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SECTION 2. Applied mathematics. Mathematical modeling.

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COMPUTER MODELLING OF PROBLEMS FILTERING LOW-CONCENTRATION SUSPENSIONS

Abstract: *The paper presents a mathematical model and a numerical method for solving the problem of the technological process of filtering low-concentration suspensions to determine the ranges of change of ionexchange filter parameters, and the results of computational experiments.*

Key words: *Mathematical model, numerical method, filtration, concentration, filter.*

Language: *English*

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КОМПЬЮТЕРНОЕ МОДЕЛИРОВАНИЕ ЗАДАЧИ ФИЛЬТРОВАНИЯ МАЛОКОНЦЕНТРИРОВАННЫХ СУСПЕНЗИЙ

Аннотация: *В статье приведены математическая модель, численный метод решения задачи технологического процесса фильтрования малоконцентрированных суспензий для определения диапазонов изменения параметров ионообменного фильтра, а также результаты вычислительных экспериментов.*

Ключевые слова: *Математическая модель, численный метод, фильтрования, концентрация, фильтр.*

Актуальность работы. Сточные воды предприятий химической, машиностроительной и других отраслей промышленности содержат в своём составе токсичные ионы тяжёлых металлов, которые при попадании в водоемы пагубно воздействуют на окружающую флору и фауну, а также оказывают токсикологическое воздействие при попадании в организм человека.

Для защиты сточных и водозаборов подземных вод от источников загрязнения, выбрасываемых промышленными объектами, необходимо разработать эффективные методы, технические средства и технологии на основе проведенного комплексного исследования процесса в целом. В технологии очистки жидких ионизированных промышленных выбросов обычно применяются фильтры с ионитными фильтровальными перегородками. Такая технология также широко применяется при подготовке питьевой воды, переработке продуктов питания, обработке сырья общественного назначения и т.д.

Как следует из анализа проведенных НИР по данной проблеме, одними из эффективных методов для проведения комплексного исследования и принятия решений по процессу фильтрования ионизированных жидкостей являются компьютерное моделирование и проведение вычислительных экспериментов (ВЭ) на ЭВМ при широком изменении режимов работы фильтра, физико-химических свойств раствора и технических характеристик фильтровального агрегата.

В данной статье рассматриваются разработка адекватной математической модели, численного алгоритма и методы вычислений. Для анализа функционирования технологического процесса фильтрования суспензии проведена серия ВЭ на ЭВМ.

Так как процесс фильтрования - один из основных этапов при приготовлении продуктов и

сырья в пищевой, фармацевтической, горно-металлургической, нефтеперерабатывающей и т.д. промышленности, качество и количество выходной продукции зависит от правильного выбора режимов работы фильтрующих агрегатов.

В последние годы по технологиям сепарирования, сортирования, фильтрования как сыпучих, так и жидких, а также ионизированных растворов получены значительные результаты практического и теоретического характера.

В частности, в работе [1, с.260] модель баланса популяции была сформирована для перевозки частиц суспензий в пористых средах. Уравнения для частиц и распределения размера пор были выведены из стохастического уравнения «Master». Модель учитывает уменьшение потока частиц за счет ограничений для крупных частиц для перемещения через небольшие поры. Аналитическое решение для малоконцетрированных частиц получено для основных частиц и распределения размера пор. Осредненные уравнения существенно отличаются от традиционных глубокой фильтрационной моделью пласта.

В работе [2, с.79-81] предложена феноменологическая модель глубоководной инфильтрации. Предложенная математическая модель комбинируется с уравнением адъективной дисперсии и нелинейным уравнением кинетики рассматриваемого технологического процесса. Модель включает дисперсии и составляет пространственные и временные изменения в пористой среде. Предполагается, что в любом месте внутри колонны депозит фильтра формируется как необратимый налив слоя с последующим образованием обратимого депозита на рабочем этапе. Последнее продолжается до тех пор, пока депозит локально не достигнет своего максимального значения. Затем с помощью фильтра происходит прорыв. Уравнения решаются численно с использованием явной конечно-разностной схемы. Полученные результаты сопоставлены с натурными экспериментами на установках «EPA», выполненными израильской водной компанией «Mekorot».

В работе [3, с.70] описываются эксперименты фильтрации для углеродной нанотрубки через фильтр экрана. В работе также приводится математическая модель для имитации экспериментов фильтрации углеродной нанотрубки и рассматриваются универсальный анализатор наночастиц, а также результаты, имеющие отношение к несферическим аэрозольным частицам.

В работе [4, с.413-415] приводится двухмерная переходная математическая модель, представляющая поведение глубокопластной фильтрации для алюминия. Уравнения расхода и массы фракции решены с использованием программного комплекса CFX. Модель учитывает все основные физические процессы, происходящие при инфильтрации. Также в работе на каждом временном шаге модели вычисляют концентрации включений, остающихся в жидкости и оседающие в порах фильтровальной перегородки. Разработанные математическая модель и ее программное обеспечение были применены для различных промышленных геометрий фильтровальных агрегатов. Для доказательства математической модели полученные результаты сравнивались с имеющимися экспериментальными заводскими данными и исследовано влияние различных параметров модели на показатели фильтрационного процесса.

В работе [5, с.2777] исследованы сложные механизмы осаждения частиц в свече-фильтре. С целью изучения процесса фильтрования и его моделирования проведены фильтрационные эксперименты с подходящей частицей масляной суспензии в экспериментальном фильтре. В то время как некоторая глубина фильтрации происходит в начале срока службы свечи фильтра, блокирование и киек-слой фильтрации являются основными механизмами, ответственными за засорение фильтра.

В работе [6, с.3] представлены и решены вопросы учета обратного влияния технологических характеристик процесса (концентрации загрязнения жидкости и осадка) и характеристик среды (коэффициентов пористости, фильтрации, диффузии, массообмена и др.) на примере очистки жидкости в магнитных и сорбционных фильтрах. Представлен алгоритм численно-асимптотического приближенного решения соответствующих задач модели, которые описываются системой нелинейных сингулярных дифференциальных уравнений типа «Конвекция-диффузия-массообмен».

В работе [7, с.114-116] исследованы адсорбционные удаления катионных поверхностно-активных веществ из воды с помощью гидрофобного полимера адсорбента. Равновесие и кинетика хлорида-бензалкония адсорбции на Amberlite XAD-16 изучены в периодическом адсорбере. Эксперименты по адсорбции с неподвижным слоем катализатора использованы для определения динамической нагрузочной способности адсорбента.

В работе [8, с.114] рассматривается движение жидкостей, содержащих взвешенные частицы, в пористых средах. Представлена математическая модель взаимодействия монодисперсной взвеси с поровой структурой. Исследованы изменения параметров среды и потока в условиях равновесных режимов.

В работе [9, с.133] анализируются уравнения, описывающие течения слабосжимаемой жидкости в слабодеформируемом пористом скелете при нелинейном законе фильтрации с предельным (начальным) градиентом давления.

Работа [10, с.46] посвящена построению общего решения нелинейной системы уравнений, описывающей одномерные течения малоконцентрированной суспензии в пористой среде с учетом оседания частиц. В работе указан ряд решений, выражающихся в элементарных функциях. Проанализированы условия образования нефизичных особенностей.

В работе [11, с.106] рассмотрены теоретические основы очистки малоконцентрированных суспензий методом фильтрования, имеющие широкое применение в технологии очистки воды питьевого назначения. Практическим приложением теоретических основ фильтрования является метод технологического моделирования процесса для решения задачи улучшения работы фильтровальных сооружений на водоочистной станции г. Астаны. Приведены результаты исследований на модульной фильтровальной установке по определению некоторых технологических параметров.

В работе [12, с.145] рассматривается задача фильтрации двухчастичной суспензии через пористую среду. Предлагается модель, основанная на законах сохранения массы для частиц и для жидкости, а также локальных законах захвата частиц, описываемых кинетическими уравнениями. В отличие от известной модели для однотипных частиц, данная модель позволяет учесть различия в физических свойствах частиц (например, их размер). Проведенное исследование показывает, что новая модель воспроизводит экспериментальные данные, которые ранее не удалось воспроизвести в рамках традиционной одночастичной модели.

В работе [13] исследован процесс разделения неоднородных жидких сред при изменении конструктивных параметров ротора центрифуги и технологических факторов центробежного разделения суспензий, содержащих тонкодисперсную твердую фазу. Рассмотрено осаждение твердой фазы в роторе центрифуги, проведена сравнительная оценка эффективности разработанных центрифуг с учетом полученных результатов исследования процессов разделения малоконцентрированных суспензий продуктов переработки целлюлозы, изучено влияние технологических и конструктивных параметров ротора центрифуги на эффективность разделения суспензий.

В работе [14, с.49] рассмотрены способы учета обратного влияния характеристик процесса (концентрации загрязнения жидкости и осадка) на характеристики среды (коэффициенты пористости, фильтрации, диффузии, массообмена и др.) на примере очистки жидкости от многокомпонентных загрязнений магнитными и сорбционными фильтрами. Предложен алгоритм численно-асимптотического приближения решения соответствующей модельной задачи, описываемой системой нелинейных сингулярно возмущенных дифференциальных уравнений типа «конвекция-диффузия-массообмен». Приведены результаты компьютерного эксперимента.

Анализ проведенных исследований показал, что при фильтровании смеси происходит закупоривание пор фильтровальной перегородки фильтра, вследствие чего растет гидравлическое давление на поверхности фильтра и происходит деформация слоя осадка и перегородки фильтра.

Для учета влияния этих факторов на технологию фильтрования суспензии необходимо моделировать процесс, провести ВЭ на ЭВМ и определить режим работы и время переключения фильтра, а также диапазоны изменения основных параметров фильтровального агрегата.

Постановка задачи. Для исследования указанного выше процесса предположим, что движение смесей происходит под действием постоянного перепада давления на участке фильтрации при переменном во времени расходе $q = q(t)$ (колматация каналов, водоемов, земляных плотин, а также явления суффозии из названных сооружений и др.) или под действием переменного во времени перепада давления на участке фильтрации при постоянном расходе $q = q_0$ (засорение фильтров, заиление призабойной зоны нагнетательных скважин и др.) смеси. В этом случае предполагается, что пористая среда и суспензия таковы, что в процессе фильтрации последняя часть твердого вещества взвеси задерживается пористой средой, часть ранее осевших частиц срывается и попадает в фильтрационный поток и часть проносится фильтрационным потоком дальше рассматриваемого участка (рис.1).

Рассмотрим единицу объема порового пространства в процессе фильтрации смеси. Также отметим, что насыщенностью называется количество вещества в единице объема порового пространства.

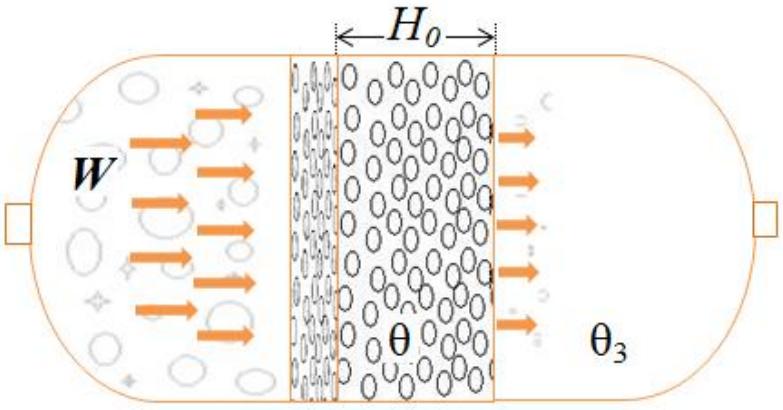


Рисунок 1 - Расчетная схема фильтрования суспензий

Из закона сохранения баланса, движения и сохранения масс имеем [15, с.26-31]:

$$\frac{\partial\theta}{\partial t}+\frac{W}{m}\frac{\partial\theta}{\partial x}+\frac{\partial\alpha}{\partial t}+(1-m_0)\frac{\partial\delta}{\partial t}=\mu_0\frac{\partial^2\theta}{\partial x^2}\,, \tag{1}$$

$$\theta-\theta_3=\frac{\alpha}{1-\delta}\,, \tag{2}$$

$$\frac{\partial\delta}{\partial t}=\lambda\left(\theta-\gamma\delta\right). \tag{3}$$

Уравнение (2) запишем следующим образом:

$$\alpha=\left(\theta-\theta_3\right)\left(1-\delta\right),$$

и тогда получаем

$$\frac{\partial\alpha}{\partial t}=-\left(\theta-\theta_3\right)\frac{\partial\delta}{\partial t}+\left(1-\delta\right)\frac{\partial\theta}{\partial t}-\left(1-\delta\right)\frac{\partial\theta_3}{\partial t}. \tag{4}$$

Подставляя уравнения (3) и (4) в (1), получаем

$$\frac{\partial\theta}{\partial t}+\frac{W}{m}\frac{\partial\theta}{\partial x}-\lambda\left(\theta-\theta_3\right)(\theta-\gamma\delta)+\left(1-\delta\right)\frac{\partial\theta}{\partial t}-$$

$$-\left(1-\delta\right)\frac{\partial\theta_3}{\partial t}+\lambda\left(1-m_0-\theta+\theta_3\right)\left(\theta-\gamma\delta\right)=\mu_0\frac{\partial^2\theta}{\partial x^2},$$

или

$$\left(2-\delta\right)\frac{\partial\theta}{\partial t}+\frac{W}{m}\frac{\partial\theta}{\partial x}-\lambda\left(1-m_0-\gamma\delta+\theta_3\right)\theta+\lambda\gamma\delta\left(1-m_0+\theta_3\right)+\lambda\theta^2-\left(1-\delta\right)\frac{\partial\theta_3}{\partial t}=\mu_0\frac{\partial^2\theta}{\partial x^2}.$$

Для упрощения вводим обозначения

$$\lambda_1=\lambda\left(1-m_0-\gamma\delta+\theta_3\right),\quad \lambda_2=\lambda\gamma\delta\left(1-m_0+\theta_3\right),$$

тогда получаем

$$\left(2-\delta\right)\frac{\partial\theta}{\partial t}+\frac{W}{m}\frac{\partial\theta}{\partial x}-\lambda_1\theta+\lambda_2+\lambda\theta^2-\left(1-\delta\right)\frac{\partial\theta_3}{\partial t}=\mu_0\frac{\partial^2\theta}{\partial x^2}.$$

С учетом сказанного выше реальная постановка задачи принимает следующий вид:

$$\begin{cases} (2-\delta)\dfrac{\partial\theta}{\partial t}+\dfrac{W}{m}\dfrac{\partial\theta}{\partial x}-\lambda_1\theta+\lambda_2+\lambda\theta^2-(1-\delta)\dfrac{\partial\theta_3}{\partial t}=\mu_0\dfrac{\partial^2\theta}{\partial x^2}, \\ \dfrac{\partial\delta}{\partial t}=\lambda(\theta-\gamma\delta), \\ \dfrac{d\theta_3}{dt}=\dfrac{1-\bar{\theta}}{2-\bar{\delta}}\dfrac{d\bar{\theta}}{dt}+\dfrac{1}{2-\bar{\delta}}\left[\lambda\left(\bar{\theta}-\gamma\bar{\delta}\right)\left(1-\bar{\theta}\right)-\dfrac{\theta_0 W}{H_0(1-\theta_0)}\right]+ \\ +\theta_3\left[\lambda\left(\bar{\theta}-\gamma\bar{\delta}\right)+\dfrac{W}{H_0(1-\theta_0)}\right]\dfrac{1}{2-\bar{\delta}(t)}, \end{cases} \tag{5}$$

где

$$\bar{\theta}(t)=\int_0^1\theta(x,t)dx; \quad \bar{\delta}(t)=\int_0^1\delta(x,t)dx.$$

Начальные и граничные условия для системы (5) имеют следующий вид [16, с. 359-360]:

$$\begin{cases} \theta(t,x)=\varphi_1(x), \quad \delta=0, \quad \theta_3=0 \text{ при } t=0, \\ \theta(t,0)=\theta_0 \quad \text{при } x=0, \\ \theta(t,1)=\varphi_2(t) \text{ при } x=1, \end{cases} \tag{6}$$

где

$$\varphi_1(x)=e^{-\lambda H_0 Bx}, \quad \varphi_2(t)=\theta_0\left(1-A_1Be^{-A_2t}\int_0^1 I_0\left(2\sqrt{\alpha t}\right)dx\right),$$

$$B=m_0(1-m_1)/q_0, \quad \alpha=A_1A_2Bx.$$

Здесь θ - объемная концентрация взвешенного твердого вещества в движущейся смеси; θ_0 - начальная концентрация суспензий; δ - скорость осаждения частиц в поровом пространстве; W - скорость фильтрования; m - пористость фильтра; m_0 - начальная пористость фильтра; θ_3 - выходная концентрация смеси; W_0 - начальная скорость фильтрования; H_0 - толщина фильтровальной перегородки; m_1 - пористость осевшей массы; μ_0 - коэффициент искусственной вязкости; λ - кинетический коэффициент; A_1, A_2 - опытные параметры; q_0 - начальный единичный расход; γ - удельный вес вещества; I_0 - функция Бесселя нулевого порядка.

Метод решения. Так как поставленная задача описывается нелинейными дифференциальными уравнениями частного производного второго порядка, получить аналитическое решение затруднительно. Поэтому поставленную задачу будем решать численным методом, основанным на конечно-разностной аппроксимации дифференциальных операторов на разностные. В итоге получаем систему алгебраических уравнений относительно искомых переменных [17, с.115-117, 18, с.50].

Для численного интегрирования задачи и обеспечения устойчивой и консервативной схемы воспользуемся неявной конечно-разностной схемой и получим следующее:

$$(2-\delta)\frac{\theta_i^{n+1}-\theta_i^n}{\tau}+\frac{W}{m}\frac{\theta_{i+1}^{n+1}-\theta_{i-1}^{n+1}}{h_x^2}-\lambda_{1i}\theta_i^{n+1}+\lambda_{2i}+\lambda\left(\theta_i^{n+1}\right)^2-(1-\delta_i)\frac{\partial\theta_3}{\partial t}=$$
$$=\mu_0\frac{\theta_{i+1}^{n+1}-2\theta_i^{n+1}+\theta_{i-1}^{n+1}}{h_x^2}. \quad (7)$$

Нелинейные члены в уравнении (7) линеаризуем следующим образом:

$$\left(\theta_i^{n+1}\right)^2=2\theta_i^{n+1}\cdot\theta_i^{s-1}-\left(\theta_i^{s-1}\right)^2$$

и получаем

$$(2-\delta)\frac{\theta_i^{n+1}-\theta_i^n}{\tau}+\frac{W}{m}\frac{\theta_{i+1}^{n+1}-\theta_{i-1}^{n+1}}{h_x^2}-\lambda_{1i}\theta_i^{n+1}+\lambda_{2i}+$$
$$+2\lambda\theta_i^{n+1}\cdot\theta_i^{s-1}-\lambda\left(\theta_i^{s-1}\right)^2-(1-\delta_i)\frac{\partial\theta_3}{\partial t}=\mu_0\frac{\theta_{i+1}^{n+1}-2\theta_i^{n+1}+\theta_{i-1}^{n+1}}{h_x^2},$$

или

$$(2-\delta)\frac{\theta_i^{n+1}-\theta_i^n}{\tau}+\frac{W}{m}\frac{\theta_{i+1}^{n+1}-\theta_{i-1}^{n+1}}{h_x^2}-\left(\lambda_{1i}-2\lambda\theta_i^{s-1}\right)\theta_i^{n+1}+\lambda_{2i}-\lambda_{3i}=$$
$$=\mu_0\frac{\theta_{i+1}^{n+1}-2\theta_i^{n+1}+\theta_{i-1}^{n+1}}{h_x^2}.$$

Здесь

$$\lambda_{1i}=\lambda\left(1-m_0-\gamma\delta_i+\theta_{3i}\right),\quad \lambda_{2i}=\lambda\gamma\delta_i\left(1-m_0+\theta_{3i}\right),\quad \lambda_{3i}=\lambda\left(\theta_i^{s-1}\right)^2+(1-\delta_i)\frac{\partial\theta_3}{\partial t}.$$

Далее группируя члены уравнения (7), получаем

$$a_i\theta_{i+1}-b_i\theta_i+c_i\theta_{i-1}=-d_i, \quad (8)$$

где

$$a_i=\frac{\mu_0}{h_x^2}-\frac{W}{2mh_x},\ b_i=\frac{2\mu_0}{h_x^2}+\frac{2-\delta_i}{\tau}+\lambda_{1i},\ c_i=\frac{\mu_0}{h_x^2}+\frac{W}{2mh_x},\ d_i=\frac{(2-\delta_i)\theta_i^n}{\tau}-\lambda_{2i}+\lambda_{3i}.$$

Решение задачи (8) ищем в виде

$$\theta_i=A_i\theta_{i+1}+B_i,$$

где прогоночные коэффициенты определяются с помощью

$$A_i=\frac{a_i}{b_i-c_iA_{i-1}},\quad B_i=\frac{a_i+c_ib_{i-1}}{b_i-c_iA_{i-1}},\quad i=1,2,....,N-1.$$

Прогоночные коэффициенты $A_0,\ B_0$ определяем из условия (6). В данном случае - $A_0=0,\ B_0=1$. Решая уравнение (8), определяем концентрацию смеси на поверхности

фильтровальной перегородки фильтра. После определения концентрации на каждом временном слое будем вычислять скорости осаждения частиц δ в порах фильтра и выходную концентрацию θ_3 раствора.

Зная значения θ_3 и δ на каждом временном слое, вычислим изменения перепада давления с помощью уравнения движения жидкой фазы:

$$-\frac{1}{\rho H}\frac{\partial p}{\partial x}=\frac{\mu H_0 W}{\rho H k_0(1-\delta)^2}-W\frac{d\theta_3}{dt},$$

или

$$\frac{\partial p}{\partial x}=-\frac{\mu H_0 W}{k_0(1-\delta)^2}+\rho H W\frac{d\theta_3}{dt} \qquad (9)$$

при условии $p(0,t)=p_0$.

Здесь k_0 - коэффициент проницаемости; μ - вязкость жидкости; ρ - плотность жидкости; H - высота фильтровальной колонки, p - поверхностное давление внутри колонки фильтра.

При вычислении давления в формуле (9) вместо $d\theta_3/dt$ подставляется правая часть третьего уравнения системы (5).

Результаты и выводы. По приведенному алгоритму произведен расчет очистки прядильных растворов от взвешенных частиц.

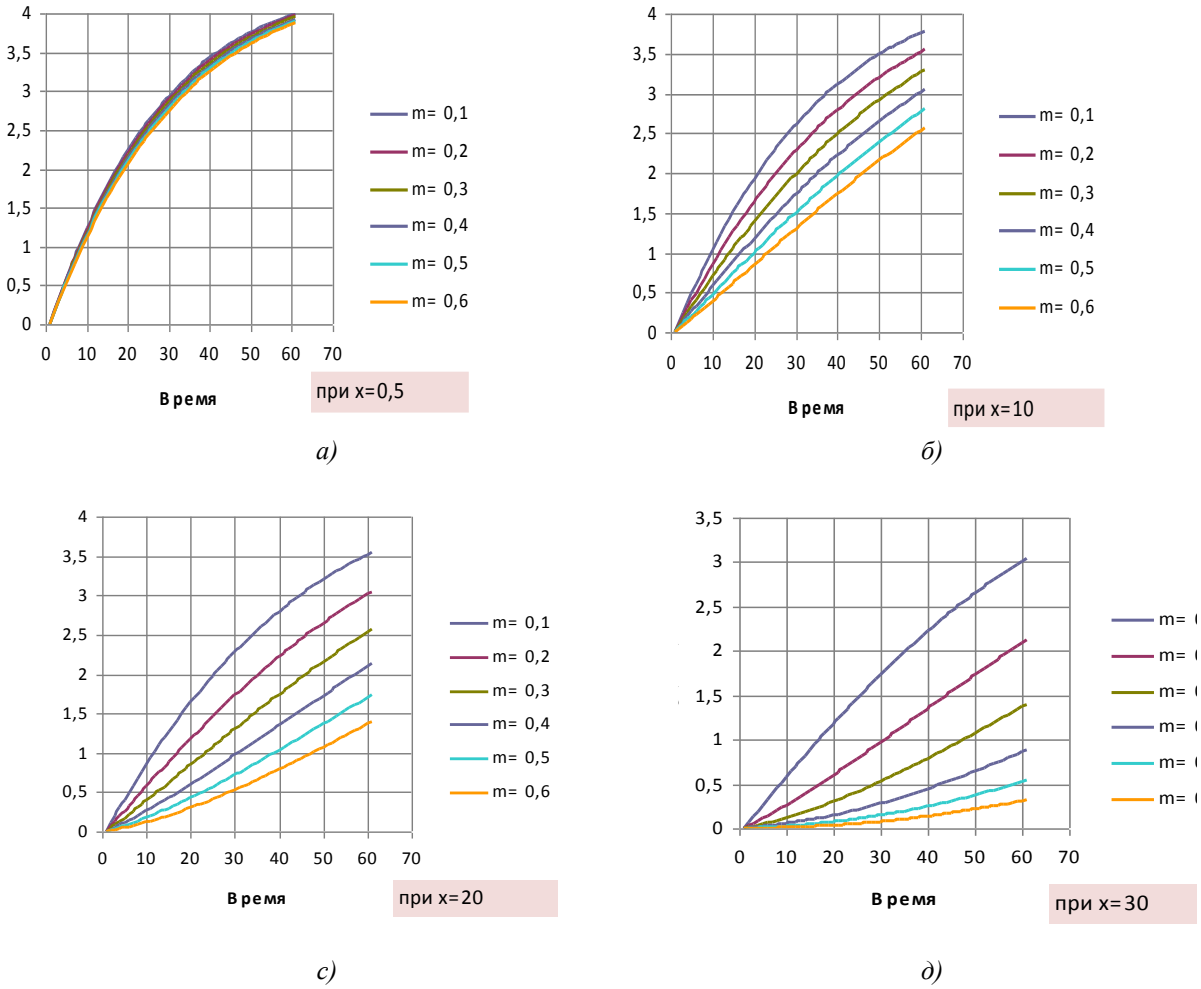
Расчеты проведены со следующими исходными данными:

$$\rho=2500\frac{кг}{м^3};\quad \mu=0,994\frac{кг}{м\cdot сек};\quad k_0=0,0026\,м^2;\quad \lambda=0,0027\frac{1}{сек};$$

$$H=1м;\qquad \gamma=0,008;\qquad \delta_0=10^{-6};\qquad \theta_0=0,48\cdot 10^{-5}.$$

Согласно проведенным численным расчетам на ЭВМ (рис. 2), одним из существенных параметров при фильтровании суспензий является пористость фильтра. От значения пористости фильтра зависят скорости прохода суспензии и осаждения гель-частиц. Численные расчеты показали, что заполнение пор фильтра гель-частицами происходит в верхних слоях фильтра, и под действием гидравлического поверхностного давления они перемещаются по глубине фильтровальной перегородки.

На рис. 2 приведены изменения концентрации движущейся смеси θ и концентрации осевших частиц в порах δ по толщине фильтра.



а) *б)* *с)* *д)*

Рисунок 2 - Скорость осаждения частиц на поровых средах в зависимости от их пористости: а) при x = 0.5; б) при x = 10; с) при x = 20; д) при x = 30

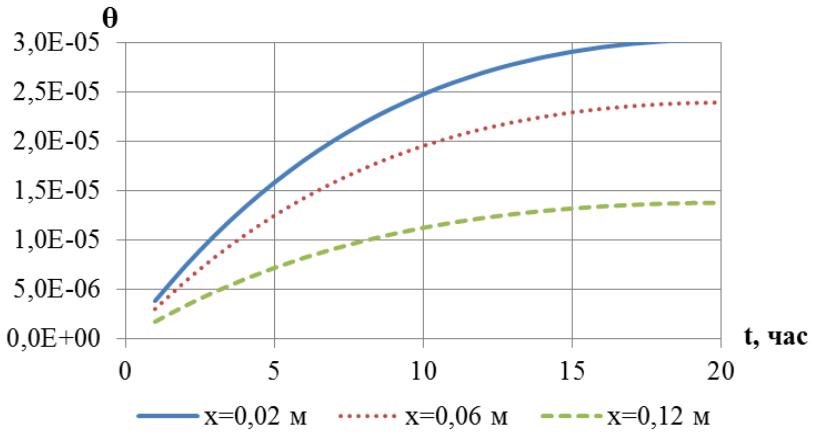


Рисунок 3 - Изменения концентрации в зависимости от времени и по толщине фильтра

Численные эксперименты показали, что на верхних слоях фильтра увеличение концентрации быстрее, чем на нижних слоях (рис. 3). Кроме того, концентрация в порах фильтра в начальном *t = 1-3 ч* времени по глубине пор фильтра линейно уменьшается, при *t>4 ч* уменьшение концентрации по глубине пор фильтра постепенно будет переходить на логарифмический закон (рис. 4).

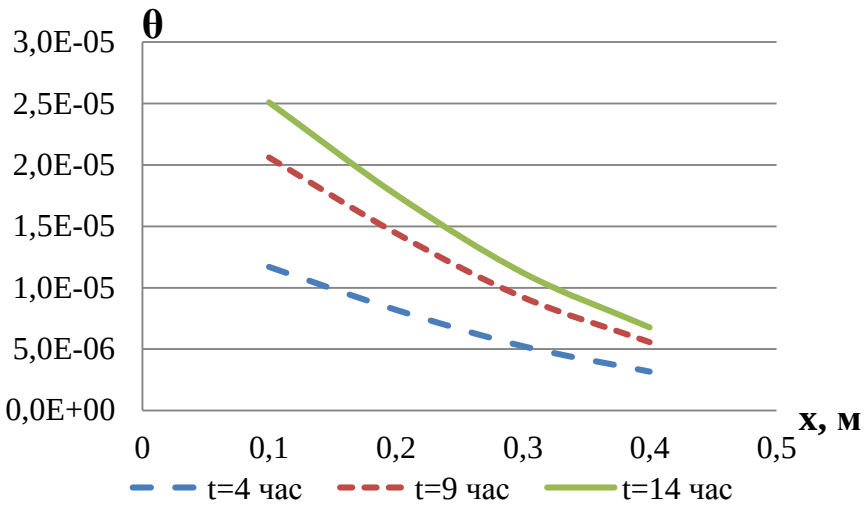
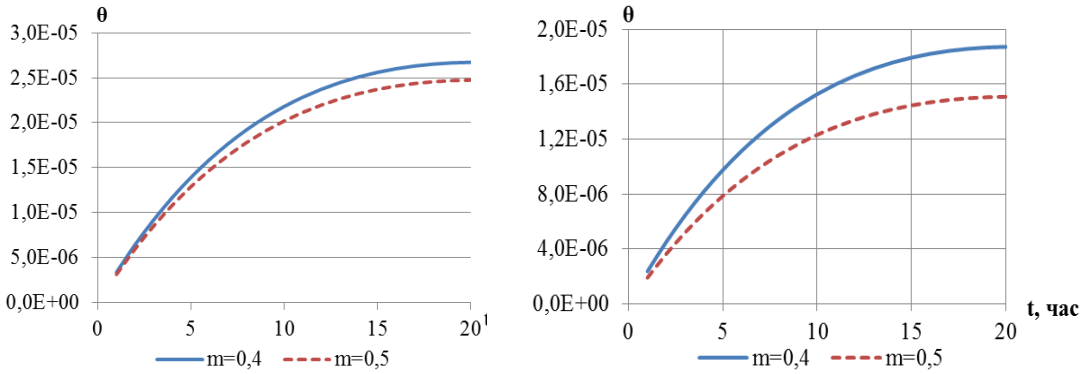


Рисунок 4 - Изменение концентрации при фиксированном значении времени в зависимости от толщины пор фильтра

Согласно основным параметрам технологического процесса фильтрования малоконцентрированных суспензий, существенную роль играет пористость фильтра. Численные результаты показывает, что при увеличении пористости фильтра изменение концентрации уменьшается, это особенно заметно на нижнем слое фильтра (рис. 5).



а) *б)*

Рисунок 5 - Изменение концентрации при различных значениях пористости фильтра в зависимости от времени: а) при x=10 см, б) при x=20 см

Для вычисления отклика входных параметров на процесс и режим работы фильтра проведен ряд численных экспериментов для различных значений H_0 и W_0. Так, для первой серии экспериментов, оставляя $W_0 = 0,0002\,м/сек$ без изменения, численные расчеты проведены при $H_0 = 0,2;\ 0,4;\ 0,5;\ 0,25;\ 0,35\,м$. Согласно проведенным численным расчетам на ЭВМ, с ростом толщины фильтровальной перегородки концентрация гель-частиц на поверхности фильтра будет расти экспоненциально. Особенно это заметно при $H_0 > 0,25м$.

Для второй серии экспериментов меняли значения $W_0 = 0,0002; 0,0001;\ 0,0004;\ 0,0005$.

Полученные результаты показывают, что чем толще фильтр, тем качественнее фильтрат, однако для очистки одного и того же объема требуется больше времени, при этом давление в колонке растет по мере увеличения H_0.

При увеличении скорости подачи суспензии в колонку агрегата удержание частиц в фильтровальной колонке уменьшается. Это объясняется тем, что если с одной стороны увеличение скорости приносит большое количество взвешенных частиц и способствует быстрому заполнению пор фильтра, с другой – создает дополнительную силу для срыва уже осевших частиц, и тем самым ухудшает качество отфильтрованной жидкости.

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SECTION 13. Geography. History. Oceanology. Meteorology.

FORMATION UZBEK SSR AND INFLUENCE UPON LIFE NATIONAL MINORITY (1924-1925 y.)

Abstract: *Question about creation national statehood fair asiatic folk is considered this question as very complex and required the all-round study, serious preparation to undertaking national-state fission in CENTRAL ASIA.*

Key words: *national fission, formation UZSSR, nation, national minority, Central Asia.*

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Introduction

National fission in CENTRAL ASIA and formation UZSSR - a result social and economic development of the country. In turn, this second revolution, which has fundamentally changed the national relation a nation, lived on territory of the Central Asia. The First revolution were on call the russian proletariat (the October 1917.). This was a first revolution, most solving revolution, without which impossible liberation nation and nationalities. The Second revolution is identified state-national fission. This was in root wrong if we valued fission Central Asia only, as narrow-practical reform of local internal importance, determination of the necessary borders on national fission, national-cultural construction and etc.

Materials and Methods

What wrote I.Vareykis "We consider that fission between nations and national problem to Central Asia on area the most complex and tangled in national attitude, we before all world, before all folk of the Orient, particularly prostrating from national oppression, spare once prove that our policy rests on the most great conquest of the October, get fat liberty, independence and equality toilling nation to former tsarist empire".[1, p.41] Important stage on way of the formation Uzbek SSR was a creation Turkestan ASSR, as well as Bukhara and Horezm Public Soviet Republics. Fission on national sign in that concrete condition was inadvisable, since it distracted nation, lived in Central Asia, from decision main questioning - a question about the authorities.

Starting-up work on fission in Central Asia were begin; start; commence party long before 1924 As far back as 1920 was lifted question about creation national government each of folk of the Central Asia and was put(deliver)ed problem "to form the card (ethnographic and other.) Turkestan with subdivision on Uzbek, Kyrgyzstan and Turkmenistan; detailed to realize the condition of the merging or division these 3 parts". [2, p.58-59] In 1924 Politburo CK RKP (b), CK RKP (b), central committees to communist parties Turkestan, Bukhara and Horezma repeatedly discussed on meeting question about national-state fission in Central Asia. During discussion of this question on places were brought forth different offers, from which some were shown obviously wrong. So, group Fergana workman at January 1924 has emerged with offer about separation Fergana area on rights by person of the autonomous unit. On joint meeting Sredazbyuro CK RKP (b) and executive agency CK KPT January 13 1924 were considered question, lifted Fergana's people. Sredazbyuro CK RKP (b) and executive agency CK KPT in its resolution have noted "fallaciousness of the offer ферганских workman. Fission in Central Asia must was be conducted, first of all, on national sign". [3, p.59] March 23-24 1924 meeting of the plenum CK KPT took place in Tashkent together secretary regional, large district and town committee to parties. The question was

discussed On plenum about national-territorial fission Turkestan. The Plenum has noted that stating the question about such fission well-timed. The offers were voiced about separation from composition Turkestan ASSR several autonomous national republics; about undertaking fission only Turkestan ASSR, not touching Bukhara and Horezm; about creation federations.

In Bukhara row of the party members offered that Uzbek republic has united Bukhara and uzbek parts Turkestan and Horezm. The Capital Uzbekistan appeared to do or Bukhara, or Samarkand. There were disputes and about that, what republic must belong to Tashkent and etc.

On meeting Sredazbyuro CK RKP (b) of the April 28 1924 at addressing the issues about fission was voiced opinion about that to form in CENTRAL ASIA several autonomous republics and unite them in federation. However, 11 May 1924 Sredazbyuro CK RKP (b) has taken resolution, in which was spoken:

"1. Acknowledge necessary to produce fission on national-territorial sign now existing Central Asian of the republics (BNSR, TASSR and HNSR), not forming federations from newly chosen national-territorial associations.

2. Organize: but) Uzbek and Turkmen republic on rights independent SSR with direct entering in USSR; b) Punishment-Kirghiz autonomous area, having left opened question about that, in composition what republics she enters; g) include the kirghiz, inhabitting Turk republic", in now existing Kirghiz republic. [4, p.61] Coming from accepted resolutions possible to draw a conclusion that Sredazbyuro CK KRP (b) greatly drew near its glance to interest, which were recognized "correct" CK RKP (b).

On the grounds of resolutions about national-state fission republics to Central Asia were created organizing commissions on count; calculate; list state formation for convocation convention Advice of the national soviet republics and autonomous areas.

Simultaneously 4-I Exceeding session CIK Advice Turkestan ASSR November 18 1924 has resolved: "1. Activity CIK Advice, SNK and Economic Advice to stop, having sent whole fullness authorities on corresponding to territory of the republic revolutionary committee newly formed republics and autonomous areas. 2. The Liquidation property and questions, having importance, form the liquidation committee, operating on the basis of person about him positions". Soon, the Revolutionary committee Uzbek SSR was formed. Several later at February 1925 Presidium VCIK has confirmed the resolution SNK RSFSR about abolition Turk komissii.

On the strength of that that former Bukhara and Horezm republics became socialist shortly before national fission, in these republic laws and other state acts differed from laws and acts RSFSR. Considering this circumstance, its resolution from November 27 1924 Revkom Uzbek SSR has founded the special commission on revising of the laws former Bukhara and Horezm republics and entering the united laws on the whole territory Uzbekistan.

In its appeal Revkom UZSSR was noted that "national policy soviet authorities is expressed in full equality all nation. So Revolutionary committee UZSSR declares that hereafter on territory UZSSR no place national antagonism. All national minority, falling into UZSSR, is provided all necessities for cultural and economic development, in the sense of management, court and enlightenments on native language". [5, p.3] Many aspects given appeals disagreed real reality that confirms the following facts. the December 5 1924 are daytime formation Uzbek SSR. "February 13 1925 work I Constituent convention advice Uzbekistan began in Bukhara. In functioning(working) the convention has took part 517 delegates with solving and 81 delegates with consultative voice. A representatives were On convention from all folk, inhabiting territory UZSSR, including from Tadzhik ASSR, be included in UZSSR- 64 delegates with solving voice and 2 delegates with consultative voice".

As a whole, 12 % has formed the delegate with solving voice and 2 % with delegate by consultative voice. These factors speak of that that representatives not all folk were attracted in the course of work I Constituent convention.

Conclusion

On territory of the Central Asia that is to say on territory TASSR Bukhara and Horezm, was expected build three republics and two autonomous areas: Uzbek, Turkmen and Kirghiz republic and autonomous areas: Karakalpakskiya and Tadzhik. The Territory of the Uzbek Republic formed beside 400 thous. square miles with population in 5.000.500-5.000.600 thous. The National composition was exceedingly motley: the most multiple group of the population were shown Uzbeks. They formed 60 % and were concentrated in the following terrain: in Fergana valley, in valley yard Chirchik, in valley of the rivers Zarafshan, Saizar, a part Kashkadarya, on lower current yard Pyandzha and on upper current Amudarii and on some her(its) influx, but in the same way upper current Amudarya and on some her(its) influx. The Suppressing majority uzbek lived in city Fergana, Tashkent, Chimkent, Turkestan, Dzhizak, Kattakurgan, Hive and Bukhara.[6, p.20] Following on the number of the groups presented the kirghizs and kazakhs (19%). On advantage were shown nomad, but in 20-e years HH age strong pulling to husbandry has destroyed amongst them purely nomadic facilities, which in general formed very small percent. They lived basically in steppe

Syrdariya and Dzheytun area, in song Kyzylkum, on Ustyurt, on lower reached Amudarya, in valley of the rivers Angren and Keles, in region Nurata.

The Punishment-kirghizs or buruts (wildly stone kirghizs) (9 %) lived on declivity west pull-SHanya, in Alaysk valley, in foothill Alaysk mountains, East Pamir and in south part Dzheytun area (Pishpek and Przhevalisk districts). The Small groups their met as in Syrdaria area, so and in Samarkand. Rather compact mass of the vein on west declivity Gissarsk mountains and on declivity ridge Petra Great in Bukhara (Karategin).[7, p.21] Turkmens (8 %) lived the utter mass in Turkmen area on valley of the rivers Atreka, Sumbara, Tedzhena and Murgaba, on north foothill Kopetdag, on average current Amudariya (Kerkinsk and Charzhusk district BSSR) and on south extremity Hivinsk oasis.

Karakalpaks (1 %) ed only in do Amudariya though met very small in number their groups in valley yard Chirchika and in Fergane. Kurama (1 %) - a mixture uzbek, kazak and tadzhik natoins, lived in valley yard Angren and are diffused were amongst the other nationalities in Samarkandskoy area, in Buhare and even in Turkmen area.[8, p.21] Kipchaki (0,9 %) ed only in Fergan area. The Small groups met in nearby district Dzhetysu area. Taranchi (0,9 %) presented the result of the melange Turks with iranian, themselves they ranked itself to Turks. In Turkistan they were resettled from Iliyskogo edges (the West China), lived in valley yard Or, Almaatin and Dzharkents district Dzhetysu area. The Iranian - a tadzhiks (8 %) lived in Samarkand area, in Bukhara and in west part Pamir. In Samarkand area lived in south and south-east mountain part and in city Samarkand, Pendzhikent, Uratyube, Hodzhent. In Bukhara they lived in Karategin, Kulyab and Balidzhu region, on upper current Amudariya. Besides, in the same way beside 8 % all tadzhik lived in Fergana (and small groups lived in mountain parts Syrdariya area.

The rest mass of the population constituted of russian (10 %), Armenians, jew, hindu, arab, dungan (whole 0,2 %) and etc. The Economic Uzbek Republic was considered the most powerful from all Central Asian republics. Here the most developping was marketability of the agriculture, the main market were disposed within republic.[10, p.47]

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SOFTWARE MICROSOFT EXCEL FOR STATISTICAL CALCULATIONS PEDAGOGICAL EXPERIMENT BASED ON THE CRITERIA χ2 (CHI-SQUARE)

Abstract: *The article deals the basics of processing and presentation of experimental data in Microsoft Excel through the use of the criterion χ2 (chi-square).*

Key words: *statistical hypothesis, null hypothesis, alternative hypothesis, criterion χ2 (Chi-square).*

Language: *Russian*

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ИСПОЛЬЗОВАНИЕ ПРОГРАММЫ MICROSOFT EXCEL ДЛЯ ПРОВЕДЕНИЯ СТАТИСТИЧЕСКИХ РАСЧЕТОВ ПЕДАГОГИЧЕСКОГО ЭКСПЕРИМЕНТА НА ОСНОВЕ КРИТЕРИЯ χ2 (ХИ-КВАДРАТ)

Аннотация: *В статье рассматриваются основы обработки и представления экспериментальных данных в программе Microsoft Excel на основе использования критерия χ2 (хи-квадрат).*

Ключевые слова: *статистическая гипотеза, нулевая гипотеза, альтернативная гипотеза, критерий χ2 (хи-квадрат).*

Introduction

Сегодня мы наблюдаем все более широкое внедрение информационных технологий во все сферы деятельности человека: бизнес, управление, развлечение, в том числе и образование – это дистанционное обучение, разработка электронных образовательных ресурсов, поиск информации в сети для учебного процесса, проведение телеконференций и др. Однако применению компьютерных технологий в педагогических исследованиях уделено недостаточно внимания, хотя они являются необходимым и важным инструментом.[1-4]

Для обработки количественных данных, полученных в ходе анкетирования, тестирования, ранжирования, регистрации, социометрии, интервью, беседы, наблюдений и педагогического эксперимента часто применяются математические методы исследования с использованием компьютера. Применение методов математической или статистической обработки информации педагогических исследований требует проведения большого числа простых арифметических операций над большим числом исходных данных, занимающих много времени и неизбежно содержат множество ошибок. Сократить трудоёмкость расчётов и уменьшить число ошибок помогает использование персональных компьютеров.[5-8]

Сложные статистические расчёты поводятся с помощью специальных программ для статистических расчётов, например программа STADIA, STATISTICA, StatGraphics и SPSS. Однако данные программы, во-первых, являются лицензионными и стоят достаточно дорого. Во-вторых, они достаточно сложны и требуют значительных временных затрат для своего освоения. Наряду с этим, существуют инструменты статистического анализа в электронных таблицах Microsoft Excel, входящих

в стандартный комплект Microsoft Office. Microsoft Excel позволяет заносить данные исследования в электронные таблицы, создавать формулы, сортировать, фильтровать, группировать данные, проводить быстрые вычисления на листе таблицы, используя «Мастер функций». С табличными данными также можно проводить статистические операции, если к Microsoft Excel подключён пакет анализа данных.

Табличный редактор Microsoft Excel с помощью встроенного мастера диаграмм также даёт возможность построить на основании результатов статистической обработки данных различные графики и гистограммы, которые можно впоследствии использовать на других этапах исследования.

Materials and Methods

Приведем пример реализации в программе Microsoft Excel обработки экспериментальных данных педагогического эксперимента с помощью метода хи-квадрат.

Предположим, что в ходе педагогического эксперимента проверялась гипотеза о влиянии разработанных лабораторных работ по курсу «Информатика и ИТ» на повышение уровня знаний и умений обучаемых. Эксперимент состоит в проведении занятий по курсу «Информатика и ИТ» на основе предложенной исследователем новой методики в экспериментальной группе, которое сравнивается с контрольной группой, обучаемой по традиционной методике. [10]

Таблица 1.

Количество студентов экспериментальной и контрольной групп

	2013-2014 учебный год	2014-2015 учебный год	Всего
Экспериментальная группа	54	57	111
Контрольная группа	51	53	104

При проведении эксперимента необходимо учитывать требование репрезентативности при подборе экспериментальных и контрольных групп. Поэтому перед проведением эксперимента необходимо провести диагностическое занятие, в ходе которого экспериментальной и контрольной группам будет предложено выполнение определенных заданий. Результаты контрольного среза оформляются в виде таблицы, а количество правильных ответов в процентах в виде полигона частот.

Предположим, что в ходе диагностирования вы дали 4 задания. Разместим результаты проверочной работы в виде следующей таблицы MS Excel :

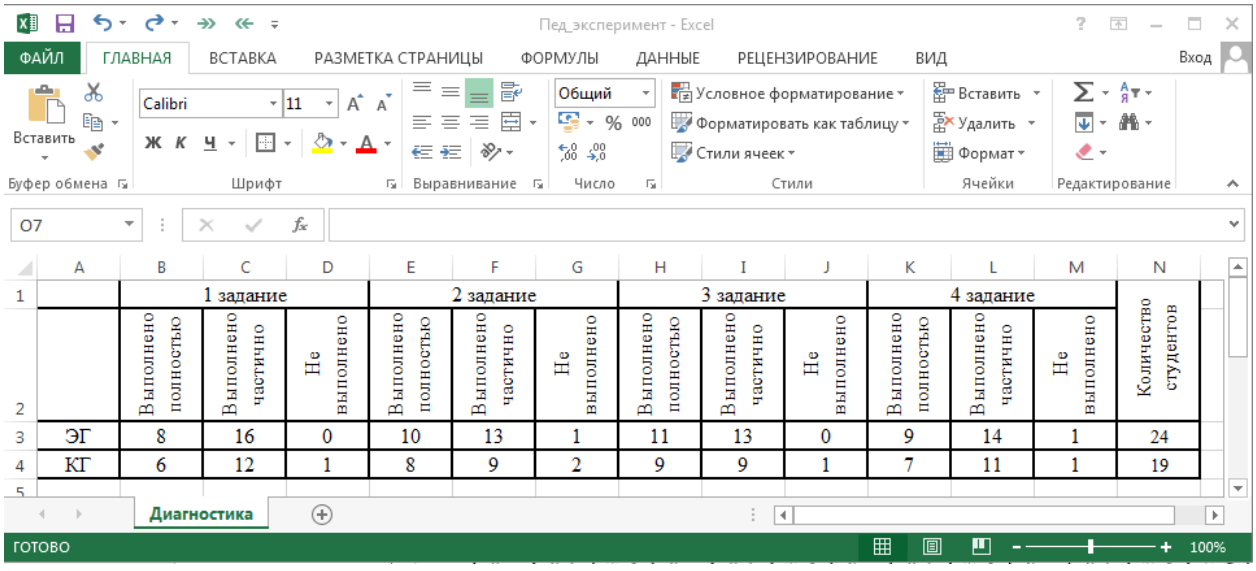
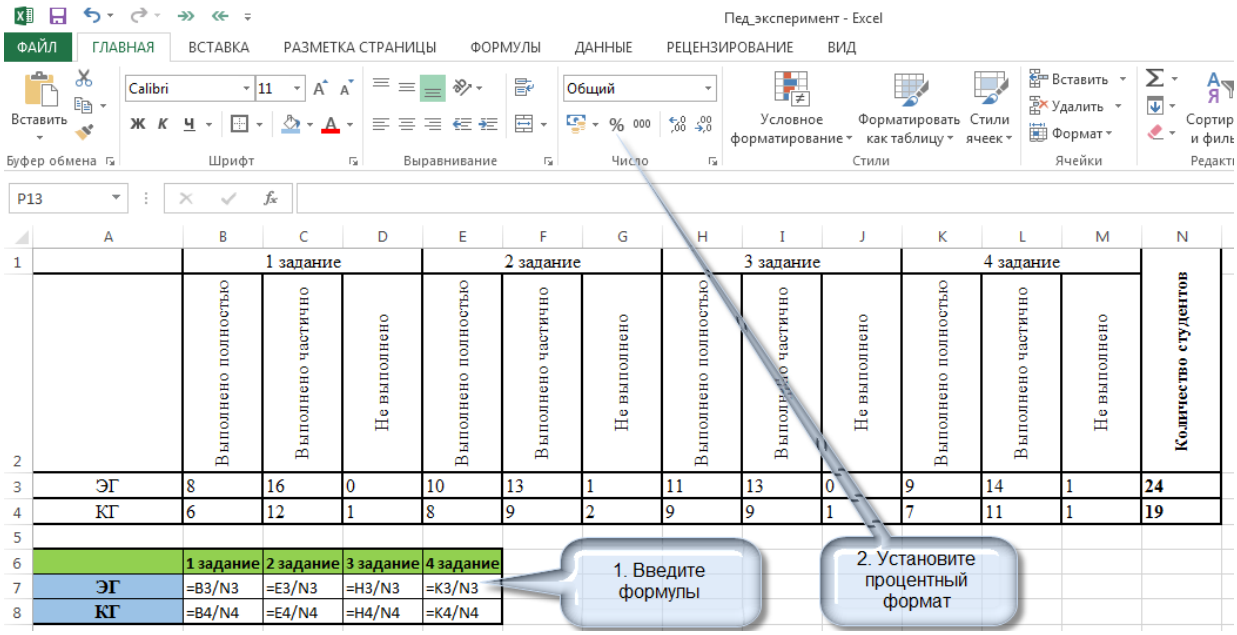


Рисунок 1 - Результаты диагностической контрольной работы.

Далее необходимо рассчитать в процентах количество выполненных правильно работ: создаем таблицу, в которой необходимо ввести формулы и установить процентный формат:



	1 задание			2 задание			3 задание			4 задание			
	Выполнено полностью	Выполнено частично	Не выполнено	Выполнено полностью	Выполнено частично	Не выполнено	Выполнено полностью	Выполнено частично	Не выполнено	Выполнено полностью	Выполнено частично	Не выполнено	Количество студентов
ЭГ	8	16	0	10	13	1	11	13	0	9	14	1	**24**
КГ	6	12	1	8	9	2	9	9	1	7	11	1	**19**

	1 задание	2 задание	3 задание	4 задание
ЭГ	=B3/N3	=E3/N3	=H3/N3	=K3/N3
КГ	=B4/N4	=E4/N4	=H4/N4	=K4/N4

Рисунок 2 - Вычисление результатов в процентном соотношении.

В итоге у вас получится следующая таблица:

	1 задание	2 задание	3 задание	4 задание
ЭГ	33%	42%	46%	38%
КГ	32%	42%	47%	37%

Для получения полигона частот необходимо выделить последнюю таблицу и выполнить следующие команды: на вкладке Вставка в группе Диаграмма выбрать Точечная с гладкими кривыми и маркерами:

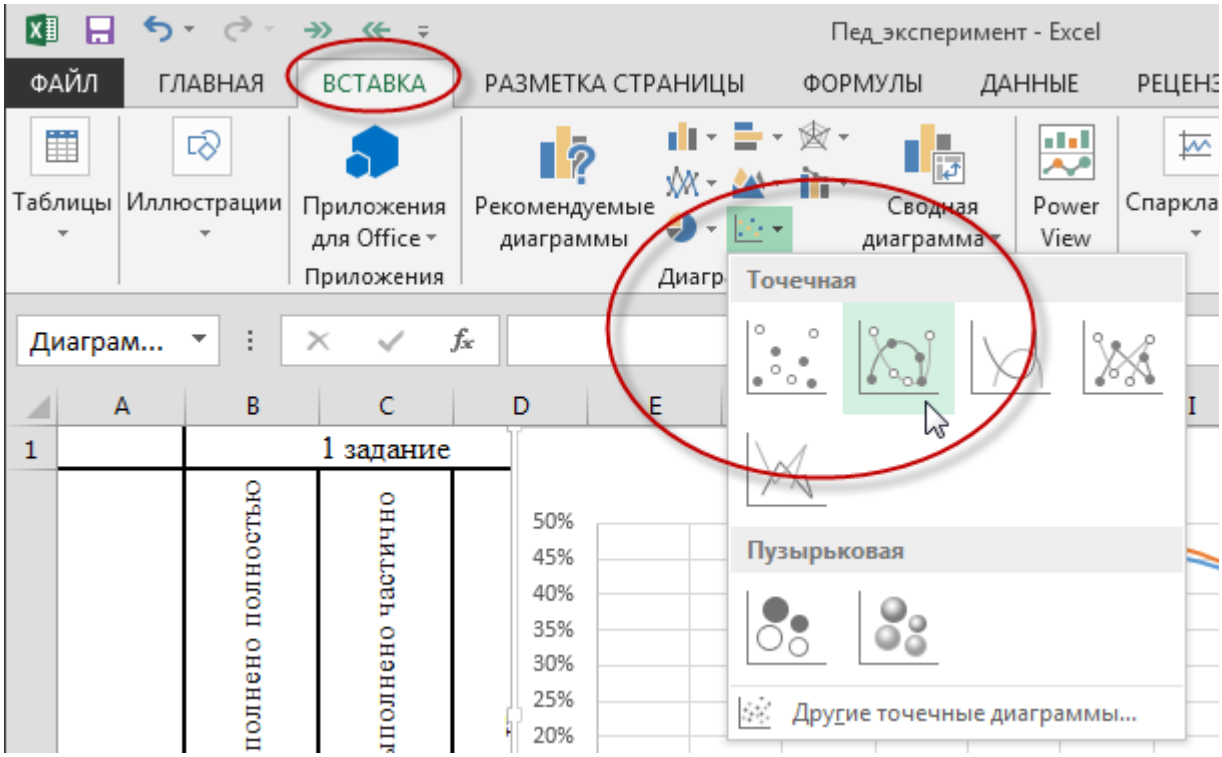


Рисунок 3 - Построение полигона частот в MS Excel.

В итоге вы получите полигоны частот, на основе которых можно предположить, что степень подготовленности в экспериментальной и контрольной группах одинакова.

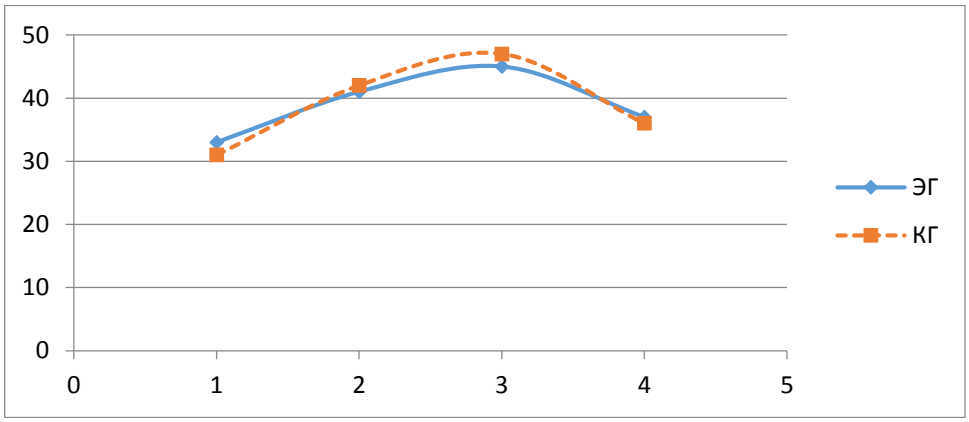


Рисунок 4 - Полигоны частот.

Измерения уровня знаний проводились после изучения каждого из разделов курса «Информатика и ИТ». В таблицах приведены результаты контролирующих лабораторных работ экспериментальных и контрольных групп.

В ходе педагогического эксперимента исследователь фиксирует результаты измерений уровня знаний в контрольной и экспериментальной группах до и после эксперимента и отображает их в виде таблиц и гистограмм. Для этого создаются два отдельных листа: До эксперимента и После эксперимента. На первом листе вводятся результаты эксперимента до проведения эксперимента в виде следующих таблиц:

	A	B	C	D	E	F
1	**Результаты измерений уровня знаний в контрольной и экспериментальной группах до эксперимента**					
2						
3		**Критерии оценивания знаний**				Охват студентов
4		Отлично	Хорошо	Удовл.	Неудовл.	
5	Экспериментальная группа	8	49	45	9	111
6	Контрольная группа	10	42	43	9	104
7						
8		**Результаты оценивания знаний (в %)**				Охват студентов
9		Отлично	Хорошо	Удовл.	Неудовл.	
10	Экспериментальная группа	=B5/$F$5	=C5/$F$5	=D5/$F$5	=E5/$F$5	n_1=111
11	Контрольная группа	=B6/$F$6	=C6/$F$6	=D6/$F$6	=E6/$F$6	n_2=104

Рисунок 5 - Подсчет результатов оценивания знаний в процентном соотношении в MS Excel.

Далее на основе процентных данных строится диаграмма:

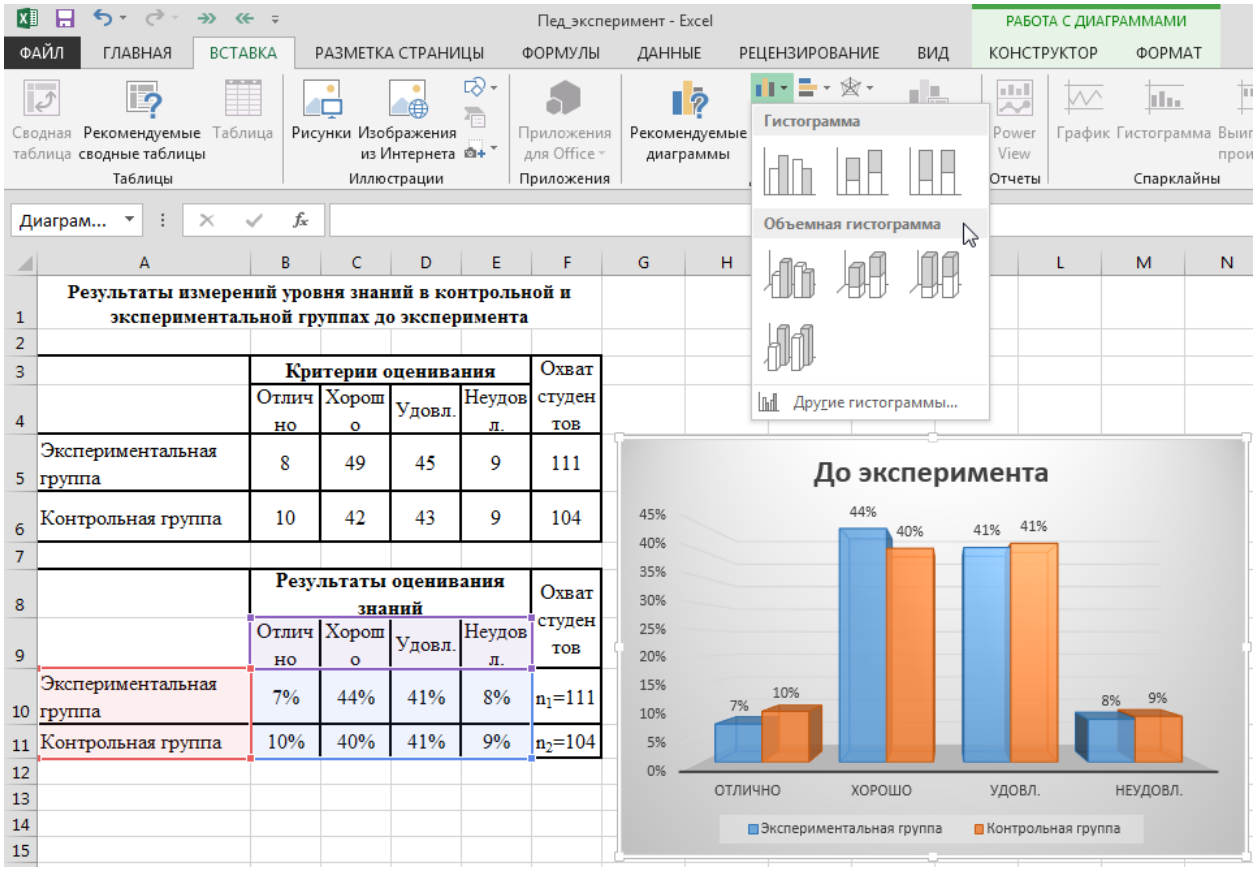


Рисунок 6 - Построение диаграммы по результатам измерений до начала эксперимента.

Аналогично вносятся результаты измерений уровня знаний в контрольной и экспериментальной группах после окончания эксперимента и на их основе строится гистограмма:

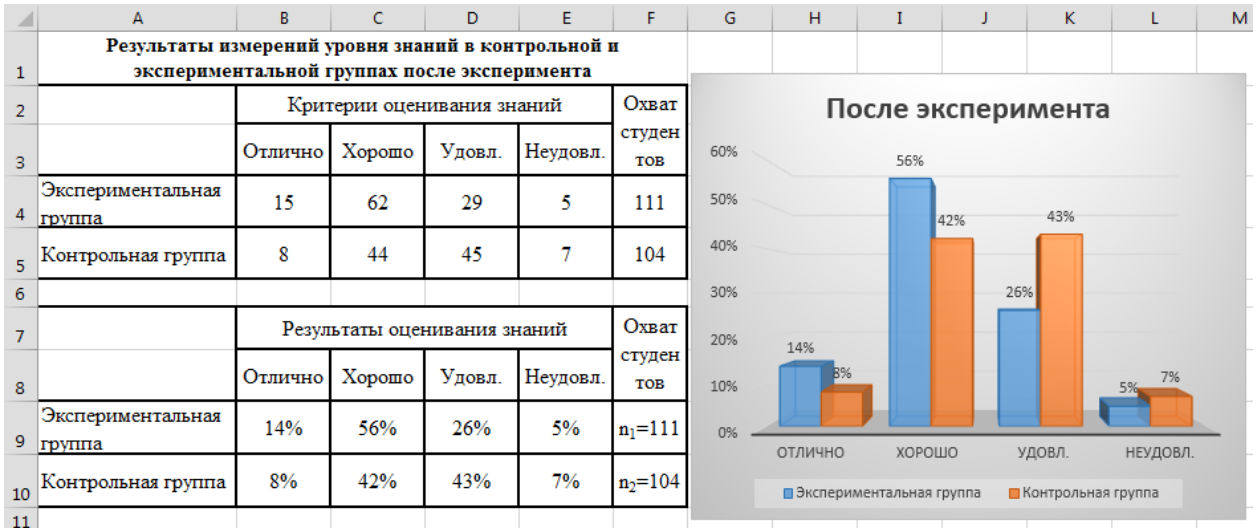


Рисунок 7 - Результаты измерений после эксперимента.

После проведения констатирующего, поискового и обучающего этапов педагогического эксперимента анализируются и обобщаются итоги экспериментально-теоретического исследования.

Обозначим: n_1 – количество студентов экспериментальной группы, n_2 – количество студентов контрольной группы. С – количество градаций. В нашем случае С=4 (неудовлетворительно, удовлетворительно, хорошо, отлично). O_{1i} – число членов экспериментальной группы, получивших i–ю категорию по состоянию изучаемого свойства; O_{2i} – число членов контрольной группы, получивших i–ю категорию по состоянию изучаемого свойства.

Результаты контролирующей лабораторной работы используем для проверки гипотезы о том, что обучаемые контрольной и экспериментальной групп до начала эксперимента и после окончания эксперимента имеют равную вероятность попасть в одну из четырех категорий: неудовлетворительно, удовлетворительно, хорошо, отлично, т.е. проверить выполнение всех следующих равенств: $p_{11} = p_{21}$, $p_{12} = p_{22}$, $p_{13} = p_{23}$, $p_{14} = p_{24}$. Таким образом, нулевая гипотеза будет иметь вид H_0: $p_{1i} = p_{2i}$. Альтернативная гипотеза будет иметь вид H_1: $p_{1i} \neq p_{2i}$ хотя бы для одной из С категорий.

Обработка полученных данных производим методом χ^2 – хи квадрат [9, С.101], вычисляемым по формуле:

$$T = \frac{1}{n_1 \cdot n_2} \sum_{i=1}^{C} \frac{(n_1 O_{2i} - n_2 O_{1i})^2}{O_{1i} + O_{2i}}, \qquad (1)$$

где Т - эмпирическое значение.

Измерим значение Т для данных, полученных до начала эксперимента:

	A	B	C	D	E	F
1	**Вычисление эмпирического значения Т**					
2		**До эксперимента**				Охват студентов
3		i=1	i=2	i=3	i=4	
4	O_{1i}	8	49	45	9	111
5	O_{2i}	10	42	43	9	104
6	$O_{1i}+O_{2i}$=	18	91	88	18	
7	n1*n2=					11544
8	$(n_1*O_{2i}-n_2*O_{1i})^2/(O1i+O2i)$=	4293,56	2069,85	98,28	220,5	
9	T=	**0,5788**				

Рисунок 8 - Вычисление эмпирического значения до эксперимента в MS Excel.

Та же таблица с отображением всех рабочих формул:

	A	B	C	D	E	F
1	**Вычисление эмпирического значения Т**					
2		**До эксперимента**				Охват студентов
3		i=1	i=2	i=3	i=4	
4	O_{1i}	8	49	45	9	111
5	O_{2i}	10	42	43	9	104
6	$O_{1i}+O_{2i}$=	=B4+B5	=C4+C5	=D4+D5	=E4+E5	
7	n1*n2=					=F4*F5
8	$(n_1*O_{2i}-n_2*O_{1i})^2/(O1i+O2i)$=	=СТЕПЕНЬ($F$4*B5-$F$5*B4;2)/B6	=СТЕПЕНЬ($F$4*C5-$F$5*C4;2)/C6	=СТЕПЕНЬ($F$4*D5-$F$5*D4;2)/D6	=СТЕПЕНЬ($F$4*E5-$F$5*E4;2)/E6	
9	T=	**=1/F7*(B8+C8+D8+E8)**				

Рисунок 9 - Формулы для вычисления эмпирического значения.

Таким образом, до эксперимента $T_{наблюд} \approx 0{,}5788$.

По таблице [1 , С. 130] для $\alpha = 0{,}05$ и числа степеней свободы $\nu = C - 1 = 3$ находим критическое значение статистики критерия

$T_{критич}$=7,815. Отсюда верно равенство $T_{наблюд}$< $T_{критич}$ (0,5788<7,815), т.е. в соответствии с правилом принятия решения для критерия χ^2 полученный результат не дает достаточных оснований для отклонения нулевой гипотезы. Иначе говоря, контрольная и экспериментальная группы до начала эксперимента имели равную вероятность попасть в одну из четырех категорий: неудовлетворительно, удовлетворительно, хорошо, отлично.

Проверим нулевую гипотезу для данных, полученных после окончания эксперимента:

Вычисление эмпирического значения T

	После эксперимента				Охват студентов
	i=1	i=2	i=3	i=4	
O_{1i}	15	62	29	5	111
O_{2i}	8	44	45	7	104
$O_{1i}+O_{2i}$=	23	106	74	12	
n1*n2=					11544
$(n_1*O_{2i}-n_2*O_{1i})^2/(O1i+O2i)$=	19634,09	23076,38	52924,88	5504,083333	
T=	**8,7612**				

Рисунок 10 - Вычисление эмпирического значения после эксперимента в MS Excel.

Поскольку $T_{наблюд}$> $T_{критич}$ (8,7612>7,815), то нулевая гипотеза отклоняется на уровне α=0,05 и принимается альтернативная гипотеза. Это значит, что при экспериментальном обучении различия в знаниях обучаемых экспериментальной группы по сравнению с контрольной являются статистически значимыми.

Осталось вычислить средний показатель успеваемости в контрольной и экспериментальной группах после окончания эксперимента:

$$\bar{x}_э = \frac{1}{n_1}\sum_{i=1}^{4} O_{1i}x_i = \frac{1}{111}(15*5+62*4+29*3+5*2) = 3{,}78;$$

$$\bar{x}_к = \frac{1}{n_2}\sum_{i=1}^{4} O_{2i}x_i = \frac{1}{104}(8*5+44*4+45*3+7*2) = 3{,}51.$$

	A	B	C	D	E	F
1	**Средние показатели успеваемости**					
2		**После эксперимента**				Охват студентов
3		5	4	3	2	
4	O_{1i}	15	62	29	5	111
5	O_{2i}	8	44	45	7	104
6	$O_{1i}*x_i$=	75	248	87	10	
7	$O_{2i}*x_i$=	40	176	135	14	
8	Ср.показатель успеваемости в экспериментальной группе ($x_э$)	**3,78**	Соотношение $x_э/x_к$	**1,08**		
9	Ср.показатель успеваемости в контрольной группе ($x_к$)	**3,51**				

Рисунок 11 - Вычисление средних показателей успеваемости в MS Excel.

Эта же таблица в формулах:

	A	B	C	D	E	F
1	**Средние показатели успеваемости**					
2		**После эксперимента**				Охват студентов
3		5	4	3	2	
4	O_{1i}	15	62	29	5	111
5	O_{2i}	8	44	45	7	104
6	$O_{1i}*x_i=$	=B4*$B$3	=C4*$C$3	=D4*$D$3	=E4*$E$3	
7	$O_{2i}*x_i=$	=B5*$B$3	=C5*$C$3	=D5*$D$3	=E5*$E$3	
8	Ср.показатель успеваемости в экспериментальной группе ($x_э$)	**=1/F4*СУММ(B6:E6)**	Соотношение $x_э/x_к$			
9	Ср.показатель успеваемости в контрольной группе ($x_к$)	**=1/F5*СУММ(B7:E7)**		**=B8/B9**		

Рисунок 12 - Формулы для вычисления средних показателей успеваемости.

Conclusion

Как видим, соотношение $\frac{\bar{x}_э}{\bar{x}_к}$ дает значение 1,08, что позволяет утверждать, что эффективность обучения в экспериментальной группе по сравнению с контрольной группой увеличилась на 8%. Следовательно, можно сделать вывод, что эффект изменений обусловлен именно применением экспериментальной методики обучения.

Таким образом, на этапе сбора и обработки данных педагогического исследования компьютер сегодня можно считать незаменимым. Он в значительной мере облегчает работу исследователя по регистрации, сортировке, хранению и переработке больших объёмов информации, полученных в ходе эксперимента, наблюдения, бесед, интервью, анкетирования и других методов исследовательской работы. Это позволяет исследователю сэкономить время, избежать ошибок при расчётах и сделать объективные и достоверные выводы из экспериментальной части работы.

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SECTION 17. World history. History of science and technology.

THE FIRST JEWS IN CENTRAL ASIA

Abstract: *This article deals with the historical retrospective analysis of the formation of the Jewish nation in Central Asia. The author notes that the origins of the first settlement of Jews in this area have deep roots in antiquity. Emphasis is also placed on the study of sources associated with the study of the spread of Jews in Central Asia and other regions of the East.*

Key words: *Central Asia, the Jewish people, community, culture, religion, history, source.*

Language: *English*

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Introduction

Central Asia, particularly Uzbekistan, has always been a peaceful abode for representatives of various nations and religions, who lived there under one sky. Tolerant aboriginals and convenient location attracted people of various descents to settle there.

Today representatives of 16 religions are living together in peace in Uzbekistan. Among them are the Jews. History of Jews in those lands roots to thousand years. Influenced by traditions of local aboriginals they developed significant ethno-confessional community.

The issue of first Jew settlements in Central Asia, development of local communities and their socio-cultural life has always been of big interest among historians. Most famous of them are M.Zand [1], S.Gitlin [2], Z.L.Amitin-Shapiro [3].

Despite the abovementioned fact, the question about exact time of first Jew settlements in Central Asia remains open. Dozens of books dedicated to the issue are overfilled with contradicting information and hypotheses.

Materials and Methods

Analyzing all information, we find out that most historians incline that first Jews came to Central Asia 2 000 – 2 500 years ago. The reason of such vagueness is lack of sources giving information about that time. According to most scientists the III-IVth centuries are least studied ages of Central Asian history. Only sources regarding that time belong to Arab writers and mostly consist of history of '*arab futuhat*' (conqueror) of V-VIII centuries. We can see little information about events of II-IV centuries in later sources [4, 749].

Historians agree that Central Asian Jew communities came there from Israel [5, 39]. Their settlement in these lands are closely related with their exile from Israel after collapse of Israel Kingdom in I century BC and destruction of Temple in Jerusalem. In 586 BC, far earlier from destruction of the Temple in Jerusalem and Babylonian captivity first Jewish diasporas spread to Egypt and Mesopotamia, in the beginning of new era to eastern coasts of Mediterranean Sea, Persia and other lands [5, 39]. Life of Jews in Persia was complex. We can see many data in historical documents regarding discrimination of Jews there. Researchers parallel this with aggravation of political and especially religious conditions [5, 41]. After enthronement of Yazdegerd II (438-459) and his son Piruz (460-484) oppressions toward Jewish people strengthened. During the rule of Piruz we can even see genocide of Jews. For instance, historical documents state that in 468 (in some sources 472) Piruz killed half of Jewish population in Isfahan accusing them of killing two Zoroastrian *mobads* (priests). Another example of Piruz's severe attitude towards Jews was killing the leader of Babylonian Jewish community Hun Marin [6, 65-67; 7].

Intransigent policy of Yazdegerd II and Piruz towards Jews resulted mass migration of Jewish people from Persian kingdom. Migrated people settled in Byzantium, Crimea, India and China, where Zoroastrianism did not have much influence.

Most researchers agree in the point that Jews migrated and settled in Central Asia during the rule of Ahamanide dynasty (after 559 BC) [5, 43]. As a proof they cite book of Esther from Old Testament, written in 78-77 BC, where it is said "…jews spread in all terriotories of Persia" [8, 6]. First reliable information on the settlement of jews in Central Asia show that jewish people emerged in Balkh, Merv and Khorezm in VIII-IX centuries AC. In contrary to this, according to M.Zand immigration of Jews to Central Asia falls on IVth century [9, 531-533]. To prove this he adduces Babylonian Talmud, where it is written that member Babylonian Amoraim [10] Samuel Bar Biseni (Pumbedata [11]) travelled to Merv. Visiting his brothers in faith abstains from drinking wine. Stressing on this fact, M.Zand says that Jews, after several centuries' life in Merv, have forgotten religious rituals of preparing the wine. That is why Samuel did not drink their wine [9, 531-533].

All researchers, including M.Sand, attribute the migration of Jews to Central Asia with their silk trade activity through The Great Silk road [9, 531-533]. But, it would be unreasonable to link this only with Silk Road. It is known that repressions of Jews by the romans during the rule of Marcus Aurelius, forced the Jewish people to migrate to other lands, including Central Asia [8, 8].

According to Jacob Neusner [12], in first centuries AC Jews played important role in socio-economic life of Parthian Empire. Most of them were engaged in Roman-Chinese trade [13, 910].

In the beginning of new era Dura-Europos became a big Jewish center [14]. Archeological excavations detected there remainings of ancient synagogue [8, 9]. Dura-Europos bordered with Khatra (arabic – al-khadhr) [15], Khamadan, Parthia, Marghiyana and Baktria. Famous scholar on history and traditions of Central Asian Jews E.Rtveladze, states that Jews migrated to Central Asia from these territories [8, 8].

Undoubtedly, it was Merv where lived most Jews in Central Asia. During archeological excavations in 1954-1956 were found ossuaries with rectangular Hebrew inscriptions on it dating VI-VII centuries. Later information about those findings were published by A.Kelvan [16, 91-92].

According to E.Rtveladze, jews later spread from Merv to Baktriya, Tokharistan, Soghd and Khorezm. The main reason of it, he states, was policy of Babylonian Jew academy, starting from 6th century, towards spreading Judaism across South Iran, Khorasan and other neighbouring territories [8, 9].

Some researchers stress that Jews lived in Balkh till 709, when the city was conquered by Arabs. According to such sources as "Fadail al-Balkh" and "Bakhr al-asrar" one of the gates of Balkh was called "Yahudiyyah" (Jewish), also in the outskirts of Balkh there was residential area called "Yehudanak" (Little home of Jews) [9, 531-533].

Historical sources evidence that in the Juzhjan province, north-west of Balkh, there was a town called Yahudiyyah. In the period between 988-1031 it was renamed as Maymanah. This fact corroborates that the town was founded by Jews or was reconstructed by them in early medievals. Furthermore, many graveyards of Jews with gravestones with written epitaphs in Persian and jewish language were found in Herat and other cities of Afghanistan [17, 335-342].

It is difficult to find written sources about life of Jews in Bukhara and Samarkand in early medieval. Famous historian Narshakhi in his "History of Bukhara" quoting from Nishapuris "Khazain al-ulum" (Treasury of sciences) states that territory of Bukhara was covered with riparian forests and only in 6th century after settlement of people from other territories of Central Asia it became a city. Researcher P.Is'hakov relies on these sources and in his "History of bukhara-jewish ethnos" supposes that since Bukhara city did not exist until the end of 6th century, then till that time there lived neither jews nor other nations [5, 43].

E.Rtveladze in his article "Jews in pre-Islamic Central Asia" quotes a narration from Nasafis "Kandiyyah". According to it before the Arab conqueror there was a well called Juyi Arziz, and this well was dug up by Jewish man [8, 9]. Another orientalist O.N.Logofet suggests that Jews came to Central Asia, particularly to Bukhara together with Arab conquerors [18].

Sources witness that settlement of Jews to Khorezm was much earlier from arab futuhat (conqueror). In the historical treatise called "Shakhrestani-I Iranshakhr" written in Pakhlavi language it is said that the founder of Kat, the capital of ancient Khorezm Narse (Narshakh) was a son of a Jew [9, 531]. According to the myth given in medieval historical sources, another city of ancient Khorezm – Khiva was founded by Sam, the son of prophet Noah. Of course those myths may seem far from reality. But there may be a part of the truth. Because, at-Tabari in his famous "Tarikh" (History) states that before the conqueror of Kat by arabs in 712 among advisers of the Kharezmshakh were people called akhbars [19]. It is known that the term akhbar was used by arabs for representatives of other religions, especially Jewish priests (rabbis).

Later, through Soghd, Chach and Ferghana Jews reached Eastern Turkistan. An ancient document of Jewish merchants dating 8th century AC, found in Dandan-Uylak [20] is written in

jewish-persian language using abramic scripts. This evidences that those merchants who made this document were from Central Asia or Iran [19].

The information given above show that there are many hypotheses about migration and settlement of Jews in the lands of Central Asia, and all of them pretend to be truth. It is known that some associate emergence of Jews in this region with biblical traditions. But we must not forget that there is difference between emergence, spreading and settlement. We cannot ignore that individual Jews existed in Soghd from ancient times. But this fact is not supported by historical sources. For instance, near the Onega Lake was found a graveyard dating the Neolithic Period. Among hundreds of skeletons was found skeleton of a human from Negroid race. But despite this well-known fact no one from researchers said that Negroids were widely spread in Northern Europe in Neolithic Period [21, 1].

Most researchers are certain in one point – Jews came to Central Asia through Afghanistan and other frontier to the region countries. It is considered as undoubted reality. Cultural monuments of the region show that direct relations between Jews and people of Iran and Central Asia have at least 4 thousand year history.

It is important to stress that migration and settlement of Jews in Central Asia did not occur at the same time, but it was slow process, which lasted for hudread years, stage by stage.

The delta of Amudarya River is considered as historical and geographic center of Central Asia. Nowadays, much part of this region goes to the territory of modern Uzbekistan. Other smaller parts of it go to modern Turkmenistan, Kazakhstan (Chimkent region), Kirgizstan (Osh, Jalalabad), Tajikistan (Khojand, Khisar and head of Amudarya) and Afghanistan (left Coast of Amudarya River). Central regions of Central Asia are much fertile. Nearly all ancient cities of sub region as Samarkand, Merv, Bukhara, Khiva and little independent states are situated in this region [22; 23].

Jews massively settled in Central Asia coming from Afghanistan, Iran and even Iraq. But, historians do not rule out the possibility of individual settlement of Jews in Bukhara in earlier periods. Relying on M.Sand we can conclude that migration and settlement of Jews to the region is closely associated with The Great Silk Road, which was founded in early 1st century AC [5, 45]. Besides, according to Chinese Jews their coreligionists came to China in first century during the rule of Han dynasty. At this period there was a road linking Manchjuriya, Eastern Turkestan with Central Asia. Historians believe that migration of Jews to China was via this road [24, 5-7].

Conclusion

As we see, study of history of Jews in Central Asia is based on written sources, archeological and ethnographic researches. Summarizing results of those studies and researches, it will be appropriate to date the emergence of first Jews in Central Asia as 1,5-2 thousand years BC.

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SECTION 30. Philosophy.

THE SUBJECT-OBJECT ACTIVITY IN THE PROCESS OF SCIENTIFIC PREDICTION IN THE DEVELOPMENT OF THEORETICAL AND EMPIRICAL KNOWLEDGE

Abstract: *This article discusses some of the features of the subject-object activity in the cognitive process as a whole and in the process of scientific prediction, in particular. The article focuses on the consideration of some of the concepts related to research in the field of scientific prediction relating to the influence of this phenomenon on the development of empirical and theoretical knowledge.*

Key words: *subject of knowledge, object of knowledge, scientific and knowledge concepts, scientific prediction, verifiability, falsificationism, critical rationalism, empirical knowledge, theoretical knowledge.*

Language: *Russian*

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СУБЪЕКТ-ОБЪЕКТНАЯ ДЕЯТЕЛЬНОСТЬ В ПРОЦЕССЕ НАУЧНОГО ПРЕДВИДЕНИЯ В РАМКАХ РАЗВИТИЯ ТЕОРЕТИЧЕСКИХ И ЭМПИРИЧЕСКИХ ЗНАНИЙ

Аннотация: *В данной статье рассматриваются некоторые особенности субъект-объектной деятельности в познавательном процессе в целом и в процессе научного предвидения, в частности. В статье основное внимание уделяется рассмотрению некоторых концепций, связанных с исследованиями в области научного предвидения, относящихся к влиянию этого феномена на развитие эмпирических и теоретических знаний.*

Ключевые слова: *субъект познания, объект познания, научно-познавательные концепции, научное предвидение, верифицируемость, фальсификационизм, критический рационализм, эмпирическое знание, теоертическое знание.*

Introduction

Научное предвидение в настоящее время играет важную роль в развитии научного знания. И это закономерно. Ведь эффективность умелого использования и верного расчёта предвидения трудно переоценить. Научное предвидение успешно реализуется в развитии не только теоретических, но и практических знаний. Познание в целом сегодня немыслимо без возможностей научного предвидения.

Соотношение субъекта и объекта научного предвидения особо значимо для раскрытия места предвидения в развитии научного знания на всех его уровнях.

В самом общем виде объект предвидения представляет то, на что нацелен процесс предвидения. как полагает ряд авторов - «научное предвидение как форма теоретического освоения мира и вид духовного производства представляет собой субъективное отражение объективного мира и закономерностей его развития»[3-5].

Поскольку вся природа представляет собой совокупность вещей, взаимодействующих друг с другом и находящихся благодаря этому в движении, изменении и развитии, то свойство предметов и явлений материального мира проявляются в их взаимодействии друг с другом, следовательно и отражение, формой которого

является предвидение есть, лишь одна из разновидностей этого всеобщего взаимодействия.

Отражение как результат взаимодействия представляет собой совокупность изменений, адекватных внешнему воздействию, например, след на песке соответствует ступне ног; зеркальное отражение совпадает с отображаемым предметом. Имеется определённое сходство процесса отражения с причинно-следственными отношениями объектов. Как известно, причинность – это генетическая связь явлений, когда одно явление, называемое причиной, при наличии определённых условий неизбежно попрождает, вызывает к жизни другое явление, называемое следствием.

Materials and Methods

Как отмечала учёный из Узбекистана К.И.Иванова к существенным признакам причинной связи можно отнести следующие: её необходимый и объективный характер; пространственная непрерывность (всякое следствие порождает новое следствие) и временная непрерывность (нет беспричинных явлений) причинно-следственных цепей [6].

Пространственная и временная непрерывность причинно-следственных отношений, - по мнению исследователя Б.О.Тураева, - приводит к тому, что в процессе действия причины совершается перенос свойств одного объекта (причины) на другой (следствие) [7]. Так происходит передача материи и движения от причины к следствию, перенос структуры объекта, т.е. воспроизведение в процессе причинного отношения структуры причины в структуре следствия. Для всех форм отражения в той или иной степени характерно такого рода структурное соответствие объектов, устанавливающееся в процессе причинно-следственной связи. Одним из простых видов структурного соответствия является отношение наглядного копирования. Таково, например, отношение фотографии к объекту отражения. При фотографировании внешняя структура предмета, отражая лучи света, передаётся структуре светового потока, а эта последняя запечатлевается на поверхности фотобумаги. Конечно, структурное соответствие часто носит более абстрактный и не столь явный характер. Например, пространственная структура в виде цифровых носителей при её проигрывании воспроизводится в звуках, т.е. в определённой временной последовательности колебаний воздуха.

Опирающийся на причинно-следственную связь перенос структуры является важнейшим условием формирования субъективных образов в сознании человека, в частности чувственных восприятий. Имеется, например, определённая аналогия между фотографическим изображением и зрительным образом, возникающим в сознании субъекта. Так, световой поток, отразившись от предмета, в неоднородности своего распределения воспроизводит структуру предмета. Попадая на сетчатку глаза, этот неоднородный поток света вызывает в ней определённые изменения, которые соответствуют характеру взаимодействия. Информация о внешних явлениях передаётся в мозг, в результате деятельности которого и возникает зрительное изображение предмета.

Как отмечал В.А.Лекторский, - единство субъекта и объекта, мышления и того, о чём мыслится в теории познания получает научное объяснение благодаря правильно понятой практике, обращение к которой привело к открытию реальной связи познания с объективным миром [8].

Практика направляет научное познание к получению новых знаний о настоящем и будущем, стимулируя их к постоянному поиску.

Практика таким образом выступает как один из факторов, детерминирующих идеальную деятельность, которым обусловлен активный, творческий характер познания, его целенаправленность и предметность. Познание во всех его формах, начиная с чувственного восприятия, формируется в процессе активной деятельности человека с материальными и духовными объектами.

Наиболее существенный признак активности знания состоит в том, что оно отображает объект в связи и в соответствии с задачами, потребностями и целями познающего субъекта. Иначе и быть не может, так как само знание возникло, сформировалось и развивалось на основе человеческой деятельности, требования которой и находят своё выражение в задачах, потребностях и целях субъекта.

Творческое воображение, способность предвидения (опережающего отражения), ценности и нормы, использование абстракций и идеализаций, создание целого мира искусственных предметов-посредников и т.п. – вот те компоненты, которые выражают активный характер человеческого познания, вырастающего из практической деятельности человека [9].

В частности, в восприятии содержатся элементы творческого воображения, вносящие в актуальный образ элементы прошлого и будущего. Вместе с тем воображение может выступать независимо от восприятия, в формах более свободных, где преобладает продуктивный момент.

В познании воображение выполняет огромную эвристическую роль, содействуя выдвижению новых смелых гипотез,

формированию идеализированных объектов научных теорий, позволяя наглядно представить следствия принимаемых допущений и т.п.

Активность субъекта в процессе познания оказывается необходимым условием для раскрытия сущности исследуемого объекта для выявления его внутренних свойств и связей.

Проникновение человеческого познания в сущность исследуемого объекта, воспроизведение в идеальной форме присущих ему необходимых свойств и связей, законов его функционирования и развития предполагает изменение не только самого объекта, но и возникающих в процессе его отражения идеальных образов [10], создание новых идеальных конструкций, не имеющих непосредственных аналогов объективной действительности, конструкций, которые будучи субъективными формами познавательной деятельности, лишь опосредовано отражают её. Однако всегда следует помнить о том, что все – даже наиболее абстрактные конструкции человеческого ума – в конечном итоге есть не что иное как отражение действительности.

Активный практический характер человеческого познания наиболее выпукло проявляется в том, что в целях познания люди создают особые объекты – приборы, инструменты, экспериментальные установки и т.п., которые, с одной стороны, воплощают в себе знания человека о сторонах и свойствах объективного мира, и, с другой стороны, служат для более глубокого отображения сущности вещей и явлений. Хотя в ходе познания порой может иметь место и воздействие на естественный объект – это происходит, например, в процессе экспериментирования, - но это воздействие связано не с изменением познавательных характеристик объекта, а лишь с созданием условий их лучшего обнаружения.

Осуществление акта познания как специфически человеческого отражения, воспроизведение существенных характеристик объекта предполагает не только активную деятельность субъекта с предметом, но и создание им – не как природным индивидом, а как общественным человеком, т.е. в кооперации с другими людьми – определённой системы «искусственных» предметов, опосредующих процесс отражения и несущих в себе познавательные нормы, эталоны, выступая в функции средств познания эти предметы-посредники обладают специфической особенностью. С одной стороны, их назначение состоит в том, чтобы давать субъекту возможность познавательного отражения характеристик тех объектов, которые существуют независимо от них. С другой стороны, сами посредники являются своеобразными объектами, которые обладают собственными особенностями, имеют внутренние связи, предполагают определённые способы оперирования с ними и существуют во внешней, опредмеченной форме. Но это значит, что осуществление познавательного акта предполагает со стороны субъекта не только умение соотносить предметы-посредники с познаваемыми объектами. Нужно также владеть способами оперирования той специфической реальностью, которой являются сами социально-функционирующие искусственные предметы.

В современной концепции научного предвидения важное место занимает решение вопроса о критериях достоверности научной теории вообще, научного предвидения, в частности. В существующей литературе встречаются различные подходы по данному вопросу. Принято считать, что первым критерием, по которому можно судить об истинности научных предположений, является известное ещё Д.Юму и И.канту требование соотнесения этих предположений с опытом. Если в чувственном опыте невозможно указать какие-либо объекты, которое это понятие подтверждает, то оно лишено значения, оно является неверной, пустым звуком. В западно-европейской философии XX века, в частности у позитивистов Венского кружка, это требование получило название принципа верифицируемости: научные понятия, предположения, теории имеют значение, если они эмпирически проверямы.

В литературе по методологическим проблемам науки встречаются и другие мнения. Так, Карл Поппер выступил с идеей критического рационализма. Критицизм Поппер считает основным методом науки и наиболее рациональной стратегией поведения учёных. В работе «логика и рост научного знания» он пишет: «Я обнаружил, что те из моих друзей, которые были поклонниками Маркса, Фрейда и Адлера, находились под впечатлением их явной объяснительной силы. Казалось, эти теории способны объяснить практически всё, что происходит в той области, которую они описывали. Изучение любой из них как будто бы приводило к полному духовному перерождению или к откровению, раскрывающему наши глаза на новые истины, скрытые от непосвящённых. Раз наши глаза однажды были раскрыты, вы будете видеть подтверждающие примеры всюду: мир полон верификациями теории. Всё, что происходит, подтверждает её. Поэтому истинность теории кажется очевидной, и сомневающиеся в ней выглядят людьми, отказывающимися признать очевидную истину, либо потому, что она несовместима с их классовыми интересами, либо в силу присущей

им подавленности, не понятой до сих пор и нуждающейся в лечении» [11].

Размышляя над этой ситуацией, Поппер пришёл к выводу, что нетрудно получить верификации, эмпирические подтверждения почти любой умело скроенной теории. Но подлинно научные теории должны выдерживать более серьёзную проверку. Они должны допускать рискованные предсказания, т.е. из них должны выводиться такие факты и наблюдаемые следствия, которые, если они не наблюдаются в действительности, могли бы опровергнуть теорию. Не верифицируемость, которую выдвигали члены Венского кружка, служит, по мнению Поппера, критерием научности. Критерием демаркации научных теорий, предсказаний на верные и неверные является фальсифицируемость – принципиальная опровержимость любого утверждения, относимого к науке.

По мнению Поппера, настоящая наука не должна бояться опровержений: рациональная критика и постоянная коррекция фактами является сутью научного познания. Поппер предложил достаточно динамичную концепцию научного знания как непрерывного потока предположений (гипотез) и их опровержений. Развитие науки он уподобил дарвиновской схеме биологической эволюции. Постоянно выдвигаемые гипотезы и теории должны проходить строгую селекцию в процессе рациональной критики и попыток опровержения, что соответствует механизму естественного отбора в биологическом мире. Выживать должны только «сильнейшие теории», но и они не могут рассматриваться как абсолютные истины. Всё человеческое знание имеет предположительный, относительный характер, в любом его фрагменте можно усомниться, и любые положения должны быть открыты для критики.

Conclusion

Любые научные положения, в том числе и предполагаемые могут быть связаны с практикой через свой эмпирический или теоретический базис. Поэтому о степени правильности знаний можно судить уже по их отношению к тому или иному базису.

Различаются эмпирическая и теоретическая достоверность, соответствующая двум уровням научного познания, эмпирическому (чувственному) и теоретическому (абстрактному). Если эмпирическая достоверность в основном определяется данными чувственного опыта, то теоретическая достоверность – рациональными элементами и тождественна очевидности, которая, однако не просто умозрительна, а обусловлена философскими истинами, входящими в теоретический базис. Эти истины, как известно, проверяются практикой.

Проблема достоверности научного предвидения всё ещё остаётся дискуссионной, требующей дополнительного научного анализа.

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SECTION 11. Biology. Ecology. Veterinary

ANNUAL EFFECTIVE DOSES TO PUBLIC FROM RADON IN GOMEL REGION

Abstract: *The article presents a comparison of levels radon volume activity with values of maximum permissible concentration, and determination of annual effective doses from radon and its decay daughter products. In all areas of Gomel region shows small values of equivalent equilibrium volume activity of radon (an average of 21 Bq/m3) compared with standard maximum allowable concentration (100 Bq/m3 in projected and 200 Bq/m3 in existing buildings). In 2,9% of dwellings equivalent equilibrium volume activity of radon more than 100 Bq/m3. On average in the Gomel region recorded values effective doses of radon and its decay daughter products about 0,8 mSv for the ICRP models and 1,4 mSv for models UNSCEAR.*

Key words: *: radon, volume activity, equivalent equilibrium volume activity, the effective dose, Gomel region.*

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ГОДОВЫЕ ЭФФЕКТИВНЫЕ ДОЗЫ ОБЛУЧЕНИЯ НАСЕЛЕНИЯ ОТ РАДОНА НА ТЕРРИТОРИИ ГОМЕЛЬСКОЙ ОБЛАСТИ

Аннотация: *В статье представлено сопоставление уровней объемной активности радона со значениями предельно-допустимых концентраций, и определение годовых эффективных доз облучения от радона и его дочерних продуктов распада. По всем районам Гомельской области показаны небольшие значения эквивалентной равновесной объемной активности радона (в среднем 21 Бк/м3) по сравнению с нормативом предельно-допустимой концентрации (100 Бк/м3 в проектируемых и 200 Бк/м3 в существующих зданиях). В 2,9% жилых помещений эквивалентная равновесная объемная активность радона превышает 100 Бк/м3. В среднем на территории Гомельской области регистрируются значения эффективных доз облучения радоном и его дочерних продуктов распада около 0,8 мЗв по модели МКРЗ и 1,4 мЗв по модели НКДАР ООН.*

Ключевые слова: *радон, объемная активность, эквивалентная равновесная объемная активность, эффективная доза, Гомельская область.*

Введение

Радон – благородный радиоактивный газ, тяжелее воздуха, не имеющий вкуса, цвета и запаха, образующийся в радиоактивной цепочке в процессе распада естественных радионуклидов семейств урана и тория. Согласно оценке Научного комитета по действию атомной радиации (НКДАР) ООН, радон и его ДПР определяют примерно 2/3 годовой индивидуальной эффективной дозы облучения, получаемой населением от земных источников радиации, и примерно половину дозы от всех источников радиации [1]. В ряде докладов Национального исследовательского совета США BEIR IV [2] и BEIR VI [3] подробно рассматривалось влияние радона и его ДПР на организм человека. Наиболее значимым и распространенным дозовым фактором является воздействие радона, содержащегося в воздухе помещений жилых и общественных зданий, и на рабочих местах. Радон, являясь компонентом воздуха, попадает в легкие человека при дыхании. По данным Всемирной организации здравоохранения, воздействие радона повышает риск возникновения и развития рака легкого [4], вследствие воздействия высокоэнергетического

α-излучения при распаде радона и его ДПР на высокочувствительные клетки дыхательной системы. В многочисленных эпидемиологических исследованиях показано, что ионизирующее излучение испускаемое радоном и его ДПР является канцерогеном. Увеличение риска рака легкого отмечается как после контакта с радоном и его ДПР [3], так и в отношении воздействия характерного для радона излучения с низкой линейной потерей энергии [1]. По оценкам экспертов Международной комиссии по радиационной защите (МКРЗ) облучение населения за счет радона обуславливает до 15 % общего количества заболеваний раком легкого [5]. Указанные исследования различных мировых организации, их масштаб и финансовые затраты напрямую указывают на важность и актуальность «радоновой» проблемы.

Воздействие на человека дочерних продуктов распада радона всегда представляло определенные сложности для проведения дозиметрических оценок.

1) Оно относится к внутреннему облучению и достаточно сложно поддается индивидуальному радиационному мониторингу, относительно легко проводимому в случае внешнего радиационного облучения.

2) Вследствие малого периода полураспада ДПР радона мониторинг облучения радоном не может быть выполнен стандартными методами, применяемыми при мониторинге внутреннего облучения.

3) при ингаляции ДПР радона происходит облучение исключительно тканей респираторного тракта, в то время как на остальные органы и ткани человека радиационное воздействие пренебрежимо мало.

4) все основное облучение осуществляется короткопробежными, сильноионизирующими а-частицами.

Перечисленные факторы привели к тому, что все дозиметрические оценки облучения человека за счет ингаляционного поступления ДПР радона производятся исключительно косвенными методами. Для оценки величины перехода от экспозиции по ДПР радона к эффективной дозе ранее применялись расчетные методы с использованием различных моделей поведения радионуклидов в респираторном тракте.

МКРЗ разработала более подробную модель легкого, чтобы рассчитать дозу облучения от присутствующих в воздухе радионуклидов. Тем не менее, это все еще упрощенное представление о действительной анатомии дыхательного тракта и о физиологических процессах. Сложности, в числе прочих, представляют измерение свойств аэрозолей и определение их характеристик, включая размер и неприсоединенную фракцию. Модель используется для оценки влияния биологических и аэрозольных параметров, а также для характеристик неопределенностей при оценках дозы на легкие человека относительно глубины клеток-мишеней.

Таким образом, остается ряд вопросов к оценкам коэффициентов дозового перехода, сделанным на основе дозиметрических моделей респираторного тракта. Такие оценки зависят от моделей и неизбежно подвержены всем неопределенностям, связанным с входными данными, а также с допущениями, встроенными в определенную расчетную модель. Кроме того, появляются уточненные данные по дозиметрической модели респираторного тракта.

Целью настоящей работы являлась сопоставление уровней объемной активности радона со значениями предельно-допустимых концентраций, и определение годовых эффективных доз облучения от радона и его дочерних продуктов распада.

Материалы и методика исследований.

Для сопоставления уровней объемной активности радона со значениями предельно-допустимых концентраций, и определение годовых эффективных доз облучения от радона и его дочерних продуктов распада были использованы результаты исследований, проведенных ОИЭиЯИ (г. Минск, Сосны) в течение 2005-2014 гг. на территории Гомельской области [6; 7]. Исследования были выполнены по методике, позволяющей проводить мониторинг радона: «Методики определения объемной активности радона в воздухе жилых и производственных помещений с использованием интегральных радонометров на основе твердотельных трековых детекторов альфа-частиц» (МВИ. МН. 1808-2002) [8]. В среднем, равномерность размещения дозиметров соответствует начальным европейским требованиям: ячейка 10 на 10 км. Было проведено 960 измерений в 48 населенных пунктах.

Результаты исследований и их обсуждение.

Сопоставления уровней объемной активности радона со значениями предельно-допустимых концентраций. Для Республики Беларуси в качестве показателя для нормирования радона и его ДПР принята эквивалентная равновесная объемная активность (ЭРОА) радона, предельно-допустимое значение которой установлено 100 Бк/м^3 в проектируемых и 200 Бк/м^3 в существующих зданиях [9; 10]. Однако Международная комиссия по радиационной защите рекомендует использовать единый уровень ПДК в пределах 150 Бк/м^3 [11].

При этом ЭРОА радона необходимо измерить или рассчитать, используя коэффициент равновесия F (отношение ЭРОА к ОА радона). В Публикации 65 МКРЗ [12] приводится среднемировое значение коэффициента равновесия F = 0,4. При этом для Республики Беларусь и Европейской части России для перехода от ОА радона к ЭРОА используется значение коэффициента равновесия F = 0,5 [9; 10]. Данное значение коэффициента равновесия было использовано при обработке результатов радонового обследования, проведенного на территории Гомельской области Республики Беларусь. Необходимо подчеркнуть, что первичная оценка соответствия ПДК проводится в масштабах района. Уже после такого определения в рамках инспекционных исследований или инженерно-геофизических изысканий проводится оценка соответствия ПДК на исследуемой местности, в здании и т.д.

На таблице 1 представлены среднерайонные значения ОА и ЭРОА радона для районов Гомельской области:

Таблица 1

Среднерайонные значения объемной активности и эквивалентной равновесной объемной активность радона Гомельской области

Район	ОА радона, Бк/м^3	ЭРОА радона (F = 0,5), Бк/м^3
Брагинский	33	16,5
Буда-Кошелевский	33	16,5
Ветковский	52	26
Гомельский	49	24,5
Добрушский	38	29
Ельский	41	20,5
Житковичский	36	18
Жлобинский	34	17
Калинковичский	48	24
Кормянский	41	20,5
Лельчицкий	37	17,5
Лоевский	33	16,5
Мозырский	52	26
Наровлянский	50	25
Октябрьский	53	26,5
Петриковский	35	17,5
Речицкий	35	17,5
Рогачевский	57	28,5
Светлогорский	37	18,5
Хойникский	38	19
Чечерский	49	24,5
Гомельская область	42	21

Из таблицы 1 видно, что ЭРОА по всем районам Гомельской области имеет небольшие значения по сравнению с нормативами ПДК (100 Бк/м^3 в проектируемых и 200 Бк/м^3 в существующих зданиях). Представленные значения сопоставимы или несколько выше среднемирового значения ЭРОА радона 16 Бк/м^3 [1]. При этом необходимо подчеркнуть, что возможны точечные колебания ЭРОА радона, связанные, прежде всего, с образом жизни людей. Так, ЭРОА радона более 100 Бк/м^3 отмечена в 2,9% исследованных жилых помещений, что превышает 0,5 ПДК для существующих зданий. Это вызывает интерес, учитывая, что Гомельская область обладает крайне малой потенциальной радоноопасностью, при этом отмечаются единичные случае значительного накопления ОА радона в жилых помещениях.

Определение годовых эффективных доз облучения от радона и его дочерних продуктов распада. В качестве альтернативы дозиметрическому подходу МКРЗ пришла к выводу о возможности использования так называемого условного дозового перехода. Такой переход осуществляется прямым сравнением ущерба, связанного с единицей эффективной дозы при внешнем облучении и единицей экспозиции радона. Исходя из этих условий определено значение коэффициента дозового перехода с использованием коэффициента ущерба МКРЗ. Расчет велся исходя из экспозиции по скрытой энергии ЭРОА радона в

течение 7000 ч в год, которая составляет $1{,}56 \cdot 10^{-2}$ мДж·ч·м$^{-3}$ на 1 Бк·м$^{-3}$ ОА радона (или 0,4 ЭРОА радона с учетом F = 0,4). Коэффициент дозового перехода был рассчитан путем условного дозового перехода как отношение ущерба от экспозиции по радону, к ущербу на единицу эффективной дозы для населения при внешнем облучении. Согласно Публикации №60 МКРЗ ущерб на единицу эффективной дозы для населения при внешнем облучении составляет $7{,}3 \cdot 10^{-5}$ мЗв$^{-1}$ [13]. Это значение ущерба учитывает все вредные эффекты ионизирующего излучения на организм человека. Согласно Публикации №65 МКРЗ ущерб на единицу экспозиции ЭРОА радона составляет $8 \cdot 10^{-5}$ (мДж·ч·м$^{-3}$)$^{-1}$ [12]. Исходя из этого условный дозовый переход от единицы экспозиции ЭРОА радона к эффективной дозе составляет 1,1 мЗв/(мДж·ч·м$^{-3}$). Таким образом, значение дозового коэффициента рассчитанного по Публикации №65 МКРЗ составляет 0,017 мЗв год$^{-1}$/Бк·м$^{-3}$ ОА радона или 6,1 нЗв·ч$^{-1}$/Бк·м$^{-3}$ ЭРОА радона на 7000 ч пребывания в жилище [12].

В дальнейшем НКДАР ООН была предложена аналогичная модель, которая, тем ни менее, имела ряд существенных отличий [1]. В ней учитывалась объемная активность торона, которая или измерялась при проведении исследований, или принималась за постоянное значение (мировое значение). Коэффициент перехода от ОА радона к ЭРОА был выше: F = 0,5. Вводилась новая переменна – доля времени нахождения в помещении (0,8) и на открытом воздухе (0,2) с соответствующей корректировкой на стандартное число часов в году (общее число 8800 ч). Дозового коэффициента этой модели был также несколько выше и составлял 9 нЗв·ч$^{-1}$/Бк·м$^{-3}$ ЭРОА радона на стандартное число часов в году 8800 ч. При этом общий ход рассуждений и последовательность расчета перехода от ОА к эффективной дозе аналогична для обеих моделей. В результате эффективные дозы от радона и его ДПР рассчитанные по модели НКДАР ООН примерно в 1,5 раза больше, чем по модели МКРЗ.

В инструкции [14], являющейся нормативным документом для Республики Беларусь при оценке индивидуальных эффективных доз облучения населения за счет природных источников ионизирующего излучения, значение дозового коэффициента принято равным $9 \cdot 10^{-6}$ мЗв·ч$^{-1}$/Бк·м$^{-3}$, и предложен расчет, соответствующий рекомендациям НКДАР-2000 [15; 16]. Однако модель условного дозового перехода, предложенная в Публикации №65 МКРЗ [12] до сих пор не потеряла актуальности и в более новой публикациях МКРЗ №115 [5], посвященной радоновой проблеме не было предложено альтернативы данной модели. Таким образом, для оценки средних эффективных доз облучения населения от ингаляционного поступления радона и его ДПР использовались две модели перехода от ОА радона к эффективной дозе: модель МКРЗ [12] и модель НКДАР ООН [1].

Годовые эффективные дозы облучения населения, проживающего на территории Гомельской области, обусловленных радоном и его ДПР представлены в таблице 2:

Таблица 2

Годовые эффективные дозы облучения населения, проживающего на территории Гомельской области, обусловленных радоном и его ДПР в воздухе

Район / Область	Модель МКРЗ, мЗв/год	Модель НКДАР ООН, мЗв/год
Брагинский	0,68	1,09
Буда-Кошелевский	0,68	1,09
Ветковский	1,06	1,73
Гомельский	1	1,63
Добрушский	0,78	1,26
Ельский	0,84	1,36
Житковичский	0,74	1,2
Жлобинский	0,7	1,13
Калинковичский	0,98	1,6
Кормянский	0,84	1,36
Лельчицкий	0,76	1,23
Лоевский	0,68	1,1
Мозырский	1,06	1,73
Наровлянский	1,02	1,66
Октябрьский	1,08	1,76
Петриковский	0,72	1,16

Речицкий	0,72	1,16
Рогачевский	1,17	1,9
Светлогорский	0,76	1,23
Хойникский	0,78	1,26
Чечерский	1	1,63
Гомельская область	0,8	1,4

Из таблицы 2 видно, что в среднем на территории Гомельской области регистрируются значения эффективных доз облучения радоном и его ДПР около 0,8 мЗв по модели МКРЗ и 1,4 мЗв по модели НКДАР ООН. Учитывая последствия аварии на Чернобыльской АЭС и загрязнение техногенными радионуклидами в большей степени именно Гомельской области – определение и уточнение эффективных доз от облучения радоном, как основного компонента естественного радиационного фона, имеет важное научное и практическое значение. Такие исследования необходимы как с целью расчета дозы облучения, получаемой населением от всех источников (естественных и искусственных), так и с целью сопоставления доз, формируемых чернобыльскими радионуклидами, в сравнении с естественными радиационным фоном.

Заключение. По всем районам Гомельской области показаны небольшие значения ОА радона по сравнению с нормативами ПДК (100 Бк/м^3 в проектируемых и 200 Бк/м^3 в существующих зданиях) [9]. Представленные значения сопоставимы или несколько выше среднемирового значения ЭРОА радона 16 Бк/м^3 [1]. Отмечено, что в 2,9% жилых помещений ЭРОА радона превышает 100 Бк/м^3. В среднем на территории Гомельской области регистрируются значения эффективных доз облучения радоном и его ДПР около 0,8 мЗв по модели МКРЗ и 1,4 мЗв по модели НКДАР ООН.

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SECTION 31. Economic research, finance, innovation, risk management.

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ANALYZE OF VARIABLES OF IMPROVING IN A REGIONAL ECONOMY FROM THE POSITION OF APPLIED AND EMPERICAL COMPETITIVENESS

Abstract: *Nowadays it is actually true that in fast changing label time law of superiority is a prerogative of strongest one. Nevertheless the question of superiority is a most discussible question. From the one side, there's been a lot of scientific evidence that stronger organization destroy poor and then becomes match stronger. On the other hand the theory of black marketing is a brake for a whole economy modernization.*

Key words: *prerogative, black marketing, superiority, communal services, government policy, variables of account, accounting services.*

Language: *English*

Citation: Abdimusa ZN, Kupesheva AK, Shalkhar EZ, Batyrbaev NM, Dusipov ES, Shalkharov YS (2016) ANALYZE OF VARIABLES OF IMPROVING IN A REGIONAL ECONOMY FROM THE POSITION OF APPLIED AND EMPERICAL COMPETITIVENESS. ISJ Theoretical & Applied Science, 09 (41): 138-141.

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Introduction

Nowadays regional economic systems become much actual mechanism of national economy formulating stage. Moreover, it is a much better case that governmental system is apply to the region some independency, which allow to use some mechanisms automatically. Nevertheless there have place special economic phenomena named superiority. Existing of superiority have nice influence to the national economy, because developing marketing area of business sector can improve their abilities only if they will increase special market skills [1].

Presently, absorption theory of stronger companies to weaker organizations is a natural process, contributing to the growth of economic opportunities for certain types of organizations. It do them much faster and comfortable for consumers [2]. However, weaker organizationы in this case are the victims of large corporations, which can lead to such consequences as the clan management equity shares [3].

Materials and Methods

For the much adequate analyses, it is much actual to remind the theory of competiveness. According to Porters competiveness theory it is important some issues [4]. For the firms competitiveness meant possibility to compete in the world market in a global strategy. For many congressmen competitiveness meant positive foreign trade balance [5]. For some economists a competitiveness implied subzero productive expenses on unit of products, resulted to the course of exchange. Only, what conception of competitiveness can be base on the level of country is the productivity of the use of resources" [6]. He marks at the same time, "corporations, not nations, are at the cutting edge of international competition... the competitive edge of companies is straight related to the mestome that they name the nation or country of origin... forming of corporation in "wrong" nation must cause a fundamental strategic concern... [7] A corporation gets important advantage from a presence in the nation of such companies-suppliers and companies-customers of her products, that occupy leading positions on world. Thus, a competitiveness, from his point of view, success or failure in certain industries of production and that place that a country occupies in the system of world economy determines, and a national competitiveness is determined by ability of industry constantly to develop and produce innovations [8].

Originally national companies labour for a competitive edge, changing basis on that they compete. To retain advantage allows permanent perfection of commodity, method of production and other factors them, thus operatively, that competitors were not able to go after them and outdrive [9]. A competition is a not equilibrium, and permanent changes. Therefore explanation of competitive edge a role of country of stimulation of updating and perfections (i.e. in stimulation of production of innovations) is the basis of. It appears thus, that the process of creation and maintenance of competitiveness is extraordinarily localized [10]. Distinctions are in the economy of countries, in their culture, population, infrastructure, management, national values and even in history is all in one or another degree influences on the competitiveness of national companies and determined by the set of factors depending on certain, local terms. In basis of his theory lie four most substantial factor, that can be presented as a rhombus (national rhombus, as his author named) and that are determinants of competitive edges [11]. A country disposes a competitive edge only then, when possesses not alone, and by all elements of rhombus. The following behave to basic determinants of competitive edges [12].

Table 1

Resources.

Human Resources	Physical Resources.	Infrastructure	Knowledge Resources	Finance.
the number, qualifications and labor costs, the rate of working hours, work ethic;	the quantity and quality of mineral resources, water, land, forest resources, hydropower resources, etc., the geographical location and climatic conditions of the country;	transport system, communication system, postal services, communications, health, etc .;	resources that are concentrated in institutes and universities as well as research institutes and data banks;	capital, which can be sent to production.

Conclusion

- For the main - is a kind of reality, which is not significant to win a competitive advantage, they create competitive advantages of lower rank (eg, natural resources, climate, geographical location, unskilled and semi-skilled labor, debit capital, etc.) [14];
- Developed - these are the factors that create a sustainable competitive advantage of high rank (such as modern infrastructure,

exchange of information, a highly qualified workforce, research departments and institutions, etc.) [15].

Background.

For a whole competent it is actual to notice that all issues in articles were formulated from the surveys of BeinAgroIndustries LTD. Also, it is important to mention together work of two university staff: Kazakh Engineering and Pedagogical University of Nations Friendship and International Kazakh-Turkish University after Khoga Akhmet Yassavi. In case of novelty, p.t.value the main author is the last in the list of authors.

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AN ANALYSIS OF THE FEASIBILITY OF THE UPGRADING MODERNIZATING OPERATIONAL ANALYSIS OF AUDIT RESULTS, COUNT LECTURING, ACCOUNTING AND OTHER FINANCIAL ACTIVITIES OF SMALL AND MEDIUM SIZED ENTERPRISES IN KAZAKHSTAN

Abstract: *Operational analysis is by far one of the key mechanisms for effective data analysis and processing in industrial and non-industrial enterprises. Accordingly, the level of development of such tools is the key to the success and effectiveness of any enterprise in a market society. While many payment transactions are formed on the basis of absolute calculation functionality and feasibility of operating systems it depends on their level of development.*

Key words: *Operational analysis, key mechanisms, consumer data, trading index, non-industrial enterprises, accounting services.*

Language: *English*

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Introduction

In a market economy the enterprise well-being depends on the size of the profits. Wanted reasonable and balanced approach in taking both strategic and tactical decisions based on widespread use of economic methods [1].

To develop a wide range of administrative decisions used quite regularly so-called operational analysis (or analysis of the relationship "costs - production volume - profit") [2]. This is one of the most effective methods for operational and strategic planning and performance management of the company, which is based on the linear relationship between the size of the release of goods, the sales proceeds and costs of the enterprise [3].

Materials and Methods

Operational Analysis - one of the most effective methods for analyzing the impact of the cost structure and revenue on product profitability and ultimately the effectiveness of the enterprise [4]. It allows through modeling to find the most advantageous ratio between variable and fixed costs, the cost of production and the volume of production. Its effectiveness is determined by the fact that the analysis brings together market research, cost accounting, financial analysis and production planning (A. Brown "Operational analysis as an approach to pricing") [5].

Application operational analysis also allows to determine the minimum value of the order. Operational analysis helps to determine the most advantageous combination of the relationship between the variable costs per unit of output, fixed costs, the price and volume of production [6].

Operational analysis allows to find the most advantageous ratio between variable and fixed costs, the price and volume of production. The main role in the selection of the company strategy of behavior belongs indicator of marginal income [7]. A key element of the operational analysis performs calculation of break-even point, the threshold of profitability, safety margin and operating leverage [8].

The results of operational analysis necessary for the management of the enterprise acceptance of correct administrative decisions. With the help of the operational analysis reserves defined, provides an objective assessment of the production reserves and the extent of their use, the obvious real deficit or loss of resources, the objective need for them to increase production or increase existing resources. On the basis of the operational analysis developed ways of mobilizing reserves, the possibility of their resources and financial support [9].

Operational analysis uses the entire range of economic information is internal and operational nature, so has the ability to realistically assess the state of the organization, to investigate the cost structure of the issued and sold products and some of its species composition of the commercial and administrative expenses, allowing carefully examine the nature of the job responsibility persons for the resulting deflection [10].

These operational analysis play a crucial role in the development of the most important issues of competition policy of the company, managers are used to improve the technology and organization of production, to create a mechanism to achieve maximum profit [11].

An essential element of the operating costs analysis is the study of the structure, that is, the ratio of variable and fixed costs of the enterprise. And there is some sort of unified recommendations on the best cost structure even within the same industry. Their optimal ratio depends on the specific conditions of the enterprise and the influencing factors, including the long-term trend and the annual fluctuations in the level of sales, and so on. N [12].

Performance management mechanism of the enterprise using the "Interconnection costs, sales volume and profit" system is based on its dependence on the following factors: a) the volume of sales; b) the amount and the level of net operating income; c) the amount and level of variable operating costs; g) the amount of fixed operating costs; d) the ratio of fixed and variable operating costs [13].

These factors can be considered as basic in the formation of the amount of different types of income, working on that you can get the desired results, increasing the efficiency of the enterprise [14].

One of the simplest and most effective methods of operational analysis for the purpose of operational and strategic management of profits is to analyze the "cost - volume - profit", which allows you to track the relationship of business financial performance. Analysis of "cost - volume - profit" is to answer the most important questions faced by venture financiers on four main stages of money turnover [15].

Conclusion

With the simplicity of the model used operational analysis is attractive because the information base for it are data available on the total revenues and total costs of the company for several of the analyzed periods. Analysis of the Relationship "costs - production volume - profit" allows us to solve many analytical problems and serves as a powerful information tool for the preparation of administrative decisions. With the help of this analysis identifies important to control the value: break-even point, the security indicator, operational risk and the critical level of selling prices.

Background

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S.W.O.T ANALYSIS OF SMALL BUSINESS DEVELOPING STRATEGY IN A MARKET ECONOMY CONDITIONS FROM THE POSITION OF INNOVATIONS

Abstract: *In developing the era of market economy any state tends to develop small business sector in the first place. After all, small business is a catalyst for the progress of the national economy both at micro level and at the macro level. In such a trend the most important factor is the chosen strategy of development of small business in the marketplace state territorial unit.*

Key words: *profitability, government, rental strategy, small business, S.W.O.T analyses, decision, consumer, good.*

Language: *English*

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Introduction

Development of small and medium-sized businesses at all times was considered the basis for economic development of the state. But the development of small and medium-sized businesses - is, first and foremost, an educational framework which takes into account all the problems of small business development [1].

Continuous improvement of such a framework will identify and predefine business prospects. It is on the basis of the business development strategy

designed and in particular the development of Russian business. Development of small and medium business, as the experience of the leading economic powers, leads to an increase in the state's economy as a whole and, ultimately, to improve the welfare of its citizens [2].

Sustainable development of small and medium-sized businesses due to a number of advantages, which it has. And above all, the development of small and medium-sized businesses, is its mobility and flexibility to respond quickly to market demands and quickly adapt to changing conditions [3].

Materials and Methods

Strategy selection is made according to certain criteria, which are in the rankings the decisive role is played by the top leaders of the organization. Multiple strategies that use the firm, are only a few modifications of the basic strategies. Each of them is effective under certain conditions and the state of the environment [4]. The concept of basic competitive strategy characterizes the kind of competitive advantage and the scope in which it is achieved.

The strategy involves a complex change in the company, without which it is impossible to achieve success, even with an effective strategy. Implementation of changes - is the foundation of the strategy. Under the changes in the organization understand the decision of its leadership to make changes to one or more of the internal components of the organization relating to the goals, objectives, structure, technology, the human factor, which is caused by changes in the external or internal environment [5].

For the survival of the organization of its management should periodically evaluate and adjust the strategic goals and objectives in accordance with the changes in the external environment and the organization itself. Often the need to change the target detected by the monitoring system [6].

Most people decide to start their own business initially used their own strategies based on experience in the business at the most primitive level. This is evidenced by statistics, unfortunately, she is relentless. Each year, bankrupt 90% of new firms. We offer a 7-purpose strategic development of tactics that can be applied today and in the shortest possible time to succeed in the development of small businesses. Here we will talk about ways to help grow your small business in today's competition [7].

At this stage, the enterprise market position, identify strategic objectives, alternative ways (strategies) to address them. In order to become the strategy, this set of problems and challenges must turn in: all activities should be focused on long-term goals, linked by resources and time, as well as the need to effectively combine and complement each other in terms of the objectives of structural divisions of the company [8].

Together with the definition of a common, corporate strategy development takes place in support of its business strategies and functional strategies. At the heart of a successful strategy should be based on the creation and use of competitive advantages [9]. This may be the ability to sell products at low prices, and providing high quality products and range of services, and advantageous location of the company or its affiliates [10]. This means that the strategy must not only maintain its competitive advantage, but also to initiate new ones [11].

The potential of the company is a collection of its capacity for the production of goods and provision of services and include internal variables and management capacity. The possibility of organizing its predefined resources (factors of production) at its disposal. In a market economy potential of the organization depends on internal factors, as well as on consumer demand, the actions of competitors, the economic situation in the country and others [12].

The competitiveness of the company characterizes its ability to withstand competitors to effectively compete for markets. The competitiveness of firms is a relative characteristic, determined by comparing the object. The factors that determine the competitiveness of the company, are the potential of the company (Resource and Innovation), a skilful choice of strategy, the potential of its senior management, the financial results of its operations [13].

Tactics improve their own standards of quality management should be applied to all kinds of strategies, so it is in the first place. If the level of quality control standard higher than the competitor you have a huge advantage. Develop self-discipline and win their competitors by working on yourself. In all strategies, it is important to manage the resources, and resources are available at all the only question is: how to manage them? All four of the above listed rules will earn, if it is designed to manage and mutual support staff on the principle of synergy [14].

Conclusion

Perceive the visual design elements Sensor detection as an investment in attracting additional customers. The logo of your brand should not be a work of art, his task is to convey the theme "message" to the target consumers. Qualitatively taken aback products are regularly updated in the

price range and price. Maximum fill in contact information, add the service "Order a free call." Check the correct display of the site in different browsers on different devices (PCs, tablets, mobile phones). Clients meet your business on clothes. Plan a small project to develop the image and popularity of local businesses [15].

Background.

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THEORETICAL BASIS OF COORDINATIONAL RESULTS BETWEEN SCIENCE, BUSINESS AND STATE ACCORDING TO CONDITIONS OF INNOVATIONAL INFLUENCE OF NATIONAL ECONOMICS

Abstract: *Nowadays, the impact of science, business and government reforms have a greater and greater impact on the national economy. So, as one of the Equilibrium of all three means of contact can be called scientific grants for the development of a product in the target area of market relations. At the same time such funding may be allocated by both the state and commercial organizations. Most often, the present is relevant in the field of agriculture and industry in general.*

Key words: *social grants, audit services, scientific evidence, equilibrium, business, reforms, chief governmental body, accounting procedure.*

Language: *English*

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Introduction

The main argument in favor of studying all the theoretical foundations of the economy is that the economy explores issues that relate to all people without exception. All people involved in the sphere of economic life (they work, earn an income, make purchases, pay taxes, etc.). Every person will sooner or later ask the question: what determines the salary, why prices are rising, why in one country the standard of living is higher than in another, it is more

profitable - to be employed or to organize their own business, put money in the bank or buy shares, and in general, what is money? [1].

Materials and Methods

Since a systematic course of study, you must first find out what the economy is that it examines what its functions are, what methods used by economists in the analysis of economic relationships and regularities.

The word "economy" of Greek origin (oikos - agriculture, nomos - law), it means "the laws of economic management." Today, the term "economy" is used in two main senses: firstly, as a synonym for the word "economy" (the economy of the country, region, enterprise, planned, market economy, etc.) and, secondly, as the name of science that studies the theoretical foundations of management [2].

Like any science, the economy performs primarily cognitive function - it theoretically explains how the economy, the essence, causes, effects of economic processes (such as banks make money, what is the essence of inflation, as the proposal affects the price, etc.). On the basis of theoretical generalizations actual facts of economic life economy explains that there is or can be, formulates principles of economic behavior (positive economics) [3].

Economic policy should not be voluntarist (willed), it must build on the achievements of economic theory. For example, if you know that there is an inverse relationship, the respective legislative bodies, governments in their practical activities aimed at reducing the unemployment rate, should be taken into account is the position between the level of unemployment and the rate of price increases [4].

Depending on the object of study the economy can be subdivided into two major parts:

Microeconomics - part of economics that examines the behavior of individual economic entities - customers, firms, analyzes the mechanisms of functioning of individual markets, the allocation of resources in the directions of their use, income generation, etc.

Macroeconomics - a part of economics that studies the functioning of the economy as a whole such common phenomena and processes as the growth rate of national output, inflation, unemployment, budget deficits, public debt, state regulation methods, etc [5].

Despite differences in emphasis at the micro- and macro-analysis used the same concepts and theories are considered the same problem.

Economy - social science. It examines certain aspects of society and as such is closely related to other social sciences: history, sociology, political science, psychology, law, etc. Contact economics and law is due to the fact that the economic life of society, economic and legal relations are closely intertwined [6].

The economy can not function properly without an appropriate legal framework - set of rules governing the activities of economic entities both at micro and macro level. At the same time the need for appropriate legal norms generated by changes in the economic life of society, Speaking about the relationship of the economy and other sciences, it should be noted that the economy - the most accurate of all the social sciences, so it makes wide use of mathematical tools, quantitative research methods [7].

Considering such things as price, profit, interest, demand, etc., along with economists always use quality and quantitative analysis.

Studying the functioning of the economy and pushing the mechanism requirements, the results of this operation, the economy as a science uses some research methods (method - is the path way to the study of an object). How the economy is exploring his subject? [8].

The method of scientific abstraction. Its essence - the cleansing of the test subject from the private, accidental, transitory, and the allocation of essential, permanent, typical. The result of abstraction - the categories, concepts, expressing the essential aspects of the objects (price, profit, rent, etc.), and economic laws (principles), reflecting the permanent, stable, recurring causal relationships between economic phenomena (the law of demand: price increase (cause) leads to lower demand (a consequence)).

The economy is widely used functional analysis [9].

Economic modeling today - a very common method for the study of economic problems. Models are simplified, formalized description of economic reality, they are ignoring the many minor details that complicate the analysis of various interdependencies, allow to better understand and describe the reasons for the relationship, the laws, the consequences of certain economic processes and phenomena [10].

Mathematical modeling is difficult enough in the economy, as the economy - a multi-dimensional system, the functioning and development of which is largely stochastic (probabilistic) character is influenced by many external factors,

Economists in their studies often use assumed "ceteris paribus", ie It assumes that all other variables, except for those that are currently investigated are unchanged. This method simplifies the process of analyzing the study of communication [11].

Economic experiments - an artificial reproduction of economic phenomena in certain circumstances, for the purpose of study and further practical changes. Experimentation as a learning method can be carried out both at the micro and at the macro level. However, experiments have not forcibly break the natural economic processes, to squeeze the real economic life in the framework of artificial structures [12].

Whatever method is used by economists in their research, practice, the economic reality is the criterion of faithfulness of those or other conclusions, the provisions of the economic theory. If we can say that "this is true in theory but not in practice", which means that it is not true or that theoretical proposition, this or that conclusion [13].

Efficiency in distribution. The question of "for whom?" Is directly related to efficiency. The distribution of any given amount of good can be improved through the exchange, in which the preferences of several people will be satisfied more fully. As long as the possible exchange of existing goods, so that some people may satisfy their desires without harming others, the effectiveness of the distribution can be improved, even if the total amount of wealth remains the same [14].

Conclusion

Fairness in the distribution. In practice, the question of justice is often dominates the efficiency in the allocation of the discussions. According to the concept of equality, all the people, by the very fact of belonging to humanity, deserve to receive a portion of the goods and services produced by the economy. There are many variations of this theory. Some believe that all the income and wealth should be shared equally. Others believe that people have a right to the "minimum necessary" income level, but that any excess above this level [15].

Background.

For a whole competent it is actual to notice that all issues in articles were formulated from the surveys of BeinAgroIndustries LTD. Also, it is important to mention together work of two university staff: Kazakh Engineering and Pedagogical University of Nations Friendship and International Kazakh-Turkish University after Khoga Akhmet Yassavi. In case of novelty, p.t.value the main author is the last in the list of authors.

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LEGAL PREREQUISITES IN CREATION OF THE CARABINIERE CADETS AND ITS ROLE IN QUESTIONS OF PRESERVING HISTORICAL AND CULTURAL HERITAGE OF THE REPUBLIC OF KAZAKHSTAN

Abstract: *Now one of the most widespread questions is protection of cultural heritage worldwide. As a rule, many historical relics and artifacts are on the property right of other states, in many public funds, private collections and are on sale at auctions abroad. In the Republic of Kazakhstan there is no specific structure consisting of specialists of a narrow profile who could represent the interests of the republic on the international scene regarding protection of cultural heritage and control of export it from territory of the Republic of Kazakhstan.*

Key words: *Kazakhstan, cultural heritage, control.*

Language: *English*

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Introduction

This statement is expressed in the historical artifacts found in case of archeological excavations. At the same time it should be noted that legislatively in the Republic of Kazakhstan the main objective in the field of culture which in compliance with part 9 of article 4 of the law of the Republic of Kazakhstan "about culture" consists in an obstacle to illegal export and import, illegal transfer of competences of the owner to cultural values, taking measures to their return from any adverse possession (1) is outlined. However specific state bodies except divisions of the Ministry of Internal Affairs the having wide range of actions, but without necessary skills and knowledge in the field of archeology of history of bodies don't exist. So, the specific list of competences of authorized body is specified in article 7 of the same law, however in this legislation cases of a conflict of interest where more qualified legal preparation based on historical education (2) is necessary aren't specified. As this division creation of specialized international mediators in the field of archeology, differently would be very urgent as it is accepted to call on the example of many developed countries with rich historical and cultural heritage cases of carabineers (3).

Materials and Methods

Legally, this concept in the Republic of Kazakhstan is feasible and has rather large number of standard elements that definitely, shows rather high probability of success of implementation of this policy. Having rich historical roots, the territory of the Republic of Kazakhstan is integrated to various pieces of many historically significant events, and also the status of the Republic on the international scene assumes protection of many objects as heritage of UNESCO that is very positive factor in only the developing state (4). However maneuvering in the field of archaeological culture on the international scene allows not only to keep values, but also generates the conflict with many foreign subjects which owing to a long experience have great opportunities for withdrawal of many artifacts having huge cultural heritages for the Kazakh people as for example Keyki's batyr head or Taykazan's cover (5). The parties not only neighboring states, but also bodies of the large international organizations where it is necessary to work very thinly and delicately were net legally involved in both conflicts in case of interpretation regulation(6). On the one hand implementation of this policy by subjects of department of foreign affairs is a reasonable exit from situations; however owing to the restrictions on functional obligations subjects of diplomatic service have no sufficient power to perform many functions which are peculiar to experts (7).

Many manuscripts, artifacts, books, other printing audio-video records, stored in various storages, the museums, collections, libraries outside Kazakhstan weren't returned properly. And as dynamically developing state Republic of Kazakhstan has development of historical and cultural heritage as one of the key purposes. Unfortunately this fact is impossible without original artifacts. But, as well as it was mentioned above in the Republic of Kazakhstan there are enough standard elements for creation of service of universal independent mediators – the services of karabiners of the foreign languages having legal and historical education with knowledge basing the competences within the ratified international treaties, conventions and also internal Kazakhstan laws where on hierarchy of the legislation the Constitution of the Republic of Kazakhstan, Law of the Republic of Kazakhstan "About Protection and Use of Objects of Historical and Cultural Heritage" July 2, 1992 No. 1488-XII, and Law of the Republic of Kazakhstan "About culture" (8). This institute can have broad application not only for protection of historical values, but also regarding questions of regulation of the international legal relationship concerning fine arts objects, elements of ceramics, sculpture having special national color (9).

In many countries of service of karabiners belong to division of law-enforcement bodies, however taking into account specifics of the Republic of Kazakhstan as a post of the Soviet state it would be more reasonable to create this structure subordinated to bodies of the foreign cases (10). First because specifics of work is interaction with foreign departments subjects and coordination of the international activities within the ratified agreements. In the internal affairs bodies of the Republic of Kazakhstan there are no specialists with such skills as generally activities are connected with law and order (11). Secondly this structure shall is in jurisdiction of the Ministry of Foreign Affairs because it can adjust legal relationship with partners from foreign countries regarding improvement of the relations in scientific activities (12).

Conclusion

Thus, being dynamically developing state for achievement of certain heights the Republic of Kazakhstan shall take care of representatives of state interests, competent of representation, regarding protection of historical values. On service in karabiner tough candidate screen also shall be provided as shall be the main criteria the higher legal education, the higher historical education and knowledge of several languages at the upper intermediate level with Basic English level IELTS 7.

Background

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important to mention together work of two university staff: Kazakh Engineering and Pedagogical University of Nations Friendship and International Kazakh-Turkish University after Khoga Akhmet Yassavi. In case of novelty, p.t.value the main author is the last in the list of authors.

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STALKING CLASSIFICATION INCHOATE CRIME IN RECOGNITION OF THREAT OF PURSUED LIFE AND HEALTH

Abstract: *Today consideration process stalking as unfinished crime gains relevance. So called stalkers most often are the reason of unnatural behavior of the victim which can lead to deterioration in vital indicators including to disability for an accident cause. Having more psychological definition crime is reflected legally in offense of private space of the victim. At the same time from position of the criminal legislation of the Republic of Kazakhstan, that action isn't punished. Nevertheless, at the combined use of standards of the civil, criminal and administrative legislation and also at sequence correct use, progression of modern legal mechanisms, those actions aren't the inapplicable party of modern law.*

Key words: *crime, law, Kazakhstan.*

Language: *English*

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Introduction

Dividing stalking into stages we can identify three stages of prosecution. All stages cardinally differ according to social behavioral characteristics, motives and extent of socially dangerous or personally dangerous act. So in stalking interest the

stalker some characteristics of the victim observed. The personal sympathy, not shown aggression, certain level of an inclination, unexpressed offenses, debt and other reasons of dissatisfaction classified by the psychological legislation can be these characteristics (1).

Materials and Methods

First of all, stalker as a rule collects data of pursued. Existence of these data can be both public and personal (2). At the same time, receiving data of public character, the stalker violates nothing the rights and freedoms pursued as all received data are public element (3). However, practice shows that stalkers aren't limited to public data and generally pass line inquiring about personal data of the pursued object (4). At the same time it should be noted that obtaining data about pursued being public information isn't stalking. Respectively, any invasion into personal space of the victim is prosecution. Housing, some places of stay, habit, close people, secrets, the relations and other elements can be that private space (5).

The second stage of persecution assumes itself invasion of the stalker into private space pursued without knowledge of consent. The short distance visual analysis of objects of the private use pursued imperceptible observation, collection of information about pursued and theft of personal objects pursued can be that invasion (6). Most often those stalkers keep certain diary of observations for pursued where most often there is video, audio and photo record. These records received without the knowledge of the object or without appropriate sanction are an element of infringement of personal space in the criminal way. Also at this stage of prosecution there are trophies collected by the stalker from number stolen it the personal belongings which are thrown out by the victim (7). In the presence of those prosecution proofs, those physical evidences are good cause for involvement of the stalker to civil, administrative or criminal liability (8).

The third stage of prosecution is the persuasive behavior of the stalker without direct contact with the victim. That behavior most often is followed by phenomenon of moral decline of the victim because of fear of infliction of harm of life or to health that finally leads to victim reckless actions. At this stage stalkers become visible for the victim intentionally, for the purpose of threat. So, without expressing the motive in words and in actions, the stalker tries to obtain panic, as is the main instrument of infliction of harm to the victim. Deliberately appearing suddenly, gesticulating, in certain cases even threatening the victim, stalkers bring the victim out of psychological balance (9).

In the world literature stalkers are divided into six main types.

The first type of stalkers is kaves. The motive of the real stalkers is expressed in self-realization. Being been psychologically unsatisfied they as a rule leave business cards in public places, drawing certain signs or painting the pseudonyms on a review of the public (10).

The second type of stalkers is roleplayers. The motive of the real stalkers is expressed in simulation popular to the screen version of the film industry (11).

The third type of stalkers is intelligence agents. The presents find application in military, economic and industrial espionage (12).

The fourth type of stalkers is outcast. The persons unsatisfied or rejected in the relations with an opposite sex also are in the habit to pursue the victim (13).

The fifth type of stalkers is bouncers. As rule, they pursue debtors collecting information on their solvency with the purpose to have information that to require in compensation of damage (14).

The sixth type of stalkers is fans. Idealizing of certain person the persecutor can beat out pursued from stable condition (15).

Conclusion

Working in compliance with the specifics of behavior stalkers are in the habit to remove pursued from psychological balance that can lead to drawing to the health and life of pursued material and moral damage with risk of harm infliction. The present does stalkers by extremely dangerous segment of the persons who have committed an easy crime.

Background.

For a whole competent it is actual to notice that all issues in articles were formulated from the surveys of BeinAgroIndustries LTD. Also, it is important to mention together work of two university staff: Kazakh Engineering and Pedagogical University of Nations Friendship and International Kazakh-Turkish University after Khoga Akhmet Yassavi. In case of novelty, p.t.value the main author is the last in the list of authors.

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THEORETICAL ASPECTS OF THE HUMANIZATION CONCEPT AND ITS POSITIONING IN SPACE IN COMPLIANCE WITH THE NEW RATE OF CRIMINAL POLICY OF THE REPUBLIC OF KAZAKHSTAN

Abstract: *Today the Republic of Kazakhstan is dynamically developing state on the world scene in the conditions of market economy as the constitutional democratic state. Therefore, all reforms undertaken in the state are closely connected with upgrade of legal institutions towards democratization of society. As one of such institutes authors of this article consider humanization policy in the Republic of Kazakhstan, and also questions of its adaptation to the Kazakhstan society having certain specifics.*

Key words: *Kazakhstan, world scene, policy.*

Language: *English*

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Introduction

Nowadays the Republic of Kazakhstan is one of 50 countries with the highest level of world competitiveness. This Republic provision positions first of all as the constitutional democratic state with strong system of functioning of internal mechanisms.

Enhanced industrial, economic, cultural and including legal mechanisms which are based, first of all, on state policy rate (1). The penal legislation of the Republic of Kazakhstan also is stage of new stage transition which humanization main vector. Also important to understand that any punishment, first of all, is directed to understanding made offense crime and public danger of the act. It is also about humanization (2).

Materials and Methods

Certainly proceeding from the principles of economic prosperity it is possible to assume pragmatically that the policy of a humanization is necessary for the state as net logically many convicts for small offenses serve sentence at the expense of means of the state, to be exact taxpayers, meanwhile as questions of social security still remain disputable and questions of financing of many objects depend only from means of representatives of a business sector (3). In addition, as fairly noticed in the researches Cara C. MacInnis, Mary H. MacLean, Gordon Hodson concerning questions of political conflict between conservatives and liberals based on a disputable precedent on restriction of levels and conditions of abortions in the state in 2014 "Humanization is the most fair direction in departure of punishments by courts which has the best result, for society, and for state in general" (4).

Of the one part the matter really is the adequate decision in the situation which developed in the state, the main problem in any state was always the question of overpopulation of detention places (5). So in the following work researchers from the Arizonian State University, USA Călin Scripcaru, Simona Irina Damian, Ştefan Antonio Sandu, Beatrice Ioan stated following results with which in compliance in many countries various decisions were made, beginning from release of security prisoners, continuing by shortening of term because of good behavior and finishing with amnesty, having rather wide contingent adapted one number more if and spent the mass of public funds on implementations of various directions on socialization and rehabilitation of prisoners in the first five years of life after serving sentence for non-admission of repetitions of these crimes which almost didn't reduce crime rate in the region, including social security, an insurance and unemployment benefits in case of problems with employment as health workers, as a rule, lose the license for life because of a criminal record, meanwhile as in many medical organizations shortage of personnel resources reaches catastrophic limits and that is more urgent problem, the condemned health workers serve the punishment sentences together with other criminals which made different types of intentional crimes with causing heavy harm to health and even death (6). Transfer of criminal offenses category small weight to the administrative offenses category of with a levied penalty and the corresponding penalty fee for non-execution of requirements of state bodies considerably will increase the state treasury by means of collection of these penalties regionally. In addition this policy gives prospect for development to many financial organizations as for example organizations performing collection types of activity where violators would obtain loans from the organization necessary for obligation fulfillment before state bodies of internal affairs and those organizations would expand the client base without being limited only in bank sphere (7). However, this economic progress in the state will surely serve as reverse side of negative effect at internally social and cultural levels that in turn will break balance among the population of the Republic of Kazakhstan as minor offenses like hooliganism, vandalism, causing small and average harm to health, frauds, thefts and rapes will begin many physical persons for which in the principle won't constitute work to make on a pocket socially dangerous the acts which entailed the criminal consequences made with a felonious intent, especially with that accounting that for this offense it will be possible just to pay a penalty to the state treasury and obligations to the state will be fulfilled (8).

Thus hypothetically can the number of recidivists will increase that in principle exclude any logic of policy correctness. Therefore, this factor directly influences the legal culture level in society. Many socially dangerous acts will accept nature of the transaction between the physical person which made offense and the state whose legal relationship are regulated only in penalties namely in the currency relations. On the one part it can positively influence society as based on increase in administrative penalties up to the sizes higher than ten sizes of minimum wage on these or those crimes much will be just too expensive to commit crimes, as is achievement of main goal stabilization of law level of and order in the state, of other part this result can have and reverse side of which sharp stratification of society on material prosperity is result.

For segments of the privileged population this concept can grant the right by nearly force to influence external factors that, somehow, is close to corruption in more legalized type. However we should consider in details available standard elements in the civil legislation of the Republic of Kazakhstan as this legal relationship directly pass under jurisdiction of the civil code of the Republic of Kazakhstan.

Thus, the side between the administrative legislation, the criminal legislation and the civil legislation is significantly washed away that in turn leads to loss of validity of many provisions, creates an imbalance in hierarchy of the legislation and owing to the instability to maneuver in legislative

space will increase the level of legal nihilism in society that in turn extremely negatively affects on civil society development. The principle of democracy at this deal loses force automatically. However the humanization concept can become a push in development of the criminal legislation under some circumstances where the institute of a recurrence of socially dangerous offenses will be more carefully developed. At due studying of recurrence system it is possible to assume fairly that anticipation by the violator of more serious consequences if the administrative penalty can influence directly of individual legal education level and have really educational character which is supposed as main objective of punishment which in turn stops commission of socially dangerous acts by other persons that is the second purpose of institute of punishments which it is summarized increase law and order level in society it is main goal of criminal policy of the Republic of Kazakhstan.

Conclusion

Summing up the results, it will be reasonable to assume that the humanization is simplification of many minor offenses regulated by the administrative legislation of the Republic of Kazakhstan. However it is impossible to transfer responsibility from penal legislation limits as at internally national level this policy can lead to irreversible consequences completely. In case of all this should to note that during forming policy of penal legislation humanization more accurate emphasis needs to be placed on institute of recurrence. The recurrence is crucial element in humanization policy drawing distinction between law and order and chaos.

Background.

For a whole competent it is actual to notice that all issues in articles were formulated from the surveys of BeinAgroIndustries LTD. Also, it is important to mention together work of two university staff: Kazakh Engineering and Pedagogical University of Nations Friendship and International Kazakh-Turkish University after Khoga Akhmet Yassavi. In case of novelty, p.t.value the main author is the last in the list of authors.

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THE CORRUPTION OFFENCE NATURE IN THE REPUBLIC OF KAZAKHSTAN IN COMPLIANCE WITH CRIMINAL CODE OLD EDITION OF THE REPUBLIC OF KAZAKHSTAN INTERACTION WITH THE NEW COURSE OF THE CORRUPTION OFFENCES HUMANIZATION: COMPARATIVE APPROACH

Abstract: *The corrupt legislation in the Republic of Kazakhstan has key value in upgrade of criminal system and in functioning of the state apparatus of the Republic that is one of the major sectors in enhancement of criminal policy of the Republic of Kazakhstan in general. Therefore, in case of well developed corruption classification system crimes and accurately systematized order of prescribed punishments there is probability of increase in overall performance not only state bodies, local government bodies, divisions of executive system, but also commercial and non-commercial legal entities as socially dangerous acts of corruption nature have universal application.*

Key words: *corrupt legislation, Kazakhstan, government.*

Language: *English*

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Introduction

The main source determination corruption offenses is the Criminal Code of Kazakhstan where in articles 311 and 312 key factors of corruption crime which taking of bribe and bribery are allocated. So in compliance with part 1 of the article 311 of the Criminal Code of Kazakhstan the main subject of this crime is the person authorized on the accomplishment of the state functions or other person equated to it promoting such activity or inactivity in fact, patronized or tolerated on service. A data object of legal relationship is taking of money bribe, securities, other property, the property right benefits of property nature for itself or other persons for actions (failure to act) for benefit of the briber [1].

Materials and Methods

Therefore, as the corruption act nature it is possible to reveal illegal accomplishment of the certain actions which are in functional obligations of the person holding managerial state position for benefit of the person illegally provided to the above-stated person certain material benefits as payment for this illegal act [2]. At the same time, It should be noted that for the second person of corruption legal relationship who provided material benefits for illegal accomplishment of the state functions concerning it similar criminal liability is also provided by the provided part 1 of the article 312 Criminal Code of Kazakhstan where bribery to the person authorized on accomplishment of the state functions, or to the person equated to it personally or through the intermediary threatens with criminal liability certain measure of punishment, for perfect criminal action is provided in compliance with which [3].

However, in old edition of the Criminal Code of Kazakhstan there are defects concerning circumstances at which this crime has been committed. Instead the system of the main and additional punishments prescribed for these crimes which in effect are approximately similar is provided [4].

So, for example, in the table stated below the punishment system for these types of crimes recognized socially dangerous is provided in compliance with Criminal Code of Kazakhstan old edition

Table 1

The punishment system for crimes recognized socially dangerous.

№	DIRECT SENTENCE	BRIBERY	GIVING BRIDE
PRIMARY SUNCTION			
1	Penalty	From 700 till 2000 MCI	from 700 till 2000 MCI
2	Salary or other income of convict for period	From 7 months till 1 month.	from 5 months till 7 months.
3	Correctional labour	--------	till 2
4	Restraint	till 5 years.	till 3 years.
5	Detention.	till 5 years.	till 3 years.
6	Arrest	--------	from 3 till 6 months.
Applied punitive measure			
1	Divestment to hold position or engage in activities	till 5 years.	till 5 years.
2	Property confiscation	Including or not.	Including or not.

At the same time in old edition of the Criminal Code of Kazakhstan special focus was given to subjects which are illegally receiving material benefits for accomplishment of functions by authorized state bodies and also to methods in case of which corruption act was made.

Table 2

The punishment system for crimes in corruption.

№	SUBJECT	TYPE OF PUNISHMENTS	PERIOD
1	Official	Violent convict	from 3 till 7 years.
		Deprivation of the right to occupy	till 7 years.

		certain positions or engage in certain activities	
		Property confiscation.	including
2	Person hold major public position	Violent convict	from 5 till 10 years.
		Divestment to hold position or engage in activities	till 7 years.
		Property confiscation.	Including .
№	METHOD	PENALTY	
1	Extort	Violent convict 7-12 years with confiscation of property	
2	group of persons by previous concert or organized group	Violent convict 7-12 years with confiscation of property	
3	Grand larceny	Violent convict 7-12 years with confiscation of property	
4	Grand larceny	Violent convict 7-12 years with confiscation of property	
5	Unlimited number	Violent convict 7-12 years with confiscation of property	

At the same time in the 311 article note concerning taking of bribe accurate definition of the sizes of large and especially large sizes of bribe is given. Thus as the large amount of taking of a bribe the amount of money, cost of securities, other property or benefits of property nature exceeding five hundred monthly settlement indicators [5] is recognized. As for the sizes of especially large amount especially large size of a bribe the amount of money, cost of securities, other property or benefit of property nature which exceed two thousand monthly settlement indicators [6] are recognized. At the same time accurate determination is also applicable to insignificance of the sizes as for example in the note of the same article it is provided that isn't a crime owing to insignificance and is pursued in a disciplinary or administrative order obtaining for the first time by the person authorized on accomplishment of the state functions, or equated to it by the person of property, the right to property or other property benefit as a gift in the absence of the preliminary arrangement for earlier made lawful acts (failure to act) if the cost of a gift didn't exceed two monthly settlement indicators [7].

Conclusion

Thus, it is possible to establish the fact with which into accord in old edition of the Criminal Code of Kazakhstan clear measures and criteria with which in compliance it is possible to be guided in case of execution by authorized bodies of internal affairs of policy on execution of corruption crimes that can't be told about other article – the 312th bribery are adequately brought. Concerning this article it is necessary to introduce amendments and in more detail to consider circumstances under which the crime was committed.

Background.

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SECTION 12. Geology. Anthropology. Archaeology.

CORDED WARE CULTURES BETWEEN VALDAI AND ALTAI-BAIKAL REGIONS: ON THE AREAL OF DISTRIBUTION OF Y-DNA HAPLOGROUP R1A1-M17 IN NEOLITHIC EURASIA

Abstract: *The paper deals with the spread of Corded Ware Cultures in the Western and Eastern Eurasia. According to the last genetic data (R1a1-M17 in Neolithic Baikal area) the hypothesis on their relation is proposed.*

Key words: *Neolithic, haplogroup, Corded Ware, R1a1-M17 (M-198).*

Language: *Russian*

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КУЛЬТУРЫ ШНУРОВОЙ КЕРАМИКИ ОТ ВАЛДАЯ ДО АЛТАЯ И БАЙКАЛА: ОБ АРЕАЛЕ РАСПРОСТРАНЕНИЯ Y-ГАПЛОГРУППЫ R1A1-M17 В НЕОЛИТИЧЕСКОЙ ЕВРАЗИИ

Аннотация: *В данной статье рассматриваются культуры шнуровой керамики Востока Евразии. На основании последних генетических данных (обнаружение R1a1-M17 в неолите Прибайкалья) делается предположение о родстве культур шнуровой керамики Востока и Запада Евразии и анализируются возможные культурные и переселенческие миграции.*

Ключевые слова: *гаплогруппа, неолит, шнуровая керамика, R1a1-M17 (M-198).*

Introduction

С недавних пор обнаружено, что одним из первых в мире очагом развития гончарного ремесла и появления глиняной посуды был регион Дальнего Востока, в том числе японская культура Дземон, самые ранние образцы керамики которой датируются XIII тысячелетием до н.э. [1] (хотя другим, естественно, не менее важным центром неолитической революции остается Ближний Восток [2]). Влияние Дземона распространялось на регион Приамурья, где в это время существует громатухинская культура и немного более поздняя новопетровская [3, с 63-68], из которых керамика первой примерно на 1000 лет моложе керамики Дземона, а в Приморье древнейшими памятниками с керамикой являются Черниговка (около 8770 года до н.э.), Устиновка-3 (около 8000 года до н.э.), Перевал (древнее 6300 лет до н.э.) [4]. Т.о. очевидно существование в XIII-VII тысячелетиях до н.э. крупного дальневосточного очага неолитической революции, и вопрос о пределах влияния данного очага, который, по многим данным, древнее ближневосточного, является интригующим вопросом истории неолита (поскольку иные очаги неолита либо вовсе не существуют, либо до сих пор не обнаружены). Вопрос очень важен, поскольку именно в дальневосточных культурах имеются древнейшие образцы техники шнуровой керамики. Для истории же Запада одним из ключевых вопросов является происхождения и влияния культуры Европейской шнуровой керамики, устойчиво ассоциируемой с индоевропейскими языками и распростнанением Y-гаплогруппы R1a1-M17 (M-198).

Materials and Methods

Прежде, чем искать аналоги дземоновской и громатухинской керамике в отдаленных регионах, следует обратить внимание на близлежащие регионы – в первую очередь на

Китай, Корею и Сибирь. В китайской провинции Хунань в 1988 году было обнаружено самое древнее стационарное поселение человека в регионе – Пэнтоушань, которое вместе с поселением Башидань образует ранненеолитическую культуру Пэнтоушань, датируемую эпохой 7500-6100 лет до н.э. [5, p 63], но, по данным радиоуглеродного анализа, найденные здесь древнейшие остатки культурного риса датируются 8200-7800 гг. до н.э. [6, p 298]. Среди находок обнаружена шнуровая керамика, самая ранняя форма керамики, родственная культуре Дзёмон. Это последнее обстоятельство весьма существенно в качестве маркера культурных связей для поиска возможных влияний Дземона за пределами Восточной Азии в целом. Гончарное искусство корейской эпохи Чыльмун (3500-2000 лет до н.э.) проявляет сильное сходство с гончарной культурой Дзёмон [7, p 137]. Правда, первые гончарные изделия на Корейском полуострове датируются 8000 годом до н.э., однако, поскольку миграционные влияния происходили с севера, не исключено, что здесь также влияние Приамурья и Приморья. Наконец, в Сибири в конце IV – начале III тысячелетия до н.э. обнаруживаем белькачинскую неолитическую культуру: «белькачинцы свои глиняные сосуды изготавливали способом выколачивания. При формовке сосуда применяли деревянную колотушку, у которой рабочая часть была обмотана крученым шнурком. Четкие оттиски последнего оставались на внешней поверхности сосудов. В научной литературе сосуды, изготовленные колотушкой с обмотанным шнурком, называют шнуровой керамикой. Остатки шнуровой керамики найдены не только на территории Якутии, но и на Дальнем Востоке и, даже, в Северной Америке. Исходя из этого, исследователи предполагают, что носители белькачинской культуры могут быть родоначальниками некоторых индейских племен Северной Америки» [8]. Белькачинская культура датируется промежутком 4100 ± 300–2160 ± 150 до н.э. [9].

Описав целый круг культур со шнуровой керамикой, продолжающих технику, наработанную еще в Дземоне, мы не можем обойти стороной вопрос об их вероятной этноязыковой принадлежности. Точку зрения на принадлежность самой культуры Дземон протоайнским племенам эпохи неолита в настоящее время является общепринятой [10; 11]. Не стоит исключать, что появление керамики типа Дземон в китайской провинции Хунань связано с миграцией каких-либо айноязычных групп. Громатухинская и ноповетровская культуры относятся к региону обитания современных нивхов, хотя, несмотря на то, что нивхи, вполне возможно, один из самых древнейших слоев населения Дальнего Востока, не вполне ясен вопрос о времени их первоначального расселения на Нижнем Амуре. Этот вопрос еще требует прояснения.

Ситуация уже более точна с языком белькачинской культуры. Если углубиться в вопрос о языках белькачинской и родственных ей культур бассейна Лены и прилегающих районов, то гипотеза о связи белькачинской культуры с какими-либо индейскими племенами Северной Америки может рассматриваться в контексте т.н. дене-енисейской гипотезы – сопоставления енисейских языков совр. Среднего Енисея и целой языковой семьи Северной Америки, занимающей самые крайние северо-западные регионы, что может указывать на относительно недавнее появление денеязычных племен и синхронизацию их появления с временами существования белькачинской культуры. Если мы принимаем гипотезу о денеязычии неолитического населения Якутии, отличного в этом отношении от последующих слоев – юкагирского и эвенкийского [12, с 70-71], а также ассоциируем денеязычные племена с палеоенисейскими культурами центральноазиатского происхождения, то оказываемся в ареале сложных миграций племен неолитических и мезолитических культур зарзийского происхождения, охватывавших огромные пространства от Днепра до Южной Индии и Енисея.

Если западнее Енисея даже реликтов дене-енисейской языковой общности не осталось, то «восточный фланг» дене-енисейцев обозначен реально существующей в наше время языковой семьей на-дене, включающей две ветви: тлинкитский язык и атапаскские языки [13]. Карта языковых семей и макросемей доколумбовой должна была выглядеть следующим образом:

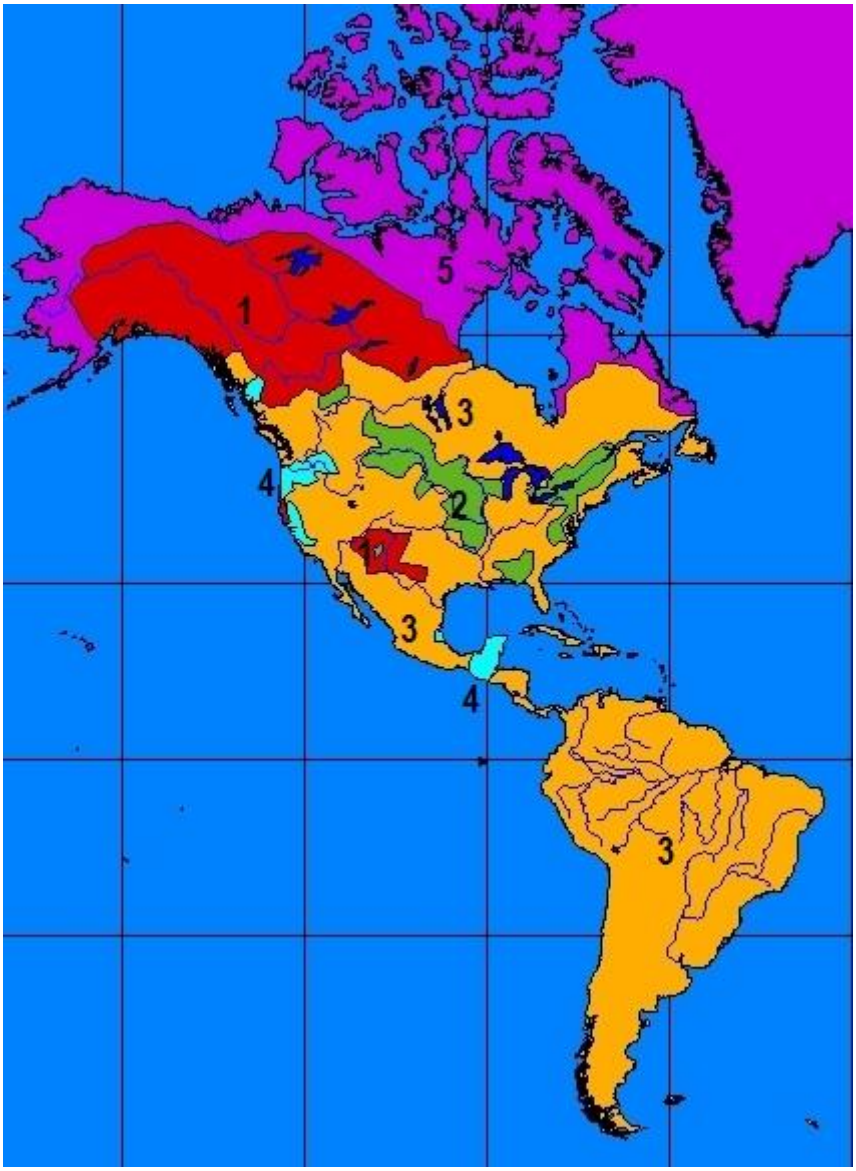

Рисунок 1 - Карта (В.В.Булат) вероятного расселения языковых семей и макросемей Доколумбовой Америки: 1 – семья на-дене, 2 – семья хока-сиу, 3 – америндская макросемья, 4 – фила пенути, 5 – эскимосско-алеутская семья.

На данной карте видно, что хотя часть индейцев на-дене проникли почти до границ Месоамерики, основная часть семьи расселяется сейчас и расселялась в последние века на крайнем северо-западе Северной Америки, и их расположение приводит к мысли о миграции носителей языков на-дене, как о замыкающей переселения индейцев из Азии в Америку. Говорить о конкретных временных параметрах этой миграции сложнее. Специалисты, выдвинувшие дене-енисейскую гипотезу, датировали существование единого праязыка дене и енисейцев поздним мезолитом, что в условиях Сибири может растягиваться на несколько тысячелетий, смотря по тому, говорим ли мы о южных зонах раннего неолита, либо о северных регионах пережиточного мезолита. Э.Вайда в 2012 году локализовал прародину дене-енисейцев между Амуром и Алданом [14], где после исчезновения палеолитической дюктайской культуры расселялись группы, относящиеся к сумнагинской мезолитической культуре [15, с 247-248] (маркером данной мигарции Вайда считает субклад Q1 Y-хромосомной гаплогруппы). Соотношение сумнагинской и последующей сыалахской культуры – сложный вопрос. Сыалахская культура (V тысячелетие до н.э.) создана пришельцами из Забайкалья [16; 17, с 296], которые частично вытеснили, частично ассимилировали ее [там же]. Сыалахские племена, как и племена развившейся на основе сыалахской белькачинской культурой, говорили,

по всей видимости, на дене-енисейских языках [18, с 83].

Поскольку есть все основания считать современных кетов-енисейцев, проживающих в Туруханском и Эвенкийском районах Красноярского края, реликтом некогда достаточно обширной этно-археологической общности, возникает вопрос о времени их появления в нынешних местах обитания, что хотя бы отчасти прояснит временные рамки миграции родственных кетам дене в Америку. В.Г.Волков в своей большой и обстоятельной статье «Древние миграции самодийцев и енисейцев в свете генетических данных», отмечая преобладание в генетике современных кетов и селькупов мужского субклада Q1a3 [19, с 80], описывает генетическую миграцию предков кетов на Средний Енисей из района Саян [там же, с 83] и датирует ее относительно поздним временем – эпохой существования самусьской и елунинской культур [там же, с 88] – т.е. II тысячелетием до н.э. Однако, существуют и более поздние датировки: «В литературе уже давно укрепилось мнение, что предки кетов относительно недавно мигрировали на Енисейский Север и формирование этого народа происходило на юге междуречья Оби и Енисея (Алексеенко 1994: 189). По мнению Е.А.Алексеенко, первые достоверно известные кетоязычные группы на рубеже эр проживали в горно-таежных районах Южной Сибири и Северо-Восточного Синьцзяна (Китай) (Алексеенко 1976: 180–184)» [там же, с 83], а «очагом первичной экспансии гаплогруппы Q1a3 являются территории, прилегающие к

Северной Индии, Афганистану и Ирану» [там же] – видимо, здесь речь идет все-же о мезолитических временах. В целом миграции предков кетов и селькупов (последние сменили свой язык на самодийский керамики) по версии В.Г. Волкова выглядит следующим образом:

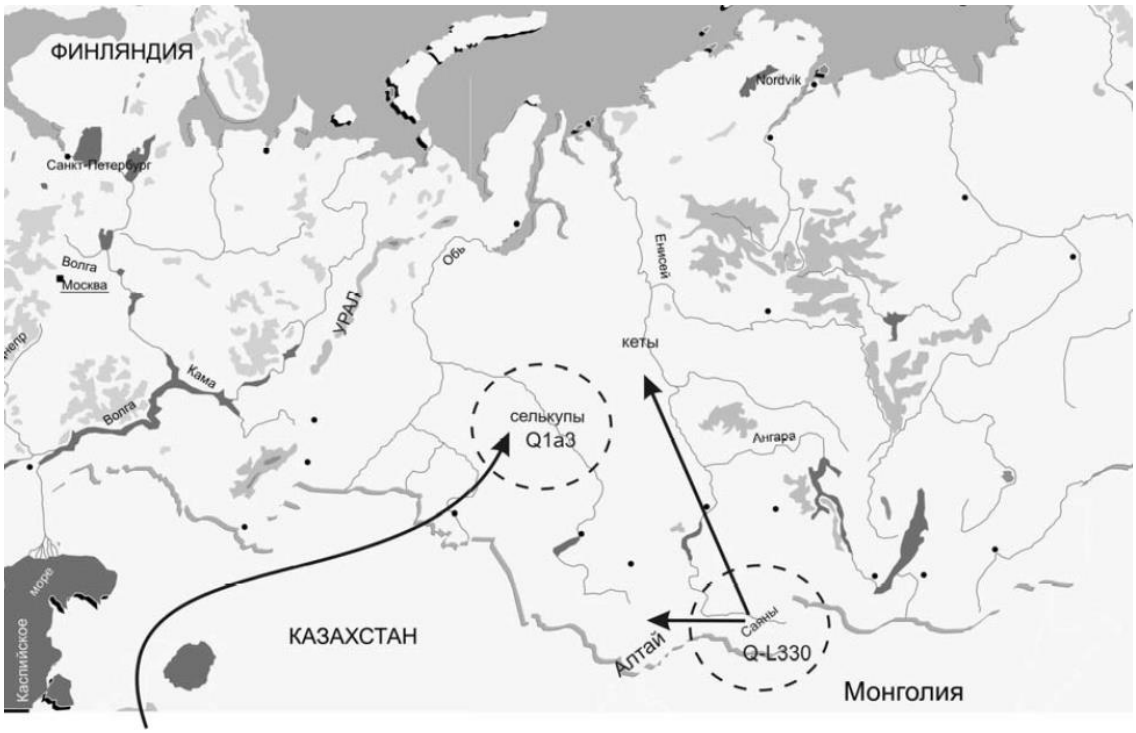

Рисунок 2 – Карта 2. Миграции древних енисейцев [там же, с 85].

Датировки миграций и географическое расположение денеязычных племен Америки вызывали даже появление гипотез о «непрерывной волне миграции» дене и эскимосов в III тысячелетии н.э. в рамках теории трех волн заселения Америки [20], тем более что присутствует определенная генетическая близость денеязычных групп и палеоэскимосов: «In summary, our model-free approach to analyze rare allele and haplotype sharing reveals that a fraction of Na-Dene Native Americans likely has a considerable proportion of Paleo-Eskimo ancestry, roughly from 10 to 30%. Virtually no other Native Americans demonstrated the same signal in our analysis, despite a large number of populations and individuals investigated» [там же]. Также зафиксировано существенное родство (в пределах 22-24%) племен атапасков с сибирскими популяциями, а древность этого родства оценивается в пределах 5000 лет до н.э. [там же].

Самым смелым выводом выше цитированной статьи является определение места палеоэскимосов в рамках сыалахской неолитической культуры и даже предположение об их денеязычии (либо принадлежности к дене-енисейскому языковому континууму) [там же].То есть мы имеем первое научно обоснованную на генетических данных гипотезу о сибирской локализации дене (белькачинская и сыалахская культура). А если следовать дене-енисейской гипотезе и выводам В.Г.Волкова, то прародина их лежит глубже в Азии в сторону юго-запада. Известный лингвист В.В.Шеворошкин еще одну заметную группу американдов причислил к сино-кавказцам – а именно вакашско-салишские языки [22, p 85-86], сблизил с северокавказскими языками и датировал их отделение относительно недавним временем – III-II тысячелетиями до н.э. [там же, p 88]. Сопоставляя эту гипотезу с выводами Волкова о локализации кетов в Центральной Азии, то родственные кавказцам вакаши и салиши, возможно, были выхвачены мигрирующими дене-енисейцами из Прикаспия и прилегающих районов Центральной Азии, т.е. региона не столь удаленного от Кавказа.

Однако, недавние исследования прибайкальской неолитической группы захоронений у поселка Локомотив в Иркутской области принесли сенсацию, которая показала неполноту гипотезы о дене-енисееязычном характере населения неолита Прибайкалья. Хотя у подавляющего числа мужских захоронений (особенно, поздних) оказалась уже надежно предсказуемая Y-гаплогруппа Q1a3, в некоторых из них, причем более ранних, была выявлена R1a1-M17. характерная для культур шнуровой керамики Восточной Европы. «Through SNaPshot multiplex PCR amplification, Y-chromosomal haplogroups were obtained from male individuals in the four cemeteries. Individuals from Lokomotiv and Shamanka II were found to possess haplogroups K, R1a1 and C3, and individuals from Ust'-Ida and Kurma XI were found to belong to haplogroups Q, K and unidentified SNP (L914)» [23, p III]. «Despite the low analytical success rate, Lokomotiv demonstrated the highest degree of heterogeneity in Y-chromosomal haplogroup distribution with four individuals belonging to haplogroup K-M9, two to haplogroup R1a1-M17 and one to haplogroup C3-M217» [23, p 112]. «The two males belonging to haplogroup R1a1-M17 come from cluster 2 (LOK_1980.006 and LOK_1981.024.01), and the only male (LOK_1985.031.02) carrying C3-M217 Y-chromosomal haplogroup comes from cluster 4» [там же].

Работа датирует 2 находки R1a1 в могильнике Локомотив ранним неолитом – т.е. 6000-4800 гг до н.э. (калибровано) [23, p II, 235]. Эти датировки можно сопоставить с датировками находок R1a1 на противоположном конце Евразии. Древнейшая ископаемая гаплогруппа R1a1-M17 прослежена у обитателей верховий Западной Двины в отрогах Валдайской возвышенности (Смоленская область) в эпоху неолита (3000- 4000 гг до н.э.) на стоянке Сертея VIII. А это – область устойчиво ассоциируема с индоевропейцами или их предками. Поэтому, вопрос о дене-енисейском характере байкальской шнуровой керамики не может быть однозначно решенным. И встает вопрос о родстве двух групп культур шнуровой керамики – западной и восточной.

Поскольку технологические рубежи влияния тех или иных древних центров отнюдь не всегда совпадают с культурно-лингвистическими, проблема прибайкальского неолита в настоящее время не может быть удовлетворительно разрешена. Прибайкалье не относится к зоне ранненеолитических культур Амура и Японских островов, в погребениях китойского времени (VI-V тысячелетия до н.э.) керамическая посуда встречается редко [17, с 274]. Гребенчатая керамика встречается в китойской культуре [там же], есть и в глазковской культуре (стоянка Улан-Хада [24, с 331]). В статье авторов [25] собраны и систематизированы определенные основания считать гребенчатые культуры Западной Евразии возможным признаком локализации носителей R1a1 в неолите. То есть наличие R1a1-M17 в некрополе Локомотив может быть признаком миграции носителей гребенчатой керамики далеко на Восток. В пользу этого говорит и наличие там же митохондриальной гаплогруппы U5a, древнейшие находки которой – в Европе [23]. Сумпаньинская культура, появление первых, еще мезолитических, памятников которой относится к VIII тысячелетию до н.э., и которая относится к традиции гребенчатой керамики [25, с 73] (последняя непрерывно разбавлялась влияниями технологии накольчатой керамики с юга [17, с 261]), могла оказать влияние на Прибайкалье. Некоторые исследования позволяют связать происхождение гребенчатой керамики Прибайкалья не с юго-восточным, а с западным направлением: «В настоящее время керамика с пунктирно-гребенчатым орнаментом зафиксирована в компрессионных слоях на территории Приангарья, Верхней Лены и Западного Забайкалья (Синицына, 1986; Зубков, 1982). Подобная керамика (с рядом региональных отличий) отмечена в поздненеолитических комплексах поселений Среднего Енисея (Савельев, 1989; Макаров, 2005)» [26, с 80]. Таким образом, возможно, что с гребенчатой

керамикой носители R1a1-M17 проникали в Прибайкалье с Запада.

Не так давно, авторы настоящей статьи [9] высказали осторожное предположение, что техника европейской шнуровой керамики могла прийти из ее восточного ареала. Текущие генетические данные показывают, что в какой-то момент неолита область распространения R1a1 могла занимать всю линию Валдай-Алтай-Байкал. При этом древнейшей находкой R1a1 выглядит находка в Карелии (5500 до н.э.), затем – Локомотив (древнейшие R1a1-M17), затем – Сертейская (тоже R1a1-M17). То есть вполне вероятно, что шнуровая техника могла прийти либо в процессе обратной миграции, либо технического обмена.

В прибайкальском неолите выделяются две линии развития – исаковско-серовская и собственно китойская – разумеется, возникает вопрос об их дифференциации и происхождении. Для китойской культуры подчеркивается доминирование именно сетчатого и шнурового орнамента: «Керамика встречается в захоронениях крайне редко. Это круглодонные сосуды, гладкостенные, а также украшенные сеткой-плетенкой и отпечатками шнура» [26]. То есть если группа носителей R1a1-M17 именно в Сибири могла перейти с гребенчатой техники производства керамики на шнуровую. В [9] авторы привели цитату, согласно которой в Прибайкалье именно в эпоху китойской культуры происходила депопуляция. «Of interest in this context is the fact that the analysis of Neolithic cemeteries of the Baikal region has suggested that a depopulation event occurred in that region during the 6th millennium BP (Mooder et al., 2006)». Известно, что в днепро-донецкой культуре (предшествует шнуровой керамике в Восточной Европе) была отмечена митогаплогруппа C, нехарактерная для Восточной Европы ни в бронзовый век, ни сейчас, но характерная для Сибири и Прибайкалья. То есть гипотеза о перемещении технологии шнуровой керамики с Востока на Запад (возможно с ее носителями) имеет право на существование. Возможно связи шли и косвенным путем, через Центральную Азию, и в культурном обмене могло принимать участи и дене-енисееязычное население.

Conclusion

Делать выводы еще преждевременно, но предварительный анализ новых данных и попытка сопрячь достижения генетики и археологии между показывает, что между западным и восточным ареалами шнуровой керамики могли быть как контакты, так и родство отдельных групп носителей.

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SECTION 21. Pedagogy. Psychology. Innovations in the field of education.

CHARACTERISTICS OF PRINCIPAL WAYS AND METHODS OF CORRECTION OF AGGRESSIVE BEHAVIOUR AMONG TEENAGERS

Abstract: *Brief analysis of principle approaches to the correction of aggressive behavior is revealed in the article; also, the problem of aggressive behavior diagnosis is represented. The author pays special attention to the tasks of correction work with teenagers and to the special course and methods.*

Key words: *aggressive behavior, aggression, aggressive actions, correction of aggressive behavior, correction methods.*

Language: *English*

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Introduction

Correctional work to overcome aggressive tendencies in the behavior of adolescents is based on the results of psychological and educational assessment, which is necessary to complete in two main directions:
1) identification of the existing level aggressive tendencies in adolescents as well as the most typical forms of aggressive behavior used by them to overcome difficult situations;
2) identification of the main factors responsible for the emergence and manifestation of aggression in the behavior of adolescents.

To detect the presence of aggressive tendencies in the behavior of adolescents using various methods such as observation, discussion, expert surveys of teachers, parents, peers, various projective techniques and drawing tests (method of "House - a tree - man" (BCD), "Figure of nonexistent animal " and etc.); "Test the hands" (Hand-test) E. Wagner (1971), a questionnaire Bass-Darky (1957), the scale of aggressiveness in the method of T. Leary (1954) and others.

Materials and Methods

The most popular method for the determination of the existing level of aggressive tendencies, as well as the most typical forms of aggressive behavior is a Bass-Darkyquestionnaire.

The second area of psycho-pedagogical diagnostics involves identifying the main factors that lead to the appearance and manifestation of aggressive behavior in teenagers.

Given the diversity of the causes of aggression in this age, a number of basic tasks diagnostic work in this directionis allocated:
• study of personality characteristics of aggressive adolescents (diagnostics of temperament, character traits, peculiarities of motivational, emotional, volitional, moral spheres);
• study of the features of family education (total family atmosphere, especially the relationship between family members, especially educational influences, leading type of family education, character traits parents, parental attitudes toward children);
• Diagnosis teen interpersonal relationships with peers (stoichiometric status of the child in a group of peers, especially its attitudes to them, the degree of satisfaction of its need for communication and interaction with them, especially the perception of adolescent peer groups);
• study the features of a teenage relationship with teachers (relationship style, especially pedagogical influences, especially attitudes to each other, and so on. D.).

As pointed out by A.K Osnitsky, psycho-pedagogical help in overcoming and preventing aggressive behavior in teenagers above all should be focused on the factors of personality development and characteristics of the environment, which in this age can become its main causes [4. S. 66].

So, if the basis of aggressive behavior of teenagers are certain irregularities in the emotional-volitional or moral spheres, then corrective actions should primarily be directed at overcoming these violations.

If the main reason for the emergence and manifestations of aggression in adolescent behavior are the disadvantages of family education, the leading trend of psycho-pedagogical correction should be working with aggressive teen parents.The main objectives of this work are: the harmonization of existing interpersonal relationships; enrichment and reorientation of the joint emotional experience of parents and children; correction of existing views, attitudes, parental attitudes towards the child; development of an effective style of interaction with children, as well as the Correction of individual character traits of parents, causing a child's choice of tactics training.

Psychologist work with aggressive teen parents is carried out in the form of conversations, lectures, training a variety of group classes. Recent suitably provided with parents from several families with similar problems. Training participants are offered a variety of tasks, exercises, joint implementation, and the discussion of which helps develop new pedagogical skills, helps parents acquire new experiences interact with their children through the practical training of communication skills, corrects the views and attitudes of parents towards their children. With skillful leadership psychologist training group is transformed into a kind of mutual aid and support groups.

Correctional work to overcome this or that personality disorder in a child's parents is often complicated by the lack of basic psychological and pedagogical knowledge. Therefore, for the purpose of correction and prevention of aggressive behavior in adolescents is necessary to conduct psychological and pedagogical education of parents.

Special role in the appearance and manifestation of aggressive tendencies in the behavior of teenagers play difficulties in interpersonal relationships with peers. As we have noted, the aggressiveness of adolescents in this case can serve as a way of self-affirmation, the attempt to occupy a certain status in the group relevant to him or as an emotional reaction to the self-doubt, anxiety, feelings of loneliness [8.s23].

In this connection special importance is the work on the harmonization interpersonal relationships in a team of peers, create the conditions for widening and deepening of interpersonal connections, status claims meet teens, their needs for self-expression and self-affirmation. First of all this work should be carried out in pupils group.
In a number of psychological and pedagogical work indicates that this is the age qualitatively complicated informal classroom structure and relationships classmates acquire a distinct intimate and personal character and different selectivity and stability. Of course, this is no reason to ascribe high student group referentiality in the eyes of every teenager. It depends largely on how this group of opportunities opens up for a teenager "in terms of manifestations of his personality, the satisfaction of his communication and status claims, and ultimately in terms of its implementation needs to be an individual and to be perceived by others as such."

Organization of the system socially approved activity of teenagers not only strengthens their personal relationships, but also promotes the development of business cooperation between them. During this activity the teenager produced organizational skills, formed a sense of duty, ability to sacrifice personal interests for the sake of a common cause, which helps to overcome self-centeredness and aggressive tendencies. The collective forms of work on the implementation of significant cases produced demanding, self-criticism, self-control, and other important personal qualities.

Of course, it is necessary to attract teenagers to the planning of this activity, so that it appeared to them as self-organized.At the same time, as noted by L.M Semeniuk, it is advisable to distribute organizational matters so that there was "an asset", and occasionally the head of each business was changed and its responsible organizer.
In addition, no less important is the interest of every teenager in the results of this activity. "It is of interest, - writes L.M Semeniuk - involves adolescents in terms of collective concerns by allowing to find its rightful place in the peer group, meeting the needs of an aggressive child in recognition of their rights and opportunities, thereby leveling the aggressiveness" [6. S. 68].

Therefore, training students understanding, the ability to plan and carry out joint socially meaningful activities, to teach to the cooperative and interaction on various levels and help in the formation of the student team are important conditions for personal development and the prevention of aggressive tendencies in adolescents. Certainly, the leading role in this process belongs to the teachers. Therefore, it is advisable to inform the teachers about the individual psychological features of the person of teenagers with behavioral and learning effective ways to interact with children by means of conflict resolution and “igroterapiya” (“playing" a critical

and conflict situations in the sphere of interpersonal relations).

Most of the difficulty in carrying out remedial measures is the lack of personal interest in the adolescent change his own behavior. In order to overcome this resistance, I.A Furmanov recommends discussion with your teen age-related problems, personal difficulties that arise in relationships with others, and offer psychological assistance in their solution by eliminating the main obstacles to the achievement of the objectives [8.s13].

After obtaining the consent of the teenager remedial work necessary to build in stages successively performing the following tasks: expansion of teen information about self and the problem of aggressive behavior; realization and evaluation of their own behavior and its consequences, both for the teenager, and for the people around him; the formation and consolidation of a conscious intention to change its own undesirable behavior and strengthen the confidence of a teenager in his own ability to do so; Search and training alternative ways of behavior and emotional response to situations that provoke aggression; the formation and strengthening of confidence in the ability of the teenager prevent recurrence of aggressive behavior in all conditions.

The prevention and correction of aggressive behavior is also used by the general methods of education: the formation of consciousness, forming behavior, incentives and special methods of pedagogical correction aimed at correcting deviant behavior: subjective pragmatically, natural consequences, reimbursement method, work method, the "explosion".

Conclusion

1. Psycho-pedagogical assistance aimed at correction of aggressive behavior of teenagers, primarily focused on the main factors that contribute to its occurrence and manifestation:
a) correction of existing violations in the emotional and volitional, motivational and moral spheres;
b) work to overcome violations of family education (correction of the parent plants, the development of an effective style of interaction with children, harmonization of the existing intra-family relations, etc...);
c) the harmonization of interpersonal relations in a group of peers (creating conditions for strengthening interpersonal relations, satisfaction with status claims adolescents, etc.)..;
d) correction of pedagogical views and attitudes toward aggressive students; training teachers effective ways to interact with them.

2. The main objectives of correctional work with aggressive teenagers to overcome violations are teaching them methods of regulation of emotional state, as well as the formation and consolidation of alternative ways of behavior in situations that provoke aggression. The most effective psycho-pedagogical correction of aggressive tendencies in the behavior of adolescents is carried out in form of group work.
3. The correction of aggressive behavior used by the general methods of education: the formation of consciousness, forming behavior, incentives and special methods of pedagogical correction aimed at correcting deviant behavior: the subject-but-pragmatic, natural consequences, reimbursement method, work method, the "explosion", as well as psychological and psychotherapeutic methods, including socio-psychological and role training, “geshtal-therapy”, psychodrama, and so on.

Thus, the theoretical analysis of the problem of correction of aggressive behavior of teenagers showed the presence of fundamentally different approaches to the understanding of the essence and nature of aggression, which indicates multidimensional, enigma studied phenomenon of multifactor conditionality as a behavioral act of aggression and aggression as personality traits.

The most productive, in our opinion, it is an approach, outgoing discharged from conditionality aggressive manifestations in personal characteristics and behavior is not so much organic as social and psychological reasons. This fact is revealed clearly in children adolescence, when particularly pronounced dependence of personal formation not from a genetic predisposition, but from a qualitative change in social position.

The negative factors of the social situation of the adolescent development (disadvantages of family education, the negative climate in the family, as in the system of formal and informal relationship with the adult world, the psychological discomfort in pupils group and the negative impact of reference asocial informal groups, strained relations with teachers and so on. d.) create the objective conditions for the emergence and manifestations of aggressive behavior of teenagers as well as for the formation of aggressiveness as a stable personality traits .

The growth of destructive tendencies among adolescents makes it necessary to develop the most effective methods for correction of adolescent aggression involving an impact not only on the infringement itself, but primarily on the factors causing it.

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SECTION 21. Pedagogy. Psychology. Innovation in Education

DEVELOPMENT OF BENCHMARKS ERTSGAMMING MATHEMATICAL MODELS OF EDUCATIONAL ACTIVITY FORMATIVE RESEARCH EDUCATIONAL FACILITIES

Abstract: *The main directions of analysis of development benchmarks ertsgamming mathematical models of learning activities formative research educational facilities relativetional criteria of life, cycling, systematic and phasing, which form a basising cell education space, as well as the use of the twelve pointed star Ertsgam we are on the submission ertsgamming principle which determines the foundations pedagogometric through shaping matrix methods, graph theory and games hyperspace living, psychological and educational activity theory, psycho-pedagogical system analysis and the theory of the formation of mental actions.*

Key words: *basicity, formative research, pedagogometric matrix, graphs, ability to live, work, play, cycle, system, phasing, principle ertsgamming, star Ertsgammy.*

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РАЗВИТИЕ БАЗИСНЫХ ПОКАЗАТЕЛЕЙ ЭРЦГАММНОСТИ МАТЕМАТИЧЕСКИХ МОДЕЛЕЙ УЧЕБНОЙ ДЕЯТЕЛЬНОСТИ ФОРМИРУЮЩЕГО ИССЛЕДОВАНИЯ ОБРАЗОВАТЕЛЬНЫХ ОБЪЕКТОВ

Аннотация: *Рассмотрены основные направления анализа развития базисных показателей эрцгаммности математических моделей учебной деятельности формирующего исследования образовательных объектов относительно критериев жизнедеятельности, цикличности, системности и этапности, которые образуют базисную ячейку образовательного пространства, а также применение двенадцати конечной звезды Эрцгаммы относительно представления принципа эрцгаммности, который определит основы педагогометрики через формообразование матричными методами, теории графов и игр гиперпространства жизнедеятельности, психолого-педагогической теории деятельности, психолого-педагогического системного анализа и теории формирования умственных действий.*

Ключевые слова: *базисность, формирующее исследование, матричная педагогометрика, графы, жизнедеятельность, деятельность-игра, цикличность, системность, этапность, принцип эрцгаммности, звезда Эрцгаммы.*

Introduction

Развитие базисных показателей эрцгаммности математических моделей учебной деятельности формирующего исследования образовательных объектов следует рассматривать как реализацию всех основных эрцгаммных объектов образовательного пространства: звезды Эрцгаммы гиперпространства жизнедеятельности (E1); целостно-системного цикла жизнедеятельности (E2); звезды Эрцгаммы системного анализа (E3); проявления двенадцати этапов и форм познавательного гиперпространства жизнедеятельности относительно образовательного процесса (E4) [1].

Каждый образовательный объект с признаком эрцгаммности, независимо от

целевого назначения, выполняет собственную функцию психолого-математического представления, имеющего соответствующий показатель целостного развития относительно характеристик собственной собственной значимости. Каждый глобальный объект (Е1, Е2, Е3, Е4) образовательного пространства выполняет синфазно три функции: ориентировки, исполнения и контроля каждой фазы развития образовательного процесса. Поэтому можно сформировать матрицу инвариантного состояния образовательного процесса.

E_{10}	$E_{1и}$	$E_{1к}$
E_{20}	$E_{2и}$	$E_{2к}$
E_{30}	$E_{3и}$	$E_{3к}$
E_{40}	$E_{4и}$	$E_{4к}$

Таблица 1 – Матрица инвариантного состояния образовательного процесса.

Materials and Methods

Математической моделью целостно-системного цикл жизнедеятельности является образ циклического графа. Пусть X – множество вершин (12) – предметные и деятельностные компоненты, V –множество ребер, соединяющие вершины (12) – время освоения и применения знания. Граф G=(X,V) является заданным, если дано множество его вершин X и способ отображения Γ этого множества в самого себя. При этом можно выделить часть ЦСЦЖ и представить её в виде подграфа G_A графа G=(X, Γ). Если подграф $G_A = (A, \Gamma_A)$ целостно-системного цикла имеет лишь часть вершин графа G и образует пару элементов, то является базисным. Например: (НЦСС) и (ЦСВД) образуют множество A, вместе с дугами, соединяющими эти вершины: $G_A = (A, \Gamma_A)$, где

$$A \subseteq X, \quad \Gamma_A x = (\Gamma x) \cap A.$$

Если учесть, что любой деятельностный компонент имеет три составляющие: ориентировочные, исполнительные и контрольные части действия, то возникает частичный базисный граф G_Δ по отношению к графу G=(X, Γ), в котором содержится только часть дуг графа G. Возникают условия: $G_\Delta = (X, \Delta)$, где $\Delta x \subseteq \Gamma x$ [2].

В графологическом представлении целостно-системного цикл жизнедеятельности применяем понятия пути, длины пути и контура. Для описания графа цикла жизнедеятельности используем матрицы смежности и матрицы инцидентности. Представляем временные параметры сетевых графиков ЦСЦЖ и их нахождение; определяем длину критического пути, выявляя событие с нулевыми резервами времени, устанавливаем его топологию. Параметры развёртывания событий ЦСЦЖ исследуются из условий: если $t_p(i)$ – ранний срок поступления события, то определяется продолжительностью максимального пути, предшествующего этому событию.

$$t_p(i) = \max_{L_{ni}} t(L_{ni})$$

если j имеет несколько предыдущих событий, то

$$t_p(j) = \max_{i,j} \left[t_p(i) + t(i,j) \right].$$

Пусть $t_П(i)$ – поздний срок поступления события

$$t_П(i) = t_{кр} - \max t(L_{ci}),$$

где L_{ci} – любой путь, следующий за i-м событием, т. е. путь от i-го до завершающего события цепи. Если i имеет несколько последующих путей или событий j, тогда

$$t_П(i) = \min_{i,j} \left[t_П(j) - t(i,j) \right].$$

Резерв времени на формирование устойчивой структуры ЦСЦЖ определяется из условия: $R(i) = t_П(i) - t_p(i)$ Данный параметр показывает допустимый период времени на полное представление цикла по задержке наступление этого события, не вызывая увеличение срока выполнения комплекса развития [3].

Процесс принятия решений в условиях определенности при представлении ЦСЦЖ имеет трудность в существовании нескольких критериев, по которым сравниваем исходы. Если имеется совокупность критериев: , $F_1(x), F_2(x), \ldots, F_n(x), x \in X$, то обобщенный критерий $F_o(x)$ можно представить в виде взвешенной суммы

$$F_o(x)=\sum_{i=1}^{n} W_i F_i(x)$$

где W_i – вес соответствующего критерия. Тогда определяем

$$\max_x F_o(x).$$

Поэтому задача оптимального представления ЦСЦЖ имеет вид

$$\max_{x\in X} F_1(x)$$

при ограничениях

$$F_2(x)\geq F_{2\,don}\ldots F_n(x)\geq F_{n\,don}.$$

Моделируем анализ ЦСЦЖ принятия решений в условиях риска и неопределенности. Из нескольких критериев для выбора оптимальной стратегии представлений ЦСЦЖ рассматриваем критерии: Вальда (критерий осторожного наблюдателя), который дает гарантированный выигрыш при наихудшем состоянии среды; критерий Гурвица; критерий Лапласа, для которого если неизвестны состояния среды, то все состояния ЦСЦЖ считают равновероятными; критерий Сэвиджа (критерий минимизации сожалений), то есть величине, равной изменению полезности результата развития целостно-системного цикла жизнедеятельности при данном состоянии среды относительно наилучшего возможного процесса воспитания личности.

Любое целостно-системное учебное действие имеет три базисные компонента: ориентировочный, исполнительный и контрольный, которые определяют основные направления математического моделирования ЦСУД. Множество элементов учебного действия можно записать в виде $\grave{A}=\{a_i\}, i=1,2,\ldots,n$, где a_i – *i*-й – элемент системного действия, n – число элементов учебного действия. Каждый элемент ЦСУД характеризуется *m* конкретными свойствами z_1, z_2, …, z_m, которые однозначно определяют его в данной системе. Совокупность всех *m* свойств элемента учебного действия устанавливает его состояние: $z_i=(z_{i1},\ldots,z_{im})$. Между базисными компонентами ЦСУД существует связь - множество зависимостей свойств одного элемента от свойств других элементов системы учебного действия. Множество связей между элементами учебного действия можно представить в виде $Q=\{q_{ij}\}, i,j=1,2,\ldots,n$. Зависимость свойств элементов учебного действия имеет двусторонний взаимосвязанный характер. Это определяет структуру системы учебного действия - множество элементов системы и связей между ними: $D=\{A,Q\}$ [4].

Структура ЦСУД зависит от статического и динамического состояний. В условиях статического поведения учебного действия связь между ориентировочным и контрольным компонентами представляется как связь между функциями входа $X(t)$ и выхода $Y(t)$ системы без учета предыдущих ее состояний: $Y(t)=F_B[X(t)]$, где F_B – функция выходов системы. В условиях динамического состояния учебного действия система зависит не только от функций входов $X(t)$, но и от функций переходов,

$$Y(t)=F_B[X(t),Z(t),z(t-1),\ldots].$$

В данном случае можно определить обобщенный показатель качества целостно-системного учебного действия как вектор $Y=\{y_1,y_2,\ldots,y_n\}$, компоненты которого есть частные показатели отдельных свойств ЦСУД. Размерность *n* определяется числом системных свойств учебного действия.

При определении обобщенного показателя качества целостно-системного учебного действия будем применять не натуральные частные показатели, а нормированные значения. Это обеспечивает приведение показателей к одному масштабу: $y_i^{HORM}=\frac{y_i}{y_i^*}$, $i=1,2,\ldots,n$, где y_i^* – некоторое «идеальное» значение *i*-го показателя ЦСУД. Любое целостно-системное учебное действие можно принять за идеальную систему, если её гипотетическая модель, удовлетворяет всем критериям качества: $Y^*=\{y_1^*,y_2^*,\ldots,y_3^*\}$. Тогда выделяется область адекватности ЦСУД - окрестность значений показателей целостно-системных свойств учебного действия. Радиус адекватности имеет нормированное значение, которое определяется зависимостью: $\delta\subseteq\frac{|Y^{don}-Y^*|}{|Y^*|}$.

Все критерии качества целостно-системного учебного действия определяются тремя типами: критерий пригодности $K^{приг}$ (радиус области адекватности δ соответствует допустимым значениям всех частных показателей); критерий оптимальности $K^{опт}$ (существует хотя бы один частный показатель качества y_i^j, значения которого принадлежат области адекватности с оптимальным радиусом $\delta^{опт}=0$) и критерий

превосходства $K^{прев}$ (если значения частных показателей качества принадлежат области адекватности с оптимальным радиусом по всем показателям). Все критерии качества ЦСУД обладают свойствами представительности, эластичности и простоты [5].

При прогнозировании процесса развития целостно-системного учебного действия применяем фактографический метод - метод наименьших квадратов (МНК). При этом анализируем процесс наращивания базисных компонентов ЦСУД относительно целостности и системности - ориентировки, исполнения и контроля через систему временного ряда. Поэтому в дальнейшем ЦСУД будет развиваться в соответствии с законом: $S = \sum_{i=1}^{n}\left(y_i^* - y_i\right)^2 \Rightarrow \min$, где y_i^* – расчетные значения исходного ряда, y_i – фактические значения исходного ряда, n – число наблюдений. С учётом адаптации к новым условиям необходимо ввести коррективы в прогнозные оценки развития ЦСУД через коэффициенты дисконтирования, которые характеризует изменение ценности информации во времени ($\beta_i \le 1$): $S = \sum_{i=1}^{n}\beta_i\left(y_i^* - y_i\right)^2 \Rightarrow \min$. При прогнозной оценке устанавливается и дальность прогнозирования: $\tau = \frac{\Delta t}{t_X}$, где Δt – абсолютное время упреждения, t_X – величина эволюционного цикла развития ЦСУД [6].

В общем случае математическая модель целостно-системной коммуникативной деятельности (ЦСКД) представляет многоуровневый образ, соответствующий различным социальным уровням – от личностных до международных отношений, при которых происходит обмен двенадцатью (n=12) предметно-деятельностными отношениями. В зависимости от социальной ситуации субъекты коммуникативной деятельности, зная на различном уровне структуру целостно-системного цикла жизнедеятельности (ЦСЦЖ), применяют свои возможности относительно позиционных игр, их стратегии, нормальной формы игры и контролем процесса соответствия. При этом позиционная игра n лиц устанавливает топологическое дерево Г с установленной вершиной А, начальной структуры игры, функцией выигрыша, которая устанавливает каждой финишной позиции дерева Г n-вектор, разделение структуры всех компаундных позиций дерева Г на n + 1 множеств S_0, S_1 ,... , S_n, - множества последовательности [7].

Стратегия игрока i , который воспроизводит структуру ЦСЦЖ, есть функция, которая устанавливает перенос каждому информационному множеству S_i^j этого игрока некоторый индекс из I_i^j . Множество всех стратегий игрока i есть сумма величин $\sum i$. Если результаты случайных действий известны в вероятностном отношении, то представляем функции выигрыша как математическое ожидание при условии, что игрок i применяет стратегию $\sigma \in \sum i$ и применяем обозначение:

$$\pi(\sigma_1, \sigma_2, \ldots, \sigma_n) = (\pi_1(\sigma_1, \ldots, \sigma_n), \pi_2(\ldots), \ldots, \pi_n(\sigma_1, \ldots, \sigma_n))$$

Функцию $\pi(\sigma_1, \ldots, \sigma_n)$ на множестве всех возможных значений переменных $\sigma_1, \sigma_2, \ldots \sigma_n$ можно выразить в форме соотношения или в виде n-мерной таблицы n-векторов. Тогда формируем n-мерную таблицу нормальной формой игры Г.

Любая целостно-системная коммуникативная деятельность, как игра Г, разложима в некоторой позиции X относительно ориентировочного, исполнительного и контрольного компонентов , если не существует информационных множеств, которые содержали бы позиции из двух множеств одновременно: 1) X и все следующие за ней позиции; 2) остальные позиции дерева игры. В этом случае надо выделить подигру Γ_x, состоящую из X всех следующих за ней позиций, и факторигру Г/X, состоящую из всех оставшихся позиций плюс X, и функция выигрыша имеет вид: $\pi_X\left(\sigma_1 | \Gamma_X, \sigma_2 | \Gamma_X, \ldots, \sigma_n | \Gamma_X\right)$ [8].

Целостно-системная коммуникативная деятельность может принимать форму антагонистической игры, если существует $(p_1, \ldots, p_n)$ нулевая сумма удовлетворяет условию $\sum_{i=1}^{n} p_i = 0$. Тогда n-компонента вектора выигрышей определяется остальными $n-1$ компонентами. В целом, нормальная форма конечной антагонистической игры приводится к матрице А с числом строк, равным числу действий игрока I, и с числом столбцов, равным числу действий игрока II.

При построении ориентировочного компонента ЦСКД возникают смешанные стратегии игрока как вероятностное распределение на множестве его чистых стратегий всех составляющих цикла. В этом

случае, когда игрок имеет только конечное число m чистых стратегий, смешанная стратегия представляет собой m-вектор $x=(x_1, \ldots, x_m)$,удовлетворяющий условиям $x \geq 0$ и $\sum_{i=1}^{m} x_i = 1$. Если обозначить множество всех смешанных стратегий игрока I через X, а множество всех смешанных стратегий игрока II через У, и предположить, что игроки I и II участвуют в матричной игре A, то если игрок I выбирает смешанную стратегию X, а игрок II выбирает У, то ожидаемый выигрыш будет равен

$$A(x, y) = \sum_{i=1}^{m} \sum_{j=1}^{n} x_i a_{ij} y_j$$

или в матричной форме: $A(x, y) = xAy^T$.

Моделирование исполнительного компонента ЦСКД связывается с разработкой стратегией поведения, которые устанавливают набор N вероятностных распределений и задают возможные альтернативы в каждой информационной коммуникации. При этом возникает множество распределений A, что ни одно распределение из A не предпочитается обоими субъектами ЦСКД другому распределению из A, но для любого не входящего в A распределения ((*x, y); (a - x, b - y*)) в множестве A найдется распределение ((*x′, y′*); (a - *x′*,b - *y′*)), которое устанавливают оба субъекта ЦСКД [9].

Моделирование контрольного компонента ЦСКД определяется вектором значений игры, который задаёт n-вектор $\varphi[\vartheta]$, удовлетворяющий аксиомам Шепли, выделяющих базисные условия математического моделирования целостно-системной коммуникативной деятельности педагогометрического анализа. Степень устойчивости ЦСКД задаёт норму поведения в форме коалиционной структуры в игре n-лиц. При этом возникает разбиение $\mathcal{T} = (T_1, T_2, \ldots, T_m)$ множества N. Данная структура представляет разбиение множества N на взаимно непересекающиеся коалиции. Возникающая конфигурацией задаётся парой $(x; \mathcal{T}) = (x_1, \ldots, x_n; T_1, \ldots, T_m)$, где $\mathcal{T}$ - коалиционная структура, а *x* представляет собой n-вектор, удовлетворяющий условиям

$$\sum_{i \in T_k} x_i = v(T_k)$$

для $k = 1, \ldots, m$. Реализация выделенных условий приводит к установлению индивидуальной рациональности, выражающей системный тип ориентировки в целостно-системной коммуникативной деятельности и её математической модели [10].

Conclusion

Развитие базисных показателей эрцгаммности математических моделей учебной деятельности формирующего исследования образовательных объектов относительно различных методов математического моделирования количественных отношений множества эрцгаммных параметров, позволяет создать адаптивные процессы математического моделирования подготовки широкопрофильных специалистов и их личностных качеств.

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SECTION 30. Philosophy.

CHULPON'S CREATIVE WORK IN THE LEGACY OF THE AESTHETICAL THOUGHT OF MANKIND

Abstract: *In this article Chulpon's artistic-aesthetical activity who lived and created at the beginning of the XX century, was a great representative of Uzbek classical literature, jadid enlightener scholar, a translator and a playwright person, appeared in the difficult and complicated period of our history, whose selflessness based on beauty, majesty and creation on the grounds and gained immense prestige in the legacy of aesthetical thought of mankind, is had a conversation. Including, the author of the article shows through Chulpon's creative work that aesthetical culture has been spiritual factor in upbringing of high developed generation in development of a person in the period of jadids and now days. In the article Abdulkhamid Chulpon's creative work has been analyzed in detailed for perfection of this process. So far as today it was interpreted that he had been a real specialist in grace, a lover of beauty, a great master of word. In the article thorough ideas were given that Chulpon – a mighty representative's creative work of the Uzbek literature in the XX century was well known not only in Turkistan lands, even in Russia and a lot of foreign countries and his poetic, artistic works had a serious influence on mankind and Uzbek intelligentsia.*

Key words: *jadidism, enlightenment, Chulpon, aesthetics, nation, spirituality.*

Language: *English*

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Introduction

In the period which difficult social life and ca shade of clouds obstructing lights of the sun falling on head of our nation and our country more and more became stronger, Chulpon had not told his own wish-hopes in his hearts and dream, his ideal and view openly. He thought to wake up, bring up, put in motion around a drowsy nation wound different social political and economical chains on the basis of which way and ideal, even if his imagination, consciousness and ideal enjoy ideals and lifestyle of our nation matured for long centuries, there was no condition and ability in order to express them openly.

The heart must be a creator as a towel flutters in order to express artistic-aesthetical, philosophical regard like that with respect to life, social system and orders. Chulpon turned his love with respect to life like this, nation and its generation, its nature into strings of the heart and inspiration of creative work. For this reason, his artistic aesthetical feeling, ideas have been sealed up as a pattern of beauty in his each poetic and prose work. After Chulpon has not seen himself wanted and looked for beauty in social life, lifestyle of people, nature and society, he had only and only found beauty, grandiose, fine and wonderful beauty in single dream. Wishes, discontented dreams and aspiration in illusion seemed to be a pattern of beauty, bright ray lighting up the future for him.

Review of literature: Independence developed new regard and approach for spiritual legacy of jadid enlightenment, gave them opportunity of impartial estimation and of reflection withy outlook of period. But it has put issues of investigation of social, educational, historical, moral and aesthetical foundation of jadidism before the philosophers. As a result of this, after independence, view of jadid enlightenment and its representatives have been studied in the philosophical context. Including in the article, the social-philosophical basis of development of jadid motion in the investigation of philosopher scholars such as A.K.Aymatov, G.T.Makhmudova, B.Kasimov, Sh.Rizaev educational-moral view of jadid representatives and the most important of them, place in our national philosophical legacy of them have been analyzed scientifically.

The methodology

Steady aims and tasks of reforms carrying out in spiritual sphere in our republic has been made ideological principle as considering the leading scientific conception of the investigation was to regard with national literary legacy reasonably and, impartially and also conceptual approach to problems of perfection in processes of spiritual renovation. This new scientific conception enriches national values of people, its customs and life style with knowledge and vital philosophy which it has stored them itself and gives opportunity to work out all aspects of the problem which is studied on the basis of norm of newly estimation.

The results: thoughts and vies which Chulpon has reserved them for himself about urgent questions of literature and art as a theoretic of the aesthetics, are important for today, too. The results which have been got from the article to improve processes of developing national aesthetic thought expounding philosophical-aesthetic direction of realizing Chulpon's creative work and that it had solid place in the world literary-aesthetic fond, are distinct examples. The social-philosophical essence of artistic-aesthetical symbol in Chulpon's creative work has been analyzed while basing on national and common to all mankind values.

Abdulkhamid Chulpon's creative work appeared in the heavy and difficult period of our history at the beginning of the XX century, has a special significance.

If we analyze the legacy which the writer has reserved it for himself, we can notice that almost he has taken active more part in all spheres of culture but he has become famous for as a poet. He went under a powerful preventive of Uzbek literature of the XX century for people, his poems had influence on Uzbek intelligentsia seriously. Chulpon's was one of great poets who was able to create and has created a world of peculiar matchless poetry, too.

According to this view it is expedient to interpret Chulpon's creative work in context of a person – a creator – an enlightener in the aesthetics of jaded enlightenment.

Chulpon's creative work is bond up with the theatre directly. It is known that professional company of actors and theatres began to develop in our new Uzbek national theatres in the aesthetic culture of our nation at the beginning of the XX century. Jadid intelligentsias, who have dreamed triumph of freedom and progress, had turned their attention to the theatre as one of great means in way of upbringing while awaking a nation with light of enlightenment. Chulpon has made a valuable contribution to development of such those theatre companies of actors like other jadids. It is possible to say that only school itself was not sufficient for enlightenment in that period, because it was necessary to inquire about events of time, to want to know condition of motherland, a nation, it is daily life and the same need led Chulpon to the theatre and a press, too. So for as in Bekhbudiy's opinion "the nation needs a mirror that like, may it see its dirty trick and its fascination" [3, p.253].

Chulpon criticizes men who reproaches with people irrelevantly, flaunts its "ignorance" or its "lack of culture" unfoundedly about culture. It is to be observed that spectators often have not gone to some performances at 20s, according to this reason, a talk has spread that people does not go to the theatres. They tried to accuse people of that their cultural standards were low. Chulpon said his final opinion that "the same talk is not right that people does not go to the theatre. People go the theatre. But they have right not to go to puppet show which is called as a performance of the theatre, is strange to its spirit and to "western" woks which they cannot realize them. On the contrary, people go to the performances which attract them and are staged well" [2, p.24] while answering this talk sharply.

Chulpon's patriotism, feeling of national pride and sense of beauty have not prevented from estimating employees of culture, art, literature objectively. When it was necessary he has criticized shortages of culture and policy sharply, too, he has not ashamed to say lacks of lifestyle, its customs and in its heart openly at all. On the contrary, Chulpon does not agree with a doctrine about class character of art. We can know it through his following word "The riches, boybachas (the riches' sons), the children of turas (Mr. from high lineage), khonzodas (generations of khan) who spend his all age for nothing not working, carry along elegance of art in order to be bored from idleness: they play cholgu (an musical instrument), dance, make verses about love and read them. Besides they have five or six theatres like our "coliseum" in big cities. They enjoyed here buying art to money, gold. It is not that the stage does not show foolish life of high layer in the world, on the contrary it shows, but it shows to make spectators smell bitter and nasty smell, strings of cholgu plays some more resent but not crying because the riches danced for their enjoyment if was played with joy in order to make tired people happy in order to remind oppressed people of periods when they were oppressed by crying" [2, p.33].

Chulpon affirmed through his these opinions that art has made vital joys of men and their troubles reflect and sometimes men enjoyed stage works and sometimes cried. As G.Makhmudova said: "The Uzbek professional theatre appeared as fruit of movement of jadidizm glorifying ideas of enlightenment, national independence; gave opportunity people to use a new type of the world culture – stage works. It laid down the foundations to form and develop the national dramatic composition; the main theme in this dramatic composition was to take people out of mire of ignorance thank to

enlightenment and science, to prepare for new free life. Freedom of Uzbek women, their liberty and human merit were glorified in the stage first time, jadid drama, stage interpretations have developed on the basis of genre, theme, many-colored expression in primary performances yet; performances which had demonstrated fate of nation from daily themes to huge social tragedies, were staged; appearances of actors, producers and composers in the new style and jaded theatre laid down the foundations to develop the Uzbek professional theatre in the future" [4, p.111].

Chulpon looked for possibility of bringing nearer literature to art and he specified that the most acceptable way is truthfulness in order to reach it. The roots of truthfulness are in totality of characteristic peculiar to people. The writer said that it is art and literature which shows life of people in justice. Chulpon discusses about social essence of literature in the article titled "Adabiyot nadur" ("What is literature") published in the newspaper "Sadoi Turkiston" ("Sound of Turkistan") on June, 1914 and gives a) common to all mankind conclusion through an idea called "if a literature lives – a nation does", b) presents a new aesthetic principle of the literature.

In aesthetics of jaded-enlightenment Chulpon's a place of creative work is bond up with thoughts about art of theatre in many aspects. For example he appraised the Meirhold theatre highly and he wants the Uzbek theatre raise in the same level, too. He appraised Mannon Uygur's art highly about this direction; especially he interpreted questions of skill of an actor in aesthetics of theatre. Chulpon says that "paying attention to an actor is attention to a word, if a beautiful word is spoken beautifully. It is not possible that a performance has no influence, the actor who plays excellently and skillfully may he know to speak excellently and skillfully". Summarizing his work on a role in his article titled "Sahna sirlariga oshno sanatkor" ("An artist learned secrets of the stage") devoted to Lutfulla Narzullaev's creative work, he affirms that it is aesthetic requirement, that's, not proper for art but it is general phenomenon: Each creative is remade once and for all, too. A poet's poem, a prose-writer's a novel or a story, composer's musical work, musician's execution; even a jeweler's a smooth ring and a fringe, a petty trader's splendid work …. All of these are made, matured and turns into valuable work with means of remaking" [2, p.39].

It is known that the stage is a sacred place for an actor. At the same time it is necessary not to forget that the spectators pay attention to an actor's outward appearance. According to this reason the producers take notice of this measure especially, too. If actor plays an image given to him skillfully, the spectator forms his aesthetic ideal in figure of that image. Because the spectator calls any of actors not with his own name but he begins to call him with an image which the same actor created. Of course it is actor's great achievement. He was worthy of love of people performing skillfully like that. The actor is one with his name, in spite of everything a role is whether positive or negative if he is charged an image of any of heroes, he acts them with enthusiasm. On the contrary if the actor cannot manage a role charged him, he does not act skillfully, the spectators do not receive him in spite of everything what merit he has. Chulpon interprets these aspects with a number of factors.

First – to change sounds when it is necessary fluent pronunciation of speech is taken into consideration. Because sound of the actor must reach all audience fluently and clearly to the right degree. Well then profession of the actor popularizes peculiar aesthetic culture and reflects it, too.

Second – decoration of the stage must be pictured very skillfully. If what picture a landscape in work has it is required to be shown the same one. If how the actor performances an image charged him, the spectators receive it so, because art of theatre appears before eyes of spectators and there are not a lot of possibilities in it as cinema has.

As is obvious from abovementioned two factors which require skill of art of theatre and profession of an actor, the writer personifies as a specialist of aesthetics in his discourse, articles and reviews informed about theatre of that period.

A.Aytmatov ties Chulpon's views connected with the aesthetics of the theatre and also about development of Uzbek professional theatre, especially skill of profession of an actor together with the writer's article titled "Moskvada ikki turk sanatkori" ("Two Turkish artist in Moscow"). Therefore not confining himself to inform about two Turkish artists living in Moscow, Chulpon approached this event much more widely and deeply. Why have two artists (Er Tugrul Muslimbek and a girl named Munira Ayub, well-known in stage as Nayira Nayir) come to Moscow yet? There are a lot of reasons and meanings under the question. Chulpon ties this case together with a role and significance of artistic condition of Moscow in progress of the world art in that time. Chulpon affirmed that today's Moscow goes in advance than all capitals of the West in many respects of loftiness of art of the theatre. It was clear from the article that Chulpon paid his attention to ideological artistic directions in art of the Russian theatre, too and he says that a new house of art appeared named "Meyrhold theatre" in a number of traditional theatres after the October Revolution. This is really revolution theatre; everything is new, at the same time its news is not permanent – "temporary things". For this reason when people speak about this establishment they call it "Istash teatri" ("the theatre of wish"), it is true interpretation, to speak the truth, "Meyrhold theatre" looks for new

way according to daily demand. Through these thoughts Chulpon estimates achievements in the theatre of the West, that's, in the Meyrhold theatre as a example of theatres endeavoring discovery in art.

Besides abovementioned thoughts specifies Chulpon's view concerning the aesthetics of theatre. Including the theatre in his opinion is a) means of upbringing; b) a factor of developing aesthetic values; c) to direct at enlightenment; d) to arouse love to art; e) to develop cultural level. Chulpon's aesthetic world is wide scale. Translation job is considered important aesthetic section of his activity. Intelligentsias of that period inquired about poet's translations at that time, too. Though it was not very perfection, Chulpon has translated a number of genial works though they were not very perfection. They are "Hamlet" (W.Shakespaer), "Princess Turandod (K. Gosse)", "The niggard" (Moler), "International" (E.Pote) and also the Uzbek reader at first looked through examples from prose of Russian classical writers such as A.Gogol, S.Turginev, A.Chexov, the novel "A mother" by M.Gorkiy, plays "Do moan", "The truth" by S.Tretyakov, "A man with a suet case" by A.Faykov, "An attack" by V.Yan through Chulpon's translations. Besides Chulpon's aesthetic view some more grew rich in process of translation of works which have important place in literature of people in the world, his literary critical works had essential significance in development of people's aesthetic thought, too.

As the article "Ulug Hindi" ("The great Indian") published in the 7-8th number of journal "Education and teacher" in 1925 seems to devote to insignificant question at first sight, that's, propagating image of the great Indian poet and thinker Rabindranat Tagor and at the same time Chulpon expressed his thought about which way progress of the Uzbek literature had to go on under pretence of Tagor. In the article works of Tagor were interpreted as examples of real art raised to ideal level and on the whole, the Uzbek literature means not only Uzbek writers, all in all it means young people of the East in the new literature who entered the literature at the beginning of the XX century. Chulpon made conclusion that these young people were ill with "lack of way" and he thought that "the old literature was sweet: its new literature is some more sweet: the literature of the West is sweet, too" [2, p.18-19].

While learning Tagor's creative work, Chulpon satisfied his works and he said that Tagor mainly was a golden bridge between the East and the West. Indeed, though Tagor's creative work was born and grew as a whole in India and it had matchless national colors, this creative work is far from national dogmatism. He united both traditions of the East and the West in his creative work. There are conventions, loftiness, wisdom peculiar to the East and also psychologism, operating on the basis of logic of characteristics, argument peculiar to the West in his poetry and novels. In consequence of this he described life of Indian people this way that the description has power which has an influence on the reader in the whole world despite his nationality and a place of inhabitance equally. Common all to mankind problems analyzed with high artistic value granted special profundity and peculiar philosophy to Tagor's works that the same qualities were very attractive for Chulpon.

Abdulkhamid Chulpon began both study of Uzbek Tagor and translation of Rabindranat Tagor's works into Uzbek language. Chulpon who has read Tagor's works with satisfaction and whose heart trembling as list which wind untwined, translated and printed his some poems in the journals "Revolution" and also "Education and teacher" in the 20th of the XX century. As well as the story "Suba" of Rabindranat Tagor was translated and printed by Chulpon in the 9-10th united number of journal "Education and teacher" in 1925. Tagor's majestic photo taken in side and whose bread covered his breast was printed. Chulpon's study of Tagor was seen from date which he marked under his articles written by him, under his poems and stories translated by him and they mainly coincide with 1924-25. An image of the eastern girl, captive oppressed, crying or given in marriage to a man who she did not love by force is available both in Chulpon's prose and his poetry and even in novel titled "Night and light day". It is possible to study the theme of "Suba" and in general Tagor's selections without difficulty by comparing with image of women and girls in Chulpon's creative work especially. It is appropriate to connect reason which the poet began translation of abovementioned story with harmony of themes. It is argument that Chulpon was a founder of school of Uzbek artistic translation. But it is known that the name of Chulpon was not shown as a translator in some works printed in the period of former Soviet government or was announced by others.

An important aspect of Chulpon's creative work is that his artistic works incarnates dramatic characteristics, pictures of sharp dramatic and tragedy roles not only his plays. A clear example of this is hi stories and especially it is possible to say his novel titled "Night and light day".

The novel "Night and light day" by Chulpon was created on the basis of primary stories. When this work was written there was not a big novel except two novels by A.Kodiriy. When Abdulla Kodiriy created "Utgan kunlar" ("The past days"), "Mehrobdan chayon" ("A scorpion from the altar") which were primary examples of genre of Uzbek novel, at first he has learned artistic knowledge from experience of genre of the East novel and works of Jurji Zaydon. Chulpon inquired in contrast to it, not only the East but about school of genre of the West

novel and he translated a story "Posumiy" ("Sultan of Magoras") by English writer whose name has been unknown to this time in the meanwhile, "Conflict between Ivan Ivanovich and Ivan Nikifrovich" by N.Gogol, a narrative "a story of hung seven men" by L.Andriev, as well as works of representatives of Russian classical literature such as I.Turgenev, A.Chexov, M,Gorkiy into Uzbek language. Acquaintance with literature of the West, that's, a genre of its novel opened new horizons of artistic creative works before Chulpon.

A.Aytmatov studied Chulpon's aesthetic views said, too that the writer was "the golden bridge" between the West and the East: "Chulpon mastered to demonstrate and develop his theoretical and practical principles with respect to artistic creation as a result of deep studying the classical literature of the East and the West, artistic aesthetic legacy of Russian and world writers. He was success to create a peculiar "bridge" uniting aesthetic thought of the East and the West, the world of artistic images with his original works and translations" [1, p.35].

It is known that the aesthetic culture has peculiar place in proving of its high development as structural part of spirituality of a person. Healthy aesthetic culture is closely bound up with high morality, free thought, creative talent and developing aesthetic respect to the world. For this reason, on the one hand, government of our republic has been paying great attention to improving great art of our people. On the other hand, it approaches to protect healthy view, free thought and values in spirit of national and common all to mankind value from spiritual threats and to preserve their original condition, to support them in the form of important political point.

Chulpon's some works were translated by well-known orientalist, academician A.N.Samoylovich in Russia. Chulpon's works reflected feelings of Uzbek people, its experiences and hopes and he became famous among the Uzbeks in foreign countries. But though these results are how much good, they do not mean that we still realized Chulpon. So realizing Chulpon is not to extol to the skies by praising him or to idealize him but realizing Chulpon is to understand art of word and interior conformity with a law of aesthetics of artistic creation deeply, to understand their reflection in the poet's thought. On the basis of that Chulpon informed that there were jesters such as Tantalone Trufaldino among common people in Italia and traditions which they have created, were very effective and he discussed that images of these jesters were enriched with new qualities and they have moved in Gossy's work. Not satisfying it, Chulpon reflected on interpretations of profession of his producer, Vaxtangov's creative work who died prematurely, staged with excellent skill in his article "Princess Turandot". The most important thing is that Chulpon has taken care of perspectives of Uzbek literature, has looked for ways of joining it a number of advanced literature of the world and he has understood that this way is to adopt leading traditions in the literature of both the West and the East creatively, to conduct leaning on their rich experiences. Chulpon expressed his ideas in his articles at the 20th many times consecutively. For example he spoke about Matyokub and Matyusuf Kharratovs' creative work in the article titled "Ota va bola sanatkorlar" ("A father and a child are artists") and on the way he brought forward questions of learning European music. In this place Chulpon conducted peculiar depth of thought. He refused to learn European music by the way for show and has opened ticklish aspects of the point: Chulpon wrote that "we need knowledge of European music. But knowledge of European music does not consist of a primary theory; it has very importance but difficult stages like harmony. People who entered the first stage of stairs of knowledge of European music if do not climb the following stairs, they can not do things in the musical sphere with this unfinished knowledge" [2, p.20].

As well as realizing Chulpon's aesthetics is to inculcate his great common all to mankind ideas, his high human feelings on heart, to see beauty of nature and majesty of a man through Chulpon's eyes, to feel them with Chulpon's heart.

Thoughts and views which Chulpon has reserved them for himself about urgent questions of literature and art as a theoretic of the aesthetics, are important for today, too. Taking care of formation and development of professional Uzbek theatre, he wrote dramas, translated works of world and Russian classical writers, had an influence on art of the theatre with his articles directly; he brought forward problems such as approaching way of progress, life of people and its traditions, making use of the world culture and preparing for national actors, truthfulness in the stage and natural characteristics in acting.

Conclusion

Aesthetic consciousness, aesthetic sense, aesthetic dream is reflection of the social life, they have important role in the structure of relations among men, but Chulpon's creative work led to ways to development aesthetic views and artistic thought of people. Following that spiritual foundation, abovementioned thoughts recognizes an influence of movement of Turkistan jadid – enlightenment on renovation of aesthetic view of people and place of Chulpon's creative work.

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SECTION 30. Philosophy.

SOME MORAL FEATURES OF UZBEK PEOPLE`S NATIONAL HERO JALAL AD-DIN MANGUBERDI

Abstract: *In the article are researched some moral scales of Jalal ad-Din Manguberdi`s personal character, who is one of the best-estimated historical figures, one of the founders of patriotic feelings in the moral-historical heritage of Uzbek people. The author shows patriotic feelings of the man, who sacrificed his life for pure faith, patriotism and humanitarianism, purity, knowledge and wisdom, justice and religion, by scientific-historical methods.*

Key words: *Jalal ad-Din Manguberdi, humanitarianism, patriotism, spiritual heritage, moral values, spirituality, courage, brevity, despotism, occupation, independence.*

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Introduction

Ideal, ideological, scientific, cultural, religious and moral values, world-outlook, traditions, customs and relationships are the youngers` base of spiritual heritage in the society. Cultural values and spiritual heritage have been servicing for the society as the great source of spirituality.

Despite continued strong ideological pressure for a long time, people passed on from generation to generation in their historical and cultural values, and has managed to preserve its own traditions.

The first days of independence created by our ancestors for centuries bring very great, the rich spiritual and cultural heritage of the state policy has become a very important level. Many of the great generals in the history of humanity lived. Alexander the Great, Julius Caesar, Charlemagne, Genghis Khan, Jalal ad-Din Manguberdi, Temur Malik, Amir Temur, Napoleon Bonaparte, Simon Bolivar, as every one of the commanders of the glorious nation, and, in general, have a place in the history of mankind. The above-mentioned commanders were destructive or constructive, fair or unfair policy that vary from one another. Military history does not only researches the role of those rulers, but their military strategies.

Genghis Khan, who conquered about half of the world, was also the first defeat of our common witness to the historical sources.

The thousand-year history of foreign occupation of our Motherland, the evil forces to protect our nation's freedom and honour of the great events in this struggle for the sake of preserving the courage and the courage of the great names over the centuries in his bright memory. National heroes such as Jalal ad-Din Manguberdi, Najm ad-Din Kubra, Amir Temur left an indelible mark on the history of national heroism. One of the heroism is heroism of Jalal ad-Din.

Materials and Methods

After the Independence, the ruler of Khorezm Jalal ad-Din Manguberdi, who was a patriot skilled commander, has also been servicing as scientific research object. His patriotism based on the very deep and strong ethnic-linguistic and cultural roots.

Jalal ad-Din Manguberdi inherit the broken kingdom. The next ten years in the life of the Khorezm state recovery against the Mongol invaders in the way of glorious, sometimes the fight is full of tragic events. About Manguberdi, his life and struggles were written by historians. Of course, it is the most comprehensive book is Shahab ad-Din al-Nasavi`s ‘Sîrat us-Sultan Jalal ad-Din Manguberdi’.

In addition, Ota Malik Juwayni, Ibn al-Asir, Juzjoniy, Ibn Bibi, Ibn Vosil and other historians wrote a lot of interesting information about Jalal ad-Din`s lifetime. And also, there are lots of facts about him in Georgians and Armenians sources. Shahab ad-Din al-Nasavi describes the commander writing: 'He (Jalal ad-Din) was swarthy, medium height, according to his speech he was Turk, but he also spoke Persian'.

He can be said the lion among lions, talented riders in the world. He was gentle nature, never got angry and cursing. He was a very serious man, but lots of uprisings had influenced the nature of the period. He tried to improve the living conditions of citizens, but stresses period, the government had been forced to use violence. 'Help comes only from Allah' was written on his military flags.

Genghis Khan, who had almost never lost in the battles, was seriously concerned by our great ancestor – Jalal ad-Din's unbelievable victories.

Jalal ad-Din`s skill, talent and justice, a high sense of patriotism could be seen in his every battle against the Mongol army. Jalal ad-Din`s these natural characters reflected in their struggle against the yoke of the Genghis Khan and his occupation.

In particular, when Jalal ad-Din attacked to the castle of Valiyon, Genghis Khan sent Takajuk and Malghur, who were one of his major generals of Genghis Khan`s troops, to beat Jalal ad-Din. But after a 3-day battle brought them to defeat more than 1,000 Mongolian soldiers were killed, the surviving part of the soldiers went away by jumping the Panjshir River, and they demolished the bridge. That was the first great Jalal ad-Din`s victory against Mongolian invasion. Despite this, Genghis Khan sent Shiki Khutukhu with an army of 45 thousand men to stand against Jalal ad-Din Manguberdi. Victory was Jalal ad-Din Manguberdi`s at the battle near Parvan. The first time in the history of military tactics, Jalal ad-Din stood against the enemy's cavalry on the foot beside a horse. It was one of the military tactic method. The defeat made Genghis Khan, who had not known a serious loss until that time, collect a main part of his army and be a commander upon it on himself.

Genghis Khan gathered a large army to beat Jalal ad-Din. In the battle near the city of Ghardiz, Jalal ad-Din beat the frontier part of Genghis Khan`s soldiers. But Jalal ad-Din returned to the Sind river, because of having less soldiers than Genghis Khan`s. Genghis Khan's army surrounded the opportunity to go crossed Jalal ad-Din Manguberdi. The battle, which has been written in gold letters by western historians, between Jalal ad-Din and Genghis Khan`s army began in the morning of November 24, 1221, and lasted for three days. When Ishchi Kutukhu nuyan, one of Genghis Khan`s generals, came bowing his head to Genghis Khan`s palace, Genghis collected his army and went to the struggle on himself against Sultan Jalal ad-Din. Jalal ad-Din did not want to begin the battle with Genghis Khan, whose soldiers more by lots of numbers than Jalal ad-Din`s, and went from Ghazni city to the Sind river. Jalal ad-Din made a great effort to prepare boats to swim to another bank, and to return the commanders, who had gone away from Jalal ad-Din`s troops, when he came to the edge of the river. But the enemy stood against finishing those tasks. Jalal ad-Din started a battle against Mongol soldiers by force. Because he was between the river and Mongolian invaders. Seeing Jalal ad-Din in the difficult position, Genghis Khan ordered to catch him alive.

Sultan felt this bad intentions, Jalal ad-Din chose a way to the Sind river. He jumped into the river by 20 feet height (6 m 10 cm) holding a flag in one hand and a shield in another hand, and swan to the other side. Genghis Khan wanted to pursuit Jalal ad-Din, but he stopped his solders. On November 25, 1221, Jalal ad-Din swam to the other bank with 4000 his soldiers and went to inner part of the desert. This desert has been called Jalaly till nowadays. According to Mirzo Ulugbek's 'History of the four realms', Genghis Khan said being surprised by Jalal ad-Din`s courage:

Thinking about Jalal ad-Din`s position and his solving to the great problem, Sohibqironi A`zam Chingizkhoni muazzam (The great King of greats Genghiz Khan the great) was really surprised.

Poetry (content):

The great of greats (Genghis Khan) was glad to see Sultan (Jalal ad-Din)`s action. And he said: 'Since the universe was creature, there has not been born a man like Jalal ad-Din. He is like a lion in the wilderness, victorious warrior, a river fish (shark) as courageous. How come, no one will be appreciated, there is no conflict alike. But he taught brevity to be itself. He opened his brave hands in front of fortune (that is to say, he was not afraid of accidents of fortune). There is no escaping from him by brevity. Everything is God`s, who is the greatest one, whatever You do or not.

Seeing Jalal ad-Din`s brevity, Sohibqiron (the great king, Genghis Khan) was very shocked, and glorified Jalal ad-Din, and said to himself sons: "Every father needs to the son like him, who can rescue from two accidents: the water and the fire!' Sultan (Jalal ad-Din) has been narrowed lots of stories about his brevity, and every son must learn them!"[3, pp.183-184].

After that Genghis Khan understood perfectly that he was faced the enemy, who was equal with him in power and mind. And Genghis Khan prepared all things to prevent Jalal ad-Din. A few days later, Jalal ad-Din gathered 7 thousands soldiers. In 1220, Genghis Khan sent Turbay Tuqshin and Bola Nuyon with 20 thousand people to Jalal ad-Din. Them approached to the castle of Multan, but they did not

beat the castle and they could not stand in the hot weather, they returned. Sultan Jalal ad-Din occupied the cities of Dvin and Lori. Leaders of Surmary city agreed to be under Jalal ad-Din`s flag. In September, 1227, Jalal ad-Din won Taynol Nuyon, one of the Mongols` generals, in the village of Sin, which was situated 30 chakirim (about 30-35 miles) far from Isfahan. Later the general said about Sultan Jalal ad-Din: 'He was real brave man of his modernity, he was leader of all his same-age-people [1, p.112].

About Jalal ad-Din his personal secretary, historian Nasafy writes: "Jalal ad-Din was dark-skin, medium height, according to his speech he was Turkic. And he also knew Persian perfectly. I must write about his courage, that he was the most powerful lion among the powerful lions. He held his words, never held a grudge, and was frank, righteous person. He was a serious person. He never smiled. At the very most, he hardly smiled. He hated injustice. Jalal ad-Din was very confident, very brave, never confused in critical positions, was courageous and brave commander ..." [5, p.11].

Khorezmshah Sultan Jalal ad-Din, whose extraordinary courage and unbreakable will impressed Genghis Khan, according to historian Shahob ad-Din an-Nasafy, was one of the great commanders of his time, the great lion among lions, the most courageous among brave men. He devoted his short, but eventful life`s half to struggle against the plague of the century – Mongolian invasion [5, p.77].

The war against Genghis Khan, which was on the bank of the Sindh river, is very popular among historians, and it has been an object of lots of scientific researches. In particular, according to the British orientalist G. Raverty and Russian scientist and traveler G.E. Grum-Grjimaylo, since Jalal ad-Din jumped into the river, it has been called Chuli (Juli - desert) Jaloli, which means the desert of Jalal ad-Din. And also, some orientalists, who travelled in Mongolia in the beginning of the XX century, wrote plenty of interesting information. There is mausoleum of Genghis Khan in Edjen Khuru, which is in Inner Mongolia (Inner Mongolia - now the People's Republic of China). There is held lots of ceremonies devoted Genghis Khan`s spirit. At first, they mention Genghis Khan`s victory against Jalal ad-Din, and they pray to the divine forces for receiving it [6].

At the 800 anniversary ceremony of Jalal ad-Din the President of the Republic of Uzbekistan Islam Karimov estimated Sultan`s courage, patriotism highly. According to the President, Jalal ad-Din is not only Khorezm`s pride, but he is the pride of Uzbekistan, he is the symbol of patriotism, which helps stand against to evil invaders, he is an evidence, that proves our might which beats enemies` wrath. The brevity and courage of this patriot man give us full rights to live proud. The President of Uzbekistan Islam Karimov said: 'The man who unites people under one flag, who thinks about his country`s future, who estimates others` good intention as own ambition, who can protect his own nation from evil forces, may trace indelible mark in the history. That is true.

Jalal ad-Din Manguberdi is a symbol of such courage and exemplary figures.

Sultan Jalal ad-Din teaches us to love blue sky and peace life of our country, to protect our descendants, who replace our social position in life, and lots of meritorious actions [2].

In 1998, the Uzbek government adopted the order 'About celebration of Jalal ad-Din`s 800 anniversary of birth' to immortalize his memory and to respect his spirit because of his courage in the battle against Mongolian invaders and his patriotism. According to the order, a statue of Jalal ad-Din was made in Khorezm, a lot of highways, squares, public enterprises and others named after him. A historian Nasafy, who spent all his life with Jalal ad-Din, dedicated to him his work, which is named 'Siyrat as-Sultan Jalal ad-Din Manguberdi' (History of Sultan Jalal ad-Din), Maksud Sheikhzade, popular Uzbek-Azerbaijanian writer, wrote a play 'Jalal ad-Din' (1943). Plenty of documentary films, epics, plays, which were dedicated to Jalal ad-Din, have been made. On August 30, 2000, the Order 'Jalal ad-Din Manguberdi' was established [4, p.538].

Being successful in reforms and restoration of spiritual heritage is the important element in development of the country. As you know, over the centuries the people of high spirituality, justice, education such noble qualities developed in close coordination with the teachings of Eastern philosophy and religion. In turn, these philosophical and moral teachings enriched from the genius of our people.

Conclusion

Today our military patriotism, which is main part of our spirituality, should be developed according to these philosophy and moral courage of our ancestors.

Taking into account the views expressed above can provide the following summary:

First, the phenomenon of the spiritual heritage of the Uzbek people, national heroes, and there are many people who collect samples of military patriotism. Because, since the beginning our people have been trying to deserve to the divine power, which is in their vein, have been bringing their sons up as brave, honest, courage men.

Secondly, it can be said according to historical facts, brevity is not the feature, which can be seen at everyone`s character, but it requests a specific readiness, in which man can give even his life for developing his country.

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