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БИОЛОГИЯСАБАҚТАРЫНДАСЫНИОЙЛАУДЫҚАЛЫПТАСТЫРУДЫҢНЕГІЗ ГІТЕОРИЯЛЫҚЖӘНЕПРАКТИКАЛЫҚАСПЕКТІЛЕРІ

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Түйін: Мақалада үш кезеңге негізделген «көру өткірлігінің алдын алу бойынша ұсыныстар» сабағын өткізу әдістемесі сипатталған: шақыру кезеңі оқушыларды сабақ мақсаттарына жетуге бейімдеуге және бұруға арналған. Мағынаны жүзеге асыру кезеңінде (түсіну кезеңі) студенттер сабақ арналған жаңа материалмен танысады. Рефлексия кезеңінде студенттерге жаңа мазмұнды игеру процесін талдауға шақырылады.

Мақалада Муштавинская И.В., Русских Г.А., Иванынина Е.В. әдіскерлері сипаттаған сыни ойлау технологиясының моделіне сілтеме бар. РусскихГ.А. пікірінше, сыни ойлауды дамыту технологиясы оқушы мен мұғалімнің шығармашылық ынтымақтастығына, оқушылардың кез-келген материалға аналитикалық көзқарасын дамытуға негізделген.

Мақалада Муштавинская И.В. бойынша сыни ойлау технологиясын талдау негізінде «Адам физиологиясы» пәні бойынша «көру өткірлігінің алдын алу бойынша ұсыныстар» сабағын өткізудің біз әзірлеген әдістемесі ұсынылған.

«Көру өткірлігінің алдын алу бойынша ұсыныстар» сабағын өткізу әдістемесі материалды есте сақтауға емес, міселені қоюға және оның шешімін табуға арналған, дейді Иванынина Е.В.

Кілт сөздер:сыни ойлау, теория, тәжірибе, көрі өткірлік, технология

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ОСНОВНЫЕ ТЕОРЕТИЧЕСКИЕ И ПРАКТИЧЕСКИЕ АСПЕКТЫ ФОРМИРОВАНИЯ КРИТИЧЕСКОГО МЫШЛЕНИЯ НА УРОКАХ БИОЛОГИИ

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Аннотация: В статье описывается методика проведения урока «Рекомендации по профилактике остроты зрения» на основе трех фаз: *Фаза вызова* предназначенная для того, чтобы настроить и повернуть учащихся на достижение целей урока. На *фазе реализации* смысла (фазе

осмысления) учащиеся знакомятся с новым материалом, которому посвящен урок.В *фазе рефлексии* учащимся предлагается проанализировать только что изученный ими процесс усвоения нового содержания.

В статье есть ссылка на модель технологии критического мышления описанная педагогами – методистами Муштавинской И.В., Русских Г.А.,Иванынина Е.В. По мнению Русских Г.А.**Т**ехнология развития критического мышления**основана на** творческом сотрудничестве ученика и учителя, на развитии у школьников аналитического подхода к любому материалу**.**

В статье предложена разработанная нами методика проведения урока «Рекомендации по профилактике остроты зрения» по дисциплине «Физиология человека» на основе анализа технологии критического мышления по Муштавинской И.В.

Методика проведения урока «Рекомендации по профилактике остроты зрения» рассчитана не на запоминание материала, а на постановку проблемы и поиск её решения как утверждает Иванынина Е.В.

Ключевые слова: критическое мышление, теория, практика, острота зрения, технология

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THE MAIN THEORETICAL AND PRACTICAL ASPECTS OF THE FORMATION OF CRITICAL THINKING IN BIOLOGY LESSONS

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Abstract: The article describes the methodology of the lesson «Recommendations for the prevention of visual acuity» based on three phases: The challenge phase is designed to set up and turn students to achieve lesson goals. At the meaning realization phase (comprehension phase), students get acquainted with the new material that the lesson is dedicated to. In the reflection phase, students are invited to analyze the process of assimilation of new content that they have just studied.

The article contains a reference to the model of critical thinking technology described by methodologists Mushtavinskaya I.V., Russian G.A., Ivanynina E.V. According to Russian G.A., the technology of developing critical thinking is based on the creative cooperation of a student and a teacher, on the development of an analytical approach to any material among schoolchildren.

The article proposes a methodology developed by us for conducting the lesson «Recommendations for the prevention of visual acuity» in the discipline «Human Physiology» based on the analysis

Key words: critical thinking, theory, practice, visual acuity, technology

Introduction

Education designed for a bright future should be supported and built on the basis of two inseparable and interrelated principles, as I.V. Mushtavinskaya writes: the ability to quickly navigate the rapidly growing flow of information and find the exact and necessary, as well as the ability to comprehend, think sharply and widely apply the information received. The development of critical thinking skills is the main component of personality formation in the context of the development of a global information and network civilization.

Materials and methods

In its most general form, reliable critical thinking, as E.V. Ivanynina writes in her research, is the use of mental techniques or strategies that increase the likelihood of obtaining the desired mediocre end result. This definition characterizes thinking as something characterized by manageability, reasonableness and directionality - a type of thinking that is resorted to when

solving problems, drawing conclusions and presenting a point of view. Critical thinking begins with tricky questions and problems, not with answers to the teacher's questions.

According to the model of critical thinking technology, the technology described by the Russian methodologist G.A. includes three stages:

1. The stage of the call. It updates the existing knowledge of students, awakens interest in the topic.

2. The stage of comprehension. This is where the main meaningful work of the student with the text takes place.

3. The stage of reflection. Here the student comprehends the studied material and forms his personal opinion and attitude towards it.

Experimentalsection

Let's consider modeling a lesson in human physiology in accordance with the technology of critical thinking. In the lesson on the topic «Recommendations for the prevention of visual acuity reduction», we use the presence of a three-phase process characteristic of this technology –«I know; I want to know; I have learned». According to modern ideas, at least 90% of all information about the world around a person receives with the help of vision. The size of objects, their degree of illumination, color, shape, that is, almost everything that we value, admire, fear and miss, we perceive with the help of vision. The «call phase» reception. Students draw a table in a notebook in which there are three graphs of the experiment: 1 - I know; 2 - I want to know; 3 - I learned (table)

The table is filled in as they work in lesson mode

I know	*I want to know*	*I learned*
1.Theopticnerve	Causes of optic nerve atrophy	Optic nerve atrophy: lack of blood in the optic nerve causes it to shrink. Potential causes of optic nerve atrophy include injuries, strokes, hydrocephalus, infections, and brain tumors. The main sign of optic nerve atrophy is a decrease in visual acuity and the appearance of fog in front of the eyes
2.Thevitreousbody	**What causes the destruction of the vitreous body?**	Age-related changes in the structure of the eyeball- the presence of chronic inflammatory processes in the eye; diabetes mellitus; diseases of the circulatory system (atherosclerosis, arterial hypertension, dystrophic vascular changes); severe myopia; dystrophy; compression of arterial vessels in the presence of cervical atherosclerosis; hormonal changes that occur during pregnancy, menopause, puberty, when prescribing hormone therapy; eye, nose, and head injuries (including surgery); helminthic invasion (toxoplasmosis); frequent and prolonged visual stress; psychoemotional stress, depression; physical exhaustion; some diseases of internal organs; deficiency of vitamins, macro- and microelements; toxic or radiation effects on the body.

3. A table for determining visual acuity	The history of the creation of the Sivtsev table	A table for checking visual acuity, developed in 1923 by Soviet ophthalmologists S.A. Golovin and D.A. Sivtsev. On the left side of this diagram, opposite each row of symbols, the distance in meters (D) is indicated, at which they are clearly distinguishable by a healthy eye. For the upper row, this indicator is 50 m, for the lower one – 2.5 m. There are 12 lines in total in the table, and seven letters are used as optotypes: Ш, Б, М, Н, К, Ы, И.
4.Theretina	The main symptoms of retinal detachment	The main symptoms characteristic of this disease are as follows: The appearance of a “veil” in front of the eyes, which causes a narrowing of the field of vision; "Flashes", similar to lightning and sparks in front of the eyes; Distortion of the shape of objects. A completely torn shell leads to loss of vision. It causes a significant decrease in vision, up to its complete loss. One of the main causes of detachment is a severe degree of myopia. With myopia, the eyeball stretches greatly, so the retina breaks away from the vascular network due to thinning of the membranes of the eye
5.Thepupil	What happens if the pupil of the eye is damaged?	This is often due to meningitis, epilepsy, brain injury, and trauma. Thepupil dilation due to injuries. In case of traumatic injuries, the pupil remains dilated for a long time. Mydriasis on the background of brain pathology. Diseases of the brain and spinal cord can provoke an expansion the pupil.

We are working directly with the text - individually, in pairs, in small groups or as a whole group.

Then, in the second column, they form the questions that they would like to receive an answer to.

For example: the causes of optic nerve atrophy; the history of the creation of the Golovin-Sivtsev table frame; what happens if the dysfunction of the lens of the eye is damaged; what happens if the dysfunction of the pupil of the eye is damaged; destruction of the vitreous body occurs due to some reason; the main symptoms within the framework of retinal detachment.

Conclusion

Model classes of lessons on «Human Physiology», assuming a certain sequence and validity of the stage of the lesson stage, have the ultimate goal - to create such a present teaching atmosphere in which students actively work independently with the teacher, consciously reflect on the learning process, monitor, support, refute or expand their knowledge, new opinions about human physiology. It is this single process that is the basis and purpose of the program.

Vision also plays a crucial role in the development of spatial representations and listening in improving the number of motor reactions of a person. No complex movement is complete without visual control. It is visual-spatial representations that are of leading importance in teaching a child to write, read, arithmetic, drawing, etc.

In the education system, when receiving new biological information in biology, students must learn to consider it from various points of view, angles, and draw their own conclusions about its value.

Modern life sets its priorities: not simple knowledge of the case and facts, dogmas, but the ability to use the acquired, accumulated amount of information, the ability to receive it and model, systematize, not consume, but create. The practical significance of the use of critical thinking technology is the education of a social, free, critically thinking creative personality of a child, which makes it possible for the student's personal growth and development in the mode of individuality.

The use of a simulated lesson in human physiology according to the technology of critical thinking "Recommendations for the prevention of visual acuity", the teacher using a three-phase process - "I know; I want to know; I learned" makes the lesson interesting, expands the scope of the studied subject, activates the cognitive activity of students and promotes creative self-development of personality.

Список литературы

1. Русских Г.А. Технология развития критического мышления. //Биология в школе. 2014. №2. С.28-33

2. Муштавинская И.В. Технология развития критического мышления: научно-методическое осмысление // Методист. 2002. № 2. С.30-35

3. Муштавинская И.В., Иванынина Е.В. Критическое мышление на уроках естествознания // Естествознание в школе. Москва. 2004. № 3. С.34-39

Referens list:

1. Russkikh G.A. Tekhnologiya razvitiya kriticheskogo myshleniya. //Biologiya v shkole. 2014. №2. S.28-33

2. Mushtavinskaya I.V. Tekhnologiya razvitiya kriticheskogo myshleniya: nauchno-metodicheskoye osmysleniye // Metodist. 2002. № 2. S.30-35

3. Mushtavinskaya I.V., Ivanynina Ye.V. Kriticheskoye myshleniye na urokakh yestestvoznaniya // Yestestvoznaniye v shkole. Moskva. 2004. № 3. S.34-39

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