of knowledge.*

INTEGRACIJA: NEFORMALIOJO GANTAMOKSLINIO UGDYMO SĖKMĖS ASPEKTAS

Aldona Klebonaitė, Dainora Vensloviėnė, Vida Nuobarienė

Panevėžio rajono Uėmokyklinės veiklos susivienijimas, Dembavos pagrindinė mokykla

Įvadas

Šiuolaikinės mokyklos tikslas – ugdyti kūrybingą, išradingą, komunikabilią, įvairiapusiškai išsilavinusią asmenybę, kuri vadovautųsi tiesos, gėrio ir grožio vertybėmis. Mokytojo pareiga – padėti mokiniams suprasti supančio pasaulio harmoniją, patirti pažinimo džiaugsmą. Tam neužtenka vien pamokinės veiklos – mokiniams reikia įdomios, patrauklios ir kūrybingos nepamokinės veiklos – gamtosauginės, muzikinės, meninės, sportinės ar pan. kiekvienam pagal poreikius ir polinkius. Dažnai mokykloje organizuojama nepamokinė veikla nėra patraukli mokiniams: renginiai neįdomūs, vyrauja sėdimos ir žodinės formos, menkai ugdomas kūrybiškumas, nepropaguojama sveika gyvensena, fizinis aktyvumas. Tarp mokinių nėra populiarūs ir gamtamokslinė veikla. Tai įpareigoja ieškoti naujų ugdymo formų, taikyti įvairesnius metodus. Vienu iš sėkmės aspektų nepamokinėje veikloje gali būti integruotas neformalusis ugdymas.

Neformaliojo ugdymo integracijos galimybės

Dembavos pagrindinėje mokykloje veikia trys Panevėžio rajono Uėmokyklinės veiklos susivienijimo neformaliojo ugdymo būreliai: ekologų, meninės raiškos ir maironiečių. Susivienijimas sudaro geras sąlygas mokinių saviraiškos poreikiams tenkinti: skiria transportą, reikiamų priemonių, o dirbama mokykloje. Susivienijimas papildo mokyklos veiklą ir suteikia daugiau galimybių mokinių popamokinei veiklai plėtoti: mokiniai gali rinktis daugiau būrelių, dalyvauti įvairesniuose renginiuose, dažniau vykti į mokomąsias-pažintines išvykas. Dembavos pagrindinė mokykla turi senas gamtosaugos ugdymo tradicijas: Žemės mėnesio, gyvūnų dienos renginius, akciją „Lesyklėlė“, rudens krosą su turistiniais elementais, ekologines išvykas. Kadangi gamtosauginis ugdymas yra