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ҚОСТАНАЙ ОБЛЫСЫ ӘКІМДІГІ МӘДЕНИЕТ БАСҚАРМАСЫНЫҢ "ЫБЫРАЙ АЛТЫНСАРИННИҢ ҚОСТАНАЙ ОБЛЫСТЫҚ
МЕМОРИАЛДЫҚ МҰРАЖАЙЫ" КОММУНАЛДЫҚ МЕМЛЕКЕТТІК МЕКЕМЕСІ

КОММУНАЛЬНОЕ ГОСУДАРСТВЕННОЕ УЧРЕЖДЕНИЕ "КОСТАНАЙСКИЙ ОБЛАСТНОЙ МЕМОРИАЛЬНЫЙ
МУЗЕЙ ИБРАЯ АЛТЫНСАРИНА" УПРАВЛЕНИЯ КУЛЬТУРЫ АКИМАТА КОСТАНАЙСКОЙ ОБЛАСТИ

АЛТЫНСАРИН ОҚУЛАРЫ

«ИННОВАЦИЯ, БІЛІМ, ТӘЖІРИБЕ-БІЛІМ
БЕРУ ЖОЛЫНЫҢ ВЕКТОРЛАРЫ»

ХАЛЫҚАРАЛЫҚ
ҒЫЛЫМИ-ПРАКТИКАЛЫҚ
КОНФЕРЕНЦИЯСЫ

МАТЕРИАЛДАРЫ

II КІТАП

АЛТЫНСАРИНСКИЕ ЧТЕНИЯ

МАТЕРИАЛЫ
МЕЖДУНАРОДНОЙ
НАУЧНО-ПРАКТИЧЕСКОЙ
КОНФЕРЕНЦИИ

«ИННОВАЦИИ, ЗНАНИЯ,
ОПЫТ – ВЕКТОРЫ
ОБРАЗОВАТЕЛЬНЫХ ТРЕКОВ»

II КНИГА



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Жинаққа «Инновация, білім, тәжірибе-білім беру жолының векторлары» атты Алтынсарин оқулары халықаралық ғылыми-практикалық конференция материалдары енгізілген.

Талқыланатын мәселелердің алуан түрлілігі мен кеңдігі мақала авторларына заманауи білім беруді жаңғырту мен дамытудың, осы үдерісте қазақ ағартушыларының педагогикалық мұрасын пайдаланудың жолдарын, мұғалімдерді даярлаудың тиімді технологиялары мен форматтарын әзірлеу мен енгізу мәселелерін, ақпараттық қоғамдағы білім беру кеңістігінің ерекшеліктерін айқындауға, сондай-ақ педагогтердің инновациялық қызметінің тәжірибесін жинақтауға, педагогикалық үдеріс субъектілерін психологиялық-педагогикалық қолдауға мүмкіндік берді.

Бұл жинақтың материалдары ғалымдарға, жоғары оқу орындары мен колледж оқытушыларына, мектеп мұғалімдері мен мектепке дейінгі тәрбиешілерге, педагог-психологтарға, магистранттар мен студенттерге қызықты болуы мүмкін.

В сборнике содержатся материалы Международной научно-практической конференции Алтынсаринские чтения «Инновации, знания, опыт – векторы образовательных треков». Многообразие и широта обсуждаемых проблем позволили авторам статей определить векторы модернизации и развития современного образования, использования в данном процессе педагогического наследия казахских просветителей, вопросов разработки и внедрения эффективных технологий и форматов подготовки учителей, специфики образовательного пространства в информационном обществе, а также обобщения опыта инновационной деятельности педагогов, психолого-педагогической поддержки субъектов педагогического процесса.

Материалы данного сборника могут быть интересны ученым, преподавателям вузов и колледжей, учителям школ и воспитателям дошкольных учреждений, педагогам-психологам, магистрантам и студентам.

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Требования, которые общество предъявляет к личности и работе учителя младших и старших классов, становятся понятными, если взглянуть на многообразие его функций и ролей в образовательном процессе. Для эффективного выполнения своей работы учителю важно развивать навыки педагогического общения, создающие атмосферу психологического развития индивидуальности ученика. Педагог, который может создать спокойную, основанную на уважении, рабочую обстановку в коллективе, стимулирующую активное вовлечение ребенка, квалифицированное учителя, чьи ученики знают весь учебный материал, правила, но неуверенны, загружены, имеют низкую самооценку.

Каков современный учитель начальной школы?

- Учитель, постоянно повышающий свою квалификацию и обучающийся в течении всей жизни.
- Учитель, для которого диплом педагога является ключом в мир образования, возможностью для профессионального роста.

- Учитель, который обучает не только школьников, но и более молодых коллег.

- Учитель, готовый всегда делиться знаниями со всеми не только в своей школе, но и за ее пределами.

- И в завершение самое главное. Учитель – это духовно-нравственный пример для ребенка, способный привить нашим юным гражданам ценности казахстанского общества и желание учиться всю жизнь.

Сегодня, в эпоху цифрового развития, педагогу необходимо владение передовыми технологиями, внедрение их в свою жизнь и преподавание. Учитель должен постоянно стремиться к обновлению знаний, совершенствованию своего творческого мышления, ведь так он подает пример обучающимся и задает тон образовательному процессу.

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УДК 37

HARD SCIENCE TEACHING: THE STUDY OF US EXPERIENCE AND ITS IMPLEMENTATION IN KAZAKHSTAN EDUCATION

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Аңдатпа

Бұл мақалада 2022 жылдың мамырынан қазанына дейін «Болашақ» тағылымдамасы аясында жүргізілген зерттеу нәтижелері талқыланады. Бұл зерттеудің мақсаты АҚШ мектептерінде жаратылыстану-математикалық цикл пәндерін оқыту тәжірибесін зерттеу және қазақстандық мұғалімдердің тәжірибесіне оң тәжірибені енгізу болды. Бұл зерттеудің өзектілігі ғылым саласындағы әртүрлі елдердің ынтымақтастығы кеңейе отырып, оқыту мен оқытудың біртұтас көзқарасын дамыту қажеттігінде.

Түйінді сөздер: жаратылыстану-математикалық цикл пәндері, оқыту тәжірибесі, зерттеу, қазақстандық мұғалімдер, оқыту

Аннотация

В данной статье рассмотрены результаты исследования, проведенного в рамках стажировки по линии Болашақ, с мая по октябрь 2022 года. Целью данного исследования было изучить опыт преподавания предметов естественно-математического цикла в школах США и внедрить положительный опыт в практику казахстанских учителей. Актуальность данного исследования заключается в том, что по мере расширения сотрудничества разных стран в области науки, необходимо выработать единый подход к обучению и преподаванию.

Ключевые слова: предметы естественно-математического цикла, опыт преподавания, исследования, казахстанские учителя, преподавание.

Abstract

This article discusses the results of a study conducted as part of the Bolashak internship from May to October 2022. The purpose of this study was to study the experience of teaching subjects of the natural and mathematical cycle in US schools and introduce positive experience into the practice of Kazakh teachers. The relevance of this study lies in the fact that with the expansion of cooperation between different countries in the field of science, it is necessary to develop a unified approach to learning and teaching.

Key words: *science-mathematical cycle subjects, teaching experience, research, Kazakh teachers, teaching*

«Education is the most powerful weapon you can use to change the world»
Nelson Mandela

The relevance of the research topic is related to ongoing discussions on reforming of middle and high education in among Kazakh scholars, academics and policymakers. Mainly, the issue of how to improve teaching methods at school to make our students more competitive in the national and global labor market. The second important issue is what can be done to educate personnel capable of promoting science and technology in Kazakhstan. Following, what actions need to be taken to make better use of our human resources.

Kazakhstan is a large country with huge human and natural resources and to successfully apply the available resources for the benefit of the nation, it is necessary to carefully study the experience of the countries that managed to do this. Nowadays we can see that the countries, which put much input in the development education and science (for example, the USA, China, Singapore, etc.) are making great success and progress in terms of economy advancement. Since education is one of the legacies that previous generations can leave to future generations, as a responsible generation, we must make every effort to improve the quality of school education. This demand of society must be met by following the most advanced education systems.

In this regard, the following questions are worth to discuss: what are the shortcomings in Kazakhstani teaching and what needs to be done to eliminate them.

In the modern world, when the tasks that faced the world a hundred years ago have already been solved to one degree or another, new challenges and tasks have appeared that our children will have to solve and the task of school education is to prepare them for this new life. And this means that teaching, school, teachers should be fully aware of this responsibility. The first steps on this path in Kazakhstan is the creation of a network of Nazarbayev Intellectual Schools and we must recognize this experience as successful, which is confirmed by the high assessment of the work of these schools by society and the excellent learning results that we see in the fact that graduates of these schools enter leading Kazakh and foreign universities, successfully graduate them, and benefit our country in their workplaces. We hear about successful scientific projects, important social initiatives, interesting developments of graduates of Nazarbayev Intellectual Schools, which is the fruit of the efforts invested in the development of this project. In this regard, the next question arises: “What is the difference between teaching in NIS and teaching in public schools?” The first and foremost is, of course, a program that was developed in cooperation with the International Expert Council of Cambridge, and it is designed in such a way as to find a certain compromise between the national curriculum, which is a part of Soviet education and the world ones, according to which modern school children study all over the world. As a teacher with 28 years of experience, I went through this transition together with everyone else, which was not easy for all involved in the process and I realized how difficult it was to change the program in school and therefore I came to the conclusion that it was necessary to change the teaching in such a way that the program could be changed in accordance with the demand of the society and labour market. Those process of changing the curriculum should not be time-consuming and unusual for the education system. It is clear that changes in the program entail changes in many other aspects – new textbooks [required](#) for new program [mes](#), [retraining of](#) teachers, [updating of](#) equipments or teaching tools. But as for textbooks, at this time there is no need to use paper textbooks, which really require colossal labor and material costs. Therefore, it is enough if teachers have a list of recommended scientific literature that they can use in the classroom and provide electronic copies for download and unlimited use.

1. Teaching in USA:

a. Comparison of curriculums

While comparing the programs on Math and Science, we have observed significant differences. The first difference is an approach: if in Kazakh schools always subject given in the American school given the courses especially in the high school. In this way in high school reached to diversity, and there student have a choices.

In the same way, the problem with the education of gifted children is solved, if they have the desire and ability to study some subjects in depth, they choose the appropriate course and thus the variability of the educational process is achieved. For example, if in high school geometry is not studied separately, but it is possible to choose it as a course, while in high school this course is presented as a basic one.

If the teaching of mathematics in high schools in Kazakhstan's schools is the same as in secondary school, then in high school education is based on the principle of choosing courses. This allows graduates to be more flexible in choosing a subject and reduce the workload.

Teachers voice

What programs do you use to teach your subject? Who provides them to you?

Answers

The content is provided directly by Virginia Department of Education. See the following link: https://doe.virginia.gov/testing/sol/standards_docs/science/2018/index.shtml

Arlington's Science Central Office provides more details using the following website: <https://sites.google.com/apsva.us/apsscience/home/grade-7-life-science>

My colleagues and I create the materials we use. We will sometimes use inspiration from platforms like Teachers Pay Teachers, but for the most part, we modify the materials we have used in the past to fit our current curriculum. We sometimes use lessons from the county curriculum documents, but when we do, we modify them to fit the structure of our class. The English 7 CLT plans our lessons together. Before we start a unit, we plan the end of unit project or essay, then fill in the calendar with the lessons that will lead us there. We split responsibilities so that no one person is creating all activities. For example, one person may create the activity, another person will create the instructions, and the other person will make the copies. During our planning, we pay attention to differentiation; how will we support our struggling students and how we will challenge our gifted learners? We like to offer choice, so students get to decide their level of challenge.

b. Methods for learning

We visited several schools, also attended more than 10 lessons at Dorothy Hamm Middle School. The focus of my observation was the teaching methods used by teachers in the classroom. Especially if these methods were used by several teachers, as this is an indirect recognition of their effectiveness. We also attended a two-day workshop on Kagan Cooperative Technology, which the school's teachers, along with Coach Heather Donaldson, plan to introduce this year into teaching practice. Thus, I saw how new learning technologies are being introduced. I was also invited to a weekly lesson planning by teachers of the same parallel. Here I also noted that teachers choose the methods used depending on their own preferences and on the characteristics of the topic.

One of the effective of learning method I want to note it is reading time. And this applies not only in English lessons. I think, it is very important to teach a child thoughtful reading, especially in our time, when children are unable to understand the long text. It is important to create a necessary atmosphere in the lesson, motivate student to immerse themselves in the text, offer questions to test understanding, choose the most relevant text that suits this lesson. I watched the riding time in science lessons, when children could read not only special literature, but also fiction text. This enables student to consciously devote time to reading. Also, the teacher can see what literature the student is interested in, which in its turn helps to get to know the inner world of the student better, gives impetus to finding common interests among children when they discuss the plot or the heroes of the book. I believe that this practice should be introduced everywhere for the new generation to pay more attention to reading.

I would also like to note the special role of the school library in the educational process. In the United States, libraries play a special role in organizing the life of the community. They have a leading role in developing students' reader interests.

In addition to information resources, the library provides convenient places for classes, which is important for example, large families. Also, libraries provide assistance in the preparation of scientific papers or language learning, support foreign students, organize discussion and reading courses.

Also, one of the effective teaching is a group work or its improved version, Kagan cooperative learning technology. We observed the lessons during the implementation of this system and saw that it is quite effective in training and gives good results. As Marzano, Pickering and Pollock said "Of all classroom grouping strategies, cooperative learning may be the most flexible and powerful". Cooperative Learning solves to four crises: 1) the achievement crisis, so hundreds of research studies demonstrate cooperative learning boosts achievement at all grades and in all academic content areas; 2) the achievement gaps crisis – cooperative learning promotes academic gains, especially for minority and low achieving students, lowering the achievement gap and increasing educational equity; 3) the race relations crisis – cooperative learning improves mixed-race interaction, creates more cross-race friendship, and replaces racism with understanding and empathy and 4) the social skills crisis – cooperative learning improves the development of personal and social skills, largely missing in society, yet desperately sought in the 21st Century [1, p.24]. Methods such as cooperative learning are an effective tool for solving many problems in education,

which is confirmed by research, so I believe this method, like others, should be introduced into the teaching of exact sciences in Kazakhstan.

Teachers voice

What do you think are the most effective teaching methods? Briefly describe those that you can recommend to colleagues.

Answers

Making engaging lessons is the key. Science uses different ways to engage students: hands-on labs, kahoot, Blooket, Nearpod, videos (Generation Genius, videos from youtube) Stations, working collaborative, animations (from HHMI, from learn.genetics.utah.edu, etc). I also post extensions to each unit, so that students can go deeper if they are done with their work.

My most effective teaching method is centered around connection and routine. At the beginning of the year, I prioritize "getting to know you" activities and procedure review, so students understand expectations from the very start and so they develop a closeness with one another and with me. When students feel safe in their learning environment, they are more likely to take risks, express themselves honestly, and develop friendships that extend outside of the classroom.

c. Motivation as a factor of the successful learning

One of the most important factors of successful learning is the motivation of students. According to recent studies»Motivating students to learn in school" is a topic of great concern for educationist today, and motivating students so that they can succeed in school is one of the greatest challenges of education. Student motivation is an essential element that is necessary for quality education»[2, p.56]Hadre et al. [3, p.34] argued that motivation is among the most powerful determinants of students' success or failure in school. In the learning sphere, spurring students' motivation to engage in academic activities is part of teachers' teaching-learning strategy if the teacher wants to see consistent and quality results. For a learner to make an effort there must be a motive. Motive simply means a desire, need, urge, or drive to achieve a certain goal [4, p.83].

Teachers voice

How do you motivate students to complete assignments and teach your subject?

Answers

By posting grades weekly, leaving them messages in Canvas and in the gradebook. Our team also works during study hall (Phoenix time) in checking students' performance and having them reach out to the teachers to work on missing assignments or to get opportunities to improve their grade.

I motivate my students in a variety of ways. Sometimes, it is as simple as offering them candy or a sticker for completing a task. This strategy is typically reserved for execution of class procedures, so that I enforce class routine throughout the school year. Otherwise, I motivate students by transparently explaining the real life lesson behind our activities. When students understand how the content relates to their lives, they are more likely to engage. They can see how the learning in class impacts personally.

2. Summary: Recommendation for implementation

Changes in the program

It is necessary to revise the learning programs in accordance with world standards, to introduce a large share of the experiment, by reducing the share of theory, to use modern textbooks for teaching, for a start, you can translate the existing ones that teachers use in the United States. We also need more teaching aids, workbooks that teachers can use in the classroom.

Digital support of the learning

In Kazakhstan's education, steps are already being taken in this direction, but if a certain amount is invested in the purchase and software content of tablets, this will be justified, since such support for learning will save a lot of effort and resources for students and teachers. This will allow the use of electronic means of teaching, monitoring and assessment, but it is necessary to organize the operating system on the tablet in such a way that it supports only school applications.

Educational environment

In teaching the hard sciences, it is necessary to use all available visual resources. Thus, my recommendation is that it is necessary to use all four walls of the office, use inspiring inscriptions, board games, zoning of classrooms to create a full-fledged educational environment. It is necessary to provide local lighting, alternative educational places (for example, to lay a carpet on the floor and allow students to sit on it), to use the motives of favorite literary works.

Reading time, role of the libraries

The role of reading in education is invaluable, so allowing time in the classroom to read will play a crucial role in instilling a reading culture. To make this approach more effective, it is necessary to provide reading time in each lesson, try to ensure that students carry their books with them, arrange book clubs or discussions on the books reading. It is also necessary to increase the role of libraries in school and local life. In teaching scientific subjects, the role of scientific literature is also invaluable, it is necessary to read and

discuss scientific articles in the classroom to teach students to use the necessary terminology in the right context.

Group work or Kagan cooperative learning system

Communication is the most important social skill that must be nurtured from early childhood. All the most important discoveries and projects are made in the team. To cultivate this skill, it is necessary to use group and cooperative methods of work. I plan to introduce into my practice and the practice of my colleagues Kagan cooperative learning, which has positive results confirmed by numerous studies. This technique has much in common with the group work that Kazakhstani teachers use, but it also has a number of features that make it more effective.

Use different methods to motivate students

Since motivation in the modern educational process is of particular importance, it is necessary to introduce modern methods of motivating students and give them a place when planning a lesson. As Americanteachers say: «I motivate my students in a variety of ways. Sometimes, it is as simple as offering them candy or a sticker for completing a task. This strategy is typically reserved for completion of class procedures, so that I enforce class routine throughout the school year. Otherwise, I motivate students by transparently explaining the real life lesson behind our activities. When students understand how the content relates to their lives, they are more likely to getengaged. They can see how the learning in class impacts personally».I also want to note that teachers also need motivation for their work, for this it is necessary to reduce the administrative part of the teacher's work and increase the time for working directly with students and parents.

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ТРАНСФОРМАЦИЯ ДЕЯТЕЛЬНОСТИ ПЕДАГОГИЧЕСКОГО ПРОФЕССИОНАЛИЗМА В СОВРЕМЕННОМ ОБРАЗОВАТЕЛЬНОМ ПРОЦЕССЕ

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Аннотация

В статье рассматриваются тенденции развития педагогического мастерства в современной образовательной среде. Сейчас понятие педагогической профессионализма достаточно широкое. Обычно термин «профессиональный» применяется при необходимости подчеркнуть достигнутую высоту. Профессионализм педагога может быть раскрыт как взаимодействие в процессах развития профессионального потенциала человека и профессионального потенциала деятельности. На наш взгляд педагогический профессионализм является характеристикой различных взаимосвязанных компонентов, которые отражают определенную учебную ситуацию, соответствующую социальному требованию общества. совершенствование прямо зависит от того, как развивается образовательное пространство, его эффективность в настоящее время во многом зависит от интеграции.

Ключевые слова: педагог, образование, компетентность, профессионализм, информатизация, познавательная активность.