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ЕУАЗИЯЛЫҚ ӨЗЕКТІ ЗЕРТТЕУЛЕР ЖУРНАЛЫ**

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МИРОЛЮБИВЫЕ И АГРЕССИВНЫЕ ПАТТЕРНЫ КОММУНИКАЦИИ
В СЕВЕРНЫХ И ЮЖНЫХ РЕГИОНАХ КАЗАХСТАНА:
ПСИХОЛОГИЧЕСКИЙ АНАЛИЗ

Аннотация

В статье рассматриваются особенности проявления миролюбивых и агрессивных паттернов коммуникации среди представителей северных и южных регионов Республики Казахстан. Выбор указанных регионов обусловлен необходимостью изучения влияния исторических, социокультурных, демографических и коммуникативных факторов на специфику межличностного взаимодействия. Следует подчеркнуть, что сравнительный анализ регионов носит исключительно научно-исследовательский характер и не предполагает их противопоставления, формирования оценочных суждений или установления превосходства одной социальной группы над другой. Исследование направлено на выявление особенностей коммуникативного поведения и факторов, способствующих формированию миролюбивых и агрессивных стратегий общения в различных социокультурных условиях. Актуальность исследования обусловлена возрастающей значимостью конструктивного межличностного взаимодействия в условиях социальных трансформаций, цифровизации коммуникативного пространства, расширения межкультурных контактов и роста социальной мобильности населения. Особое внимание уделяется изучению миролюбия как самостоятельного психологического феномена, выступающего важным ресурсом социальной стабильности, профилактики конфликтности и гармонизации межличностных отношений.

Ключевые слова: миролюбие, агрессия, коммуникативное поведение, миролюбивая установка, эмпатия, толерантность, региональные особенности.

Введение

В условиях стремительных социальных изменений, цифровизации общественных отношений и расширения межкультурного взаимодействия особую актуальность приобретает проблема формирования конструктивных моделей межличностной коммуникации. Современные процессы глобализации сопровождаются не только расширением возможностей социального

взаимодействия, но и ростом конфликтности, распространением различных форм агрессивного поведения, снижением уровня социальной терпимости и усилением коммуникативной напряженности как в реальном, так и в виртуальном пространстве.

На фоне возрастающей социальной динамики способность личности выстраивать эффективное взаимодействие, основанное на уважении, сотрудничестве и взаимопонимании, становится важнейшим условием сохранения социальной стабильности и гармонизации общественных отношений. В связи с этим возрастает интерес исследователей к изучению факторов, способствующих развитию миролюбивых форм поведения и культуры ненасильственного общения.

Для Республики Казахстан данная проблематика имеет особую значимость. Казахстан представляет собой полиэтничное и поликультурное государство, характеризующееся разнообразием исторических, культурных, языковых и социальных традиций. Региональные особенности развития страны оказывают существенное влияние на процессы социализации личности, формирование ценностных ориентаций и моделей коммуникативного поведения.

Особый научный интерес представляет сравнительное изучение представителей северных и южных регионов Казахстана. Исторические особенности формирования населения, различия в этнокультурной структуре, уровне урбанизации, характере социальных связей и преобладающих культурных нормах могут оказывать влияние на выбор коммуникативных стратегий и способы разрешения межличностных противоречий.

Следует подчеркнуть, что сравнительный анализ регионов осуществляется исключительно в научно-исследовательских целях и не предполагает противопоставления отдельных групп населения либо формирования оценочных суждений относительно особенностей их поведения. Исследование направлено на выявление закономерностей формирования коммуникативных стратегий личности в различных социокультурных условиях.

Несмотря на значительное количество исследований, посвященных агрессии и конфликтному поведению, миролюбие как самостоятельный психологический феномен остается недостаточно изученным. Большинство существующих работ рассматривают миролюбие исключительно как отсутствие агрессии. Однако современные направления позитивной психологии позволяют рассматривать его как самостоятельную интегративную характеристику личности, обладающую собственной структурой и механизмами формирования.

Проблема агрессии занимает центральное место в современной психологии личности и социальной психологии. Существенный вклад в разработку данной проблематики внесли З. Фрейд, К. Лоренц, А. Бандура, Л. Берковиц, А. Басс и другие исследователи.

Согласно теории социального научения А. Бандуры [3], агрессивное поведение формируется в процессе наблюдения за моделями поведения и последующего воспроизведения усвоенных способов реагирования. Агрессия усваивается посредством подражания, подкрепления и социального одобрения.

Л. Берковиц в рамках когнитивно-неоассоциативной теории [4] рассматривал агрессию как результат негативных эмоциональных состояний, возникающих под влиянием фрустрации, стресса и неблагоприятных внешних воздействий.

В современной психологии выделяют физическую, вербальную, косвенную, реактивную, проактивную и аутоагрессивную формы агрессии. Особое значение для исследования коммуникативного поведения имеет вербальная агрессия, проявляющаяся в оскорблениях, обвинениях, угрозах, сарказме и других формах деструктивного общения.

Развитие позитивной психологии привело к существенному расширению научного интереса к изучению личностных ресурсов, обеспечивающих психологическое благополучие человека и устойчивость социальных систем. Работы М. Селигмана, К. Петерсона, Э. Динера [1] и других исследователей показали необходимость изучения не только факторов дезадаптации и психологических нарушений, но и позитивных качеств личности, способствующих гармоничному взаимодействию с окружающим миром.

В рамках данного подхода миролюбие может рассматриваться как важнейшая просоциальная характеристика личности, обеспечивающая развитие доверия, сотрудничества и социальной сплоченности. В отличие от традиционного понимания миролюбия как отсутствия

агрессии, современные научные подходы позволяют трактовать его как активную систему ценностей, установок и моделей поведения, ориентированных на достижение взаимопонимания и конструктивное разрешение конфликтов.

Миролюбие тесно связано с развитием эмпатии, эмоционального интеллекта, толерантности, коммуникативной компетентности и социальной ответственности [5]. Наличие данных качеств способствует снижению вероятности агрессивных реакций и повышает готовность личности учитывать интересы других участников взаимодействия.

В настоящем исследовании миролюбие определяется как интегративная характеристика личности, отражающая устойчивую ориентацию человека на сотрудничество, уважение достоинства другого человека и предпочтение ненасильственных способов разрешения конфликтов.

Структура миролюбия включает три взаимосвязанных компонента.

Когнитивный компонент:

- ◆ принятие многообразия взглядов и мнений;
- ◆ уважение к альтернативным позициям;
- ◆ ориентация на взаимопонимание.

Эмоциональный компонент:

- ◆ эмпатия;
- ◆ эмоциональная устойчивость;
- ◆ способность к эмоциональной саморегуляции;
- ◆ сопереживание.

Поведенческий компонент:

- ◆ сотрудничество;
- ◆ компромисс;
- ◆ диалогичность;
- ◆ конструктивное разрешение конфликтов.

Таким образом, миролюбие представляет собой активную стратегию социального взаимодействия, направленную на сохранение позитивных межличностных отношений и снижение конфликтности.

Концепция ненасильственной коммуникации

Теоретической основой изучения миролюбивых паттернов общения выступает концепция ненасильственной коммуникации М. Розенберга [2]. Согласно данной концепции, конструктивное взаимодействие возможно при осознании собственных потребностей, понимании эмоционального состояния собеседника и отказе от обвинительных форм коммуникации.

Ненасильственная коммуникация предполагает развитие эмпатии, уважительного отношения к партнеру по общению и готовности к совместному поиску решений, удовлетворяющих интересы всех участников взаимодействия.

На основе анализа современных психологических подходов предлагается авторская модель миролюбивой коммуникации личности.

Согласно модели, коммуникативное поведение определяется взаимодействием трех групп факторов:

- 1) личностные факторы: эмпатия, эмоциональный интеллект, коммуникативная толерантность, уровень самоконтроля, просоциальные ценности;
- 2) социокультурные факторы: семейное воспитание, культурные нормы, региональная специфика социализации, этнокультурная среда и характер социальных связей;
- 3) ситуационные факторы: уровень стрессогенности ситуации, особенности коммуникативного контекста, конфликтность взаимодействия и влияние цифровой среды.

Взаимодействие указанных факторов формирует миролюбивую установку личности, которая определяет выбор коммуникативных стратегий. Высокий уровень миролюбивой установки способствует сотрудничеству, компромиссу, конструктивному диалогу и уважительному отношению к собеседнику. Низкий уровень миролюбия повышает вероятность вербальной агрессии, конфликтности и коммуникативной нетерпимости.

Материалы и методы

Целью исследования являлось выявление и сравнительный анализ миролюбивых и агрессивных паттернов коммуникации у представителей северных и южных регионов Республики Казахстан, а также определение особенностей их взаимосвязи с показателями эмпатии, коммуникативной толерантности и эмоционального интеллекта.

В ходе исследования были выдвинуты следующие гипотезы:

1. Существуют статистически значимые различия между представителями северных и южных регионов Казахстана по уровню выраженности миролюбивых и агрессивных коммуникативных стратегий.

2. Более высокий уровень миролюбия связан с повышенными показателями эмпатии, коммуникативной толерантности и эмоционального интеллекта.

3. Миролюбивая установка личности выступает значимым предиктором выбора конструктивных стратегий межличностного взаимодействия независимо от региональной принадлежности респондентов.

В исследовании приняли участие 200 респондентов в возрасте от 18 до 60 лет, проживающих в различных регионах Республики Казахстан.

Для обеспечения сопоставимости данных выборка была разделена на две группы:

- ♦ 100 респондентов, представляющих северные регионы Казахстана;
- ♦ 100 респондентов, представляющих южные регионы Казахстана.

В выборку были включены представители различных профессиональных, образовательных и социальных групп. Формирование выборки осуществлялось по принципу добровольного участия с соблюдением этических норм психологического исследования. Все респонденты были проинформированы о целях исследования и подтвердили согласие на участие.

Для изучения особенностей миролюбивого и агрессивного коммуникативного поведения был использован комплекс психодиагностических методик.

Для оценки уровня агрессивности применялся опросник агрессивности Басса–Перри (Buss–Perry Aggression Questionnaire) [10], позволяющий диагностировать физическую агрессию, вербальную агрессию, гнев и враждебность. Уровень коммуникативной толерантности исследовался с помощью методики В.В. Бойко [9], направленной на выявление особенностей отношения личности к окружающим людям и степени принятия индивидуальных различий. Для измерения эмпатических способностей использовалась Шкала межличностной реактивности М. Дэвиса (Interpersonal Reactivity Index), позволяющая оценить когнитивные и эмоциональные компоненты эмпатии.

Для определения уровня выраженности миролюбия была разработана и апробирована авторская шкала миролюбивой установки личности, включающая когнитивные, эмоциональные и поведенческие индикаторы конструктивного взаимодействия.

Для анализа полученных данных были использованы:

- ♦ методы описательной статистики (средние значения, стандартные отклонения);
- ♦ критерий Колмогорова–Смирнова для проверки нормальности распределения;
- ♦ t-критерий Стьюдента для независимых выборок;
- ♦ корреляционный анализ Пирсона;
- ♦ множественный регрессионный анализ;
- ♦ коэффициент внутренней согласованности α Кронбаха для оценки надежности авторской шкалы.

Статистически значимыми считались различия при уровне значимости $p < 0,05$.

Результаты исследования показали наличие различий между исследуемыми группами по ряду коммуникативных характеристик.

Участники, представляющие южные регионы Казахстана, продемонстрировали более высокие показатели миролюбивой установки, эмпатии и коммуникативной толерантности.

Для данной группы были характерны выраженная ориентация на сохранение межличностной гармонии, готовность к поиску компромиссов и предпочтение конструктивных способов разрешения конфликтов.

Представители северных регионов продемонстрировали более высокие показатели прямолинейности коммуникации и несколько более высокие значения по шкале вербальной агрессии. Вместе с тем различия не свидетельствуют о повышенной общей агрессивности данной группы, а скорее отражают особенности коммуникативного стиля, предполагающего более открытое выражение собственного мнения и критических оценок.

Наиболее выраженные различия были выявлены по следующим показателям:

- ◆ миролюбивая установка личности;
- ◆ коммуникативная толерантность;
- ◆ эмпатия;
- ◆ вербальная агрессия.

Полученные данные частично подтвердили основную гипотезу исследования о существовании региональных различий в коммуникативном поведении.

Результаты анализа показали наличие статистически значимых положительных связей между миролюбивой установкой личности и следующими показателями:

- ◆ эмпатией ($r = 0,62$; $p < 0,01$);
- ◆ коммуникативной толерантностью ($r = 0,58$; $p < 0,01$);
- ◆ эмоциональным интеллектом ($r = 0,54$; $p < 0,01$).

Одновременно были выявлены отрицательные корреляционные связи между миролюбием и показателями агрессивности:

- ◆ физическая агрессия ($r = -0,47$; $p < 0,01$);
- ◆ вербальная агрессия ($r = -0,41$; $p < 0,01$);
- ◆ враждебность ($r = -0,52$; $p < 0,01$).

Полученные результаты свидетельствуют о том, что высокий уровень миролюбия связан с более развитой способностью к пониманию эмоциональных состояний других людей, большей терпимостью к индивидуальным различиям и меньшей склонностью к агрессивным формам реагирования.

Для определения факторов, оказывающих наибольшее влияние на формирование миролюбивой установки личности, был проведен множественный регрессионный анализ. В качестве независимых переменных были включены показатели эмпатии, коммуникативной толерантности, эмоционального интеллекта и региональной принадлежности. Результаты анализа показали, что наиболее значимыми предикторами миролюбия выступают:

- ◆ эмпатия ($\beta = 0,39$; $p < 0,001$);
- ◆ коммуникативная толерантность ($\beta = 0,31$; $p < 0,001$);
- ◆ эмоциональный интеллект ($\beta = 0,27$; $p < 0,01$).

Вклад региональной принадлежности оказался статистически значимым, однако существенно уступал влиянию личностных факторов.

Таким образом, результаты исследования свидетельствуют о том, что особенности коммуникативного поведения в большей степени определяются индивидуально-психологическими характеристиками личности, чем фактом проживания в конкретном регионе.

Таблица 1 – Средние значения показателей миролюбия, агрессивности и коммуникативных характеристик у представителей северных и южных регионов Казахстана

Показатель	Северные регионы (M±SD)	Южные регионы (M±SD)
Миролюбивая установка	67,4 ± 9,2	73,8 ± 8,6
Эмпатия	58,6 ± 7,4	64,1 ± 7,0
Коммуникативная толерантность	61,3 ± 8,1	67,5 ± 7,8
Эмоциональный интеллект	69,2 ± 8,5	72,8 ± 8,1
Общая агрессивность	54,7 ± 9,8	49,6 ± 8,9
Вербальная агрессия	15,8 ± 3,2	13,6 ± 2,9
Враждебность	14,7 ± 3,8	12,9 ± 3,4
Примечание: Составлено авторами по результатам собственного исследования.		

Как видно из представленных данных, представители южных регионов демонстрируют более высокие показатели миролюбия, эмпатии, коммуникативной толерантности и эмоционального интеллекта. В свою очередь, представители северных регионов характеризуются несколько более высокими значениями общей и вербальной агрессивности.

Таблица 2 – Результаты сравнения исследуемых групп по t-критерию Стьюдента

Показатель	t	p
Миролюбивая установка	5,87	<0,001
Эмпатия	4,76	<0,001
Коммуникативная толерантность	5,14	<0,001
Эмоциональный интеллект	2,98	0,003
Общая агрессивность	-4,12	<0,001
Вербальная агрессия	-5,01	<0,001
Враждебность	-4,27	<0,001
Примечание: Составлено авторами по результатам статистической обработки данных исследования.		

Результаты сравнительного анализа свидетельствуют о наличии статистически значимых различий между исследуемыми группами по всем основным показателям. Полученные данные подтверждают основную гипотезу исследования о существовании региональных особенностей проявления миролюбивых и агрессивных коммуникативных стратегий.

Таблица 3 – Корреляционные связи миролюбивой установки личности и исследуемыми показателями

Переменная	r	p
Эмпатия	0,62	<0,001
Коммуникативная толерантность	0,58	<0,001
Эмоциональный интеллект	0,54	<0,001
Общая агрессивность	-0,49	<0,001
Вербальная агрессия	-0,41	<0,001
Враждебность	-0,52	<0,001
Примечание: Составлено авторами по результатам корреляционного анализа.		

Корреляционный анализ показал наличие устойчивых положительных связей миролюбивой установки с эмпатией, коммуникативной толерантностью и эмоциональным интеллектом. Одновременно выявлены отрицательные связи между миролюбием и различными формами агрессивности.

Полученные результаты позволяют предположить, что развитие миролюбивой установки связано с формированием способности к пониманию эмоциональных состояний других людей, принятием индивидуальных различий и выбором конструктивных форм взаимодействия.

Результаты и обсуждение

Полученные результаты позволяют сделать ряд важных выводов относительно особенностей проявления миролюбивых и агрессивных паттернов коммуникации у представителей северных и южных регионов Республики Казахстан.

Прежде всего результаты исследования подтверждают основную гипотезу о существовании статистически значимых различий в выраженности отдельных коммуникативных характеристик между исследуемыми группами. При этом выявленные различия носят не абсолютный,

а вероятностный характер, отражая влияние социокультурных условий на формирование коммуникативного поведения личности.

Анализ данных показал, что представители южных регионов демонстрируют более высокие показатели миролюбивой установки, эмпатии и коммуникативной толерантности. Данный результат может быть объяснен особенностями культурной среды, для которой традиционно характерны высокая значимость семейных отношений, выраженная ориентация на коллективные формы взаимодействия, уважение к старшим и стремление к поддержанию социальной гармонии. В подобных условиях конструктивное разрешение конфликтов и сохранение позитивных межличностных отношений приобретают особую социальную ценность.

Полученные результаты согласуются с положениями теории культурных измерений Г. Хофстеде [6], согласно которой коллективистские культуры в большей степени ориентированы на поддержание внутригруппового согласия, взаимную поддержку и сохранение устойчивых социальных связей. В таких условиях развитие миролюбивых коммуникативных стратегий становится одним из механизмов социальной адаптации личности.

В свою очередь, представители северных регионов продемонстрировали несколько более высокие показатели вербальной агрессии и прямолинейности коммуникации. Однако данные результаты не свидетельствуют о более высоком уровне общей агрессивности как личностной характеристики. Скорее они отражают специфику коммуникативного стиля, связанного с большей открытостью выражения собственного мнения, склонностью к прямой обратной связи и ориентацией на индивидуальную ответственность. Подобные особенности также могут рассматриваться как результат влияния социокультурной среды и более урбанизированного характера социальных отношений.

Особого внимания заслуживают результаты корреляционного анализа. Выявленные положительные взаимосвязи между миролюбием, эмпатией, коммуникативной толерантностью и эмоциональным интеллектом подтверждают предположение о комплексной природе миролюбия как психологического конструкта. Полученные данные позволяют рассматривать миролюбие не как изолированное качество личности, а как интегративную систему взаимосвязанных когнитивных, эмоциональных и поведенческих характеристик.

Существенное значение имеет выявленная отрицательная связь между миролюбием и различными формами агрессивности. Данный результат подтверждает, что высокий уровень миролюбивой установки способствует снижению вероятности использования агрессивных способов реагирования в межличностном взаимодействии. Вместе с тем отсутствие полной обратной зависимости между данными показателями свидетельствует о том, что миролюбие не может рассматриваться исключительно как противоположность агрессии. Напротив, результаты исследования позволяют говорить о его относительной самостоятельности как психологического феномена.

Полученные данные в значительной степени согласуются с положениями позитивной психологии [1], рассматривающей просоциальные качества личности как важнейшие ресурсы психологического благополучия и социальной адаптации. Согласно подходу М. Селигмана и его последователей, развитие позитивных личностных характеристик способствует повышению качества межличностных отношений и укреплению социальной сплоченности [1, 8]. В этом контексте миролюбие может рассматриваться как одна из ключевых характеристик личности, обеспечивающих устойчивость социальных взаимодействий в условиях современного общества.

Особый интерес представляет сравнительно невысокий вклад региональной принадлежности в объяснение вариативности показателей миролюбия. Несмотря на наличие статистически значимых различий между исследуемыми группами, решающее значение в формировании коммуникативного поведения сохраняют индивидуально-психологические характеристики личности [13]. Это позволяет сделать вывод о том, что влияние социокультурной среды реализуется преимущественно через развитие определенных личностных качеств, а не через прямое детерминирование поведения человека.

С теоретической точки зрения полученные результаты подтверждают целесообразность рассмотрения миролюбия как самостоятельного объекта психологического исследования. В

отличие от традиционного подхода, в рамках которого миролюбие определяется через отсутствие агрессивности, проведенное исследование демонстрирует наличие собственной структуры данного феномена, включающей когнитивные, эмоциональные и поведенческие компоненты.

Особую значимость представляет разработанная авторская модель миролюбивой коммуникации личности. Результаты исследования подтверждают предположение о том, что миролюбие формируется под влиянием комплекса личностных, социокультурных и ситуационных факторов. При этом ключевую роль играют эмпатия, эмоциональный интеллект и коммуникативная толерантность, выступающие психологическими механизмами реализации миролюбивых стратегий взаимодействия.

Заключение

Практическое значение полученных результатов заключается в возможности их использования при разработке программ профилактики конфликтного поведения, развитии навыков ненасильственного общения, совершенствовании образовательных практик и реализации проектов, направленных на укрепление общественного согласия и межкультурного взаимодействия в Республике Казахстан [14–18].

Таким образом, проведенное исследование подтверждает перспективность дальнейшего изучения миролюбия как самостоятельного психологического конструкта и открывает новые возможности для исследования факторов, способствующих формированию культуры мирного и конструктивного общения в современном обществе.

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ҚАЗАҚСТАННЫҢ СОЛТҮСТІК ЖӘНЕ ОҢТҮСТІК Өңірлеріндегі КОММУНИКАТИВТІК МІНЕЗ-ҚҰЛЫҚТЫҢ БЕЙБІТШІЛ ЖӘНЕ АГРЕССИВТІ ҮЛГІЛЕРІ: ПСИХОЛОГИЯЛЫҚ ТАЛДАУ

Андағпа

Мақалада Қазақстан Республикасының солтүстік және оңтүстік өңірлері өкілдерінің қарым-қатынасындағы бейбітшілікке бағытталған және агрессивті коммуникативтік паттерндердің көрініс беру ерекшеліктері қарастырылады. Аталған өңірлерді таңдау тарихи, әлеуметтік-мәдени, демографиялық және коммуникативтік факторлардың тұлғааралық өзара әрекеттесу ерекшеліктеріне ықпалын зерттеу қажеттілігімен негізделеді. Өңірлерді салыстырмалы талдау тек ғылыми-зерттеу сипатында жүргізілетінін және олардың қарама-қарсы қойылуын, бағалау пікірлерін қалыптастыруды немесе бір әлеуметтік топтың екіншісінен артықшылығын анықтауды көздемейтінін ерекше атап өткіміз келеді. Зерттеу әртүрлі әлеуметтік-мәдени жағдайларда коммуникативтік мінез-құлық ерекшеліктерін және бейбітшілікке бағытталған әрі агрессивті қарым-қатынас стратегияларының қалыптасуына әсер ететін факторларды анықтауға бағытталған. Зерттеудің өзектілігі әлеуметтік трансформациялар, коммуникативтік кеңістіктің цифрлануы, мәдениетаралық байланыстардың кеңеюі және халықтың әлеуметтік мобильділігінің артуы жағдайында тұлғааралық өзара әрекеттестіктің конструктивті формаларының маңыздылығының артуымен байланысты. Бейбітшілікке бейімділік әлеуметтік тұрақтылықты қамтамасыз етудің, жанжалдардың алдын алудың және тұлғааралық қатынастарды үйлестірудің маңызды психологиялық ресурсы ретінде қарастырылып, оған ерекше назар аударылады.

Тірек сөздер: бейбітшілікке бейімділік, агрессия, коммуникативтік мінез-құлық, бейбітшіл ұстаным, эмпатия, толеранттылық, өңірлік ерекшеліктер.

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PEACEFUL AND AGGRESSIVE PATTERNS OF COMMUNICATION IN THE NORTHERN AND SOUTHERN REGIONS OF KAZAKHSTAN: A PSYCHOLOGICAL ANALYSIS

Abstract

This article examines the manifestations of peaceful and aggressive communication patterns among representatives of the northern and southern regions of the Republic of Kazakhstan. The selection of these regions is

determined by the need to study the influence of historical, sociocultural, demographic, and communicative factors on the specifics of interpersonal interaction. It should be emphasized that the comparative analysis of the regions is conducted solely for scientific research purposes and does not imply their opposition, the formation of evaluative judgments, or the establishment of the superiority of one social group over another. The study aims to identify the characteristics of communicative behavior and the factors contributing to the formation of peaceful and aggressive communication strategies in different sociocultural contexts. The relevance of the study is determined by the growing importance of constructive interpersonal interaction in the context of social transformations, the digitalization of communication space, the expansion of intercultural contacts, and increasing social mobility. Particular attention is paid to the study of peacefulness as an independent psychological phenomenon that serves as an important resource for social stability, conflict prevention, and the harmonization of interpersonal relations.

Keywords: peacefulness, aggression, communicative behavior, peaceful attitude, empathy, tolerance, regional characteristics.

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2 CLINICAL AND SPECIAL PSYCHOLOGY КЛИНИКАЛЫҚ ЖӘНЕ АРНАЙЫ ПСИХОЛОГИЯ КЛИНИЧЕСКАЯ И СПЕЦИАЛЬНАЯ ПСИХОЛОГИЯ

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META-MESSAGE IN THE PSYCHO-FUNCTIONAL REBUILDING METHOD: NEUROBIOLOGICAL MECHANISMS AND EXPERIENCE OF USE

Abstract

This article considers the phenomenon of meta-messages as a central mechanism of the psychofunctional unblocking method (PF_R) and analyzes its putative neurobiological and psychophysiological foundations. The aim of the study was to determine the role of meta-messages in the activation of unconscious processes associated with the resolution of internal conflicts, emotional processing, and psychophysical regulation. The theoretical model of the method is based on modern concepts of mirror neurons, nonverbal communication mechanisms, trance states of consciousness, and the neurodynamics of emotional response. The study included 4,390 people aged 25 to 58 years, 88.6% of whom were women and 11.4% were men. After the PF_R sessions, the subjective and observed reactions of the participants were analyzed. Most of the subjects experienced trance and theta-dominant states of consciousness, as well as pronounced emotional, motor, and autonomic reactions. The effectiveness of the method was confirmed by a statistically significant improvement in the psychological state on the visual analogue scale: the average score increased from 4.8 ± 2.3 to 8.8 ± 1.3 . These results demonstrate the high therapeutic value of meta-messages as a means of non-verbal influence and demonstrate the potential of the PF_R method in the treatment of chronic psychological trauma and emotional blocks.

Keywords: meta-message, mirror neurons, psycho-functional rebuilding, unconscious conflict, nonverbal communication.

Introduction

Emotional and behavioral states demonstrate significant contagion effects, wherein observation of affective displays (e.g., laughter, distress, disgust, or pain) elicits corresponding shared emotional experiences in observers. Watching another individual's suffering evokes empathy in us, and observing an outstanding actor, musician, or athlete at the peak of their abilities creates a sensation as if we are

part of their experience. However, it is only recently, with the discovery of mirror neurons, that we have begun to understand how this phenomenon of emotional and motor resonance is realized in the human brain [1, 2].

The PF_R method represents a distinct approach in modern psychology. The mechanisms of this method are based on deep psychophysical interaction with the participant's subconscious and body. Unlike traditional interventions, PF_R enables participants to autonomously process psychological trauma, resolving internal conflicts at the subconscious level without direct external guidance – a mechanism analogous to abreaction (i.e., the biological discharge [3]. The method comprises four core components: meta-message demonstration, verbal part, dynamic part, and participant interview. This article focuses on the meta-message, the foundational element of PF_R, examining its neurobiological basis and therapeutic role [3, 4].

Psychophysics is the connection between the body and the psyche, which is formed through the interaction of a person with the environment and the people around him [5]. The human brain – our consciousness – develops over time and contains numerous associations formed in the learning process, creating its own internal map of the world (meanings) based on personal experience [6, 7].

Each individual carries information accumulated over the years, stored not only as memories in the mind, but also on a physical level in the form of muscle memory. Any emotionally painful experiences create mental blocks, as well as amnesia and anesthesia in the body (preserving the somatic-psychological link), which subsequently lead to psychosomatic reactions, neuroses, and disorders [8].

This mechanism was first described by I.M. Sechenov in 1878, and the further development of his ideas was reflected in the works of P. Janet in 1889. In the leading international scientific journal *Science*, Damasio and colleagues published an article reporting that re-experiencing intense negative emotions triggers significant changes in brain regions receiving signals from muscles, the gut, and the skin – precisely those areas responsible for regulating the body's vital functions [9].

The researchers' findings demonstrated that recalling past emotional events evokes the same visceral sensations originally experienced during the event itself. Each type of emotion generates its own distinct somatic patterns. For example, a specific brainstem region "activated during sadness and anger but remains inactive during joy or fear". These brain structures lie below the limbic system, and we implicitly acknowledge their role whenever we use colloquial phrases linking strong emotions to the body: "You make me sick"; "I got chills"; "I got goosebumps"; "A lump in my throat"; "My heart dropped"; "It made my blood run cold", "My hair stood on end" [8, 9].

The brainstem and limbic system become activated when humans face existential threats, causing an overwhelming fear of death accompanied by extreme psychological arousal. For individuals re-experiencing such emotions, they become trapped in a state of perceived mortal danger – paralyzing terror, self-aggression, and helplessness [5]. Chronic sleep disturbances, anhedonia (loss of pleasure in food and life), and psychosomatic disorders are common consequences. In classical psychology and psychotherapy, therapists guide clients to repeatedly re-live traumatic situations until their maladaptive beliefs shift, replacing negative cognitions with therapeutic suggestions. The core objective such therapy is to help clients regain the ability to respond adaptively to danger and restore feelings of safety, relaxation, and belonging [5, 8].

Research on the functions of mirror neurons has been ongoing for over 30 years, and this discovery has revolutionized cognitive neuroscience. The seminal breakthrough came in the early 1990s, when Y. Sun and colleagues observed a remarkable property in primate neurons: these neurons were activated not only when performing an action but also when observing the same action performed by another animal, as confirmed through brain electro stimulation experiments [10]. As shown by Y. Sun, the mirror neuron system fires both during action execution and observation, creating a neural bridge for empathy. Subsequently, researchers obtained evidence of the presence of similar neurons in humans using functional magnetic resonance imaging (fMRI) of the brain [11]. Today, mirror neurons are actively used in the rehabilitation of limb motor functions, and authors describe this as mirror therapy [12].

Scientists have identified that mirror neurons are sensorimotor neurons in the brain that activate and transmit excitation to other parts of the nervous system both when performing a specific motor act and when observing the action or inaction of another person. According to research on mirror neurons,

an organized sequence of information transmission processes is initiated in the brain, starting from sensory areas to associative areas for integration and subsequent transmission of the resulting image to the motor cortex, where the corresponding movements are initiated. Thus, these neurons “mirror” the actions of others. Mirror neurons are distributed across multiple brain regions, including the frontal, parietal, and temporal lobes, as well as the thalamus. These findings led to the conceptualization of the “mirror neuron system” [11, 13, 14].

Prominent neuroscientist V.S. Ramachandran predicted that “mirror neurons will do for psychology what DNA did for biology” [15].

The unique properties of these neurons have attracted the attention interdisciplinary scientific interest. Researchers across fields – including sociologists, anthropologists, and even artists – have shown keen interest in this phenomenon. For instance, director Peter Brook noted that mirror neurons shed new light on the mysterious connection between actor and audience: when a great actor performs, the same areas in the viewer’s brain are activated as in the performer, including both motor and emotional components [16].

This mechanism underpins empathy, social learning, and nonverbal communication, holding fundamental significance for psychology, psychotherapy, and neuroscience. As every mental action has physical consequences, and every physical action carries psychological effects, these interconnections form the foundation the Psycho-Functional Rebuilding Method (PF_R). When applying the PF_R method, deep-seated connections between the body and subconscious are activated in an ecologically safe manner for the client. This enables the client to independently restructure maladaptive neural patterns, resolve unconscious inner conflicts at their own comfortable pace, and engage with the body’s authentic somatic language. In this article, we examine how the discovery of mirror neurons has transformed our understanding of human behavior and explore its potential applications in psychological and therapeutic practice – particularly within the PF_R method.

Modern neuroscience research confirms that nonverbal communication plays a pivotal role in transmitting emotional states and activating profound mental processes. The PF_R method employs a video meta-message that bypasses conscious filters to directly influence the participant’s subconscious through mirror neuron mechanisms. This is evidenced by: subtle but observable dynamics of facial microexpressions, pupillary responses, and bodily manifestations of emotional processing. The PF_R’s meta-message differs from conventional hypnotic induction by combining mirror neuron activation with somatic feedback loops, a approach not yet described in prior literature.

Materials and methods

1. Participants

The study included 4,390 participants (18+ years) from six countries:

- ◆ Kazakhstan: 43% (n=1,888)
- ◆ Russia: 34% (n=1,493)
- ◆ Germany: 16% (n=702)
- ◆ Other countries: 7%

Gender distribution:

- ◆ Female: 88.6% (n=3,890)
- ◆ Male: 11.4% (n=500)

Age range: 25-58 years (mean 41.4±7.5)

Our study describes the use of the PF_R method. This method was first used on April 20, 2020, patented in the same year, and has since been employed in both individual and group therapy.

Before applying the PF_R Method, each participant provided their consent to participate, agreed to the use of the results obtained, and received full information about the conduct and course of the group PF_R session, as well as possible physical and emotional reactions during the viewing of the meta-message and the therapeutic session process.

Each participant was interviewed to identify exclusion criteria. The exclusion criteria included: childhood, recent acute illness or exacerbation of a chronic illness, a history of epilepsy, psychiatric disorders, developmental delays, congenital anomalies, encephalopathy, Alzheimer’s and Parkinson’s diseases, organic brain lesions, cancer, diabetes, pregnancy or breastfeeding, and early or late

postoperative periods. The inclusion criteria were: age 18 or older, consent to participate in the group PF_R session, and the presence of a psychological issue in some area of life.

2. Procedure

Intervention Protocol:

1. Visual Analog Scale (VAS)

2. PF_R method session. The PF_R method comprises four key components.

Structure of the PF_R method session:

1.1 Meta-message demonstration (trance induction phase) (10–20 minutes)

The meta-message forms the foundation of the PF_R method. During the first block, the meta-message is transmitted and “delivered” to the participant’s subconscious. The meta-message is transmitted through a specially edited video sequence, conveying the state from the subconscious of the people in the video to the session participants, thus influencing the viewers’ subconscious. This meta-message includes:

2.1.1 Emotional states of participants (before therapy, during the session, and after it).

2.1.2 Nonverbal patterns that activate abreaction processes (biological discharge).

2.1.3 Hidden visual and auditory triggers that resonate with individual unconscious conflicts.

2.1.4 Specially selected sound patterns that reduce beta rhythm activity (conscious control), enhance theta and alpha activity (trance state), synchronize with physiological processes, and activate the parasympathetic nervous system, facilitating spontaneous abreaction.

1.2 Verbal component (10–20 minutes)

During sessions, the therapist operates in a functional trance state - intentionally induced pre-session and maintained throughout participant or group of people interactions. The therapist delivers targeted verbal directives to uncover and resolve the client’s presenting unconscious conflicts.

1.3 Dynamic phase (60–90 minutes)

This phase initiates spontaneous somatic processing where: abreactions, the body self-regulates maladaptive patterns at its intrinsic rhythm. Group dynamics (when applied) accelerate subconscious disclosure and biological recovery processes compared to individual sessions

1.4 Participant interview (10–20 minutes)

Structured debriefing includes tripartite evaluation:

2.4.1 Affective state assessment (“How do you feel?”)

2.4.2 Phenomenological description (“How would you characterize your current state?”)

2.4.3 Future integration (“How will you move forward with this change?”).

In the PF_R method, background music is used to induce a trance state through neurophysiological mechanisms of brain rhythm synchronization. The musical background accompanies the entire session, and the meta-message also includes this musical accompaniment.

3. Post-session integration interview. Follow-up at 1 day, 3 days, and 3–6 months

3. Measure

3.1 Visual Analogue Scale (1–10) (follow-up at pre-session and 3–6 months)

3.2 Qualitative reaction coding by follow-up questionnaires (before and after the sessions at 3-6 months)

The PF_R session was then conducted according to the patented and previously described scheme. Follow-up questionnaires were administered by phone or in person one day, three days, and three to six months after the session. Participants’ conditions before and after the sessions at 3-6 months were assessed using a visual analog scale (VAS) from 1 to 10 points.

4. Data Analyses

The statistical analysis of the data was performed using the R statistical programming language and environment (version 3.6.1) in the RStudio IDE (version 1.3.1093). The distribution of continuous and discrete quantitative variables in the sample is presented as the arithmetic mean and standard deviation ($M \pm SD$), as well as the minimum and maximum values. Categorical indicators are presented as absolute numbers and percentages (n (%)).

The normality of the sample distribution was assessed using the Shapiro-Wilk test. Differences in the distributions of categorical variables in independent samples were tested using the Chi-square test and Fisher’s exact test, while McNemar’s test was used for dependent samples. To evaluate the association between outcomes and their predictors, multivariate analysis was performed using binary logistic regression.

Results and discussion

The study cohort consisted of 4390 adult participants aged 18 years and older who underwent psychofunctional release (PF_R) sessions conducted in either an individual or group format. Group sizes ranged from 1 to 63 participants per session, allowing for the evaluation of the method in a variety of therapeutic settings and levels of interpersonal interaction. Of the total sample, 3890 participants were female (88.6%) and 500 participants were male (11.4%). Participants ranged in age from 25 to 58 years, reflecting a mature adult population with a broad spectrum of psychosocial and emotional experiences relevant to the study objectives. The mean age of the overall cohort was 40 years, with a mean age of 41.4 ± 7.5 years. Female participants had a mean age of 41.1 ± 7.3 years, with a range of ages from 25 to 58 years, with a mean age of 40 years. The mean age of male participants was 43.6 ± 8.9 years, with a range of 28 to 54 years, and a median age of 45.5 years.

The preponderance of female participants may reflect gender differences in engagement in psychotherapy and body-focused therapeutic practices, as well as women’s tendency to seek interventions focused on emotional regulation and trauma-related symptoms. The demographic structure of the sample provided a sufficiently large and heterogeneous population to assess the psychophysiological and behavioral effects associated with the PF_R method and the perception of meta-messages during therapy sessions. A detailed breakdown by age and gender is shown in figure 1.

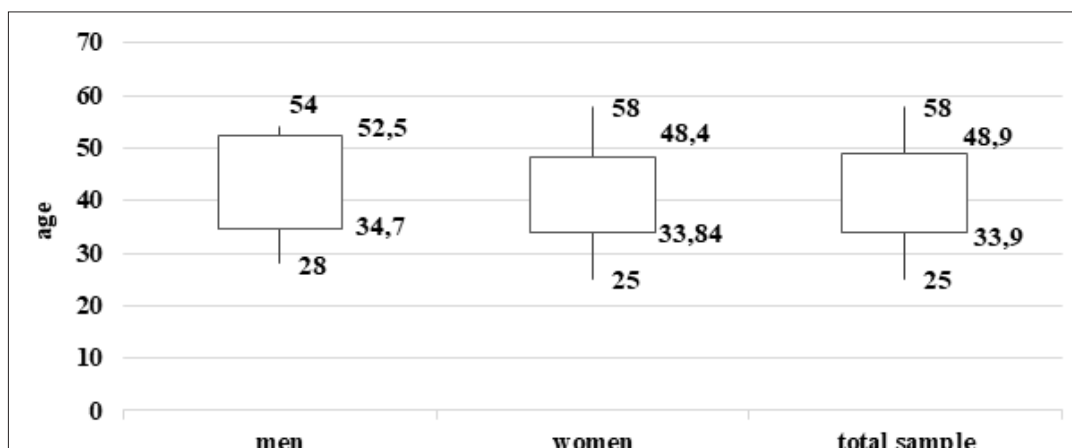


Figure 1 – Gender distribution of participants in PF_R method sessions

Note: Created by the authors based on research.

The study cohort showed considerable geographical diversity and included participants from six countries in Central Asia, Eastern Europe, and Western Europe. The largest proportion of participants was recruited from Kazakhstan, accounting for 43% of the total sample (n=1888), followed by Russia with 34% (n=1493). Participants from Germany accounted for 16% of the cohort (n=702), and smaller groups were recruited from Uzbekistan – 5% (n=219), France – 1% (n=44), and the United Arab Emirates – 1% (n=44). This multinational composition allowed us to assess the psychophysiological and behavioral effects of the PF_R method in culturally heterogeneous populations and in different sociocultural settings. Detailed data on the geographical distribution are shown in figure 2.

The broad international representation of participants increases the external validity and potential cross-cultural applicability of the study findings. Despite differences in language, cultural background, social norms, and emotional expression patterns, participants from all regions demonstrated similar engagement with the psychofunctional release process and similar phenomenological responses to the meta-message intervention. Such consistency may indicate the existence of universal neurobiological and nonverbal mechanisms underlying the emotional resonance, mirror neuron activity, and altered states of consciousness elicited during PF_R sessions. Furthermore, the preponderance of participants from post-Soviet countries may reflect a regional interest in integrative psychophysiological approaches and trauma-focused therapeutic practices, while the participation from Western Europe and the Middle East reflects the growing international recognition of nonverbal and body-focused psychotherapy methodologies.

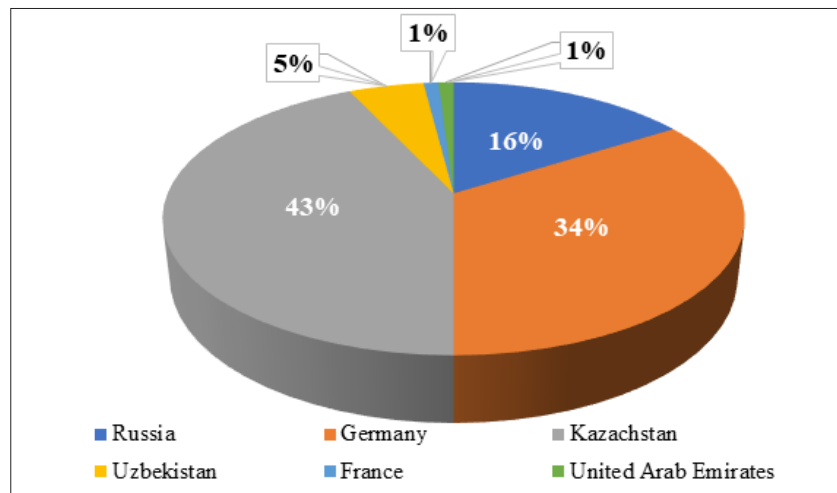


Figure 2 – Geographic distribution of participants in PF_R Method sessions

Note: Created by the authors based on research.

A total of 107 psychofunctional release (PF_R) sessions were conducted in individual and group formats over the five-year follow-up period. Each session lasted no more than 3 hours, with an average session duration of approximately 2.5 hours. During all sessions, participants were exposed to a structured meta-message designed to activate nonverbal psychophysiological responses and facilitate unconscious emotional processing. After each session, participants completed a standardized post-session questionnaire in which they described their subjective experiences, emotional states, bodily sensations, and behavioral reactions associated with receiving the meta-message. Analysis of the responses revealed that most participants reported multiple reaction categories simultaneously, indicating the multidimensional psychophysiological effects of the PF_R intervention.

A total of 3,387 participants (77.1%) reported the onset of altered states of consciousness characterized by trance-like immersion accompanied by a variety of emotional, somatic, or behavioral manifestations. In contrast, 1003 participants (22.9%) reported no observable reactions or no apparent perceived trance state. Of all respondents, 3261 (74.3%) specifically described experiences consistent with trance phenomena, including sleep states, decreased voluntary cognitive control, altered time perception, dissociative immersion, and deep internal concentration. These findings may reflect the activation of neurophysiological mechanisms associated with theta-dominant brain activity and decreased cortical filtering, which are often observed during hypnotic, meditative, and trauma-resolving states.

Emotional reactions represented one of the most frequently observed response categories and were reported by 2320 participants (52.9%). These reactions included acute fear reactions, emotional numbing, uncontrolled laughter, spontaneous aggression, feelings of helplessness, depressive affect, and episodes of intense emotional relaxation. A wide range of emotional manifestations indicate the activation of deeply encoded affective material and previously repressed emotional experiences. From a psychodynamic and neurobiological perspective, such reactions may reflect a temporary destabilization of habitual emotional defense mechanisms and an increased availability of subcortical emotional networks involved in processing trauma-related memory.

Motor phenomena were documented in 1192 participants (27%) and included involuntary muscle contractions, facial and trunk muscle twitching, spontaneous limb movements, and short-term motor discharges. These reactions may represent psychomotor manifestations of autonomic arousal and sensorimotor release associated with the processing of unresolved emotional tension. In addition, 118 participants (4.3%) experienced autonomic or autonomic reactions, including nausea, vomiting, coughing, and excessive sweating. The session organizers also noted temporary skin hyperemia in the face, neck, and upper chest areas in some participants; however, these observations were excluded from statistical analysis because the participants themselves were generally unaware of these physiological changes during the session.

The results obtained indicate that exposure to the PF_R meta-message is associated with a wide range of subjective and objective psychophysiological responses, including emotional, motor, autonomic, and altered consciousness components. The predominance of trance-related and emotional responses supports the hypothesis that the PF_R method may involve deep nonverbal regulatory mechanisms related to emotional resonance, mirror neuron activity, autonomic nervous system modulation, and implicit trauma processing. The distribution and frequency of responses observed during the PF_R sessions are shown in figure 3.

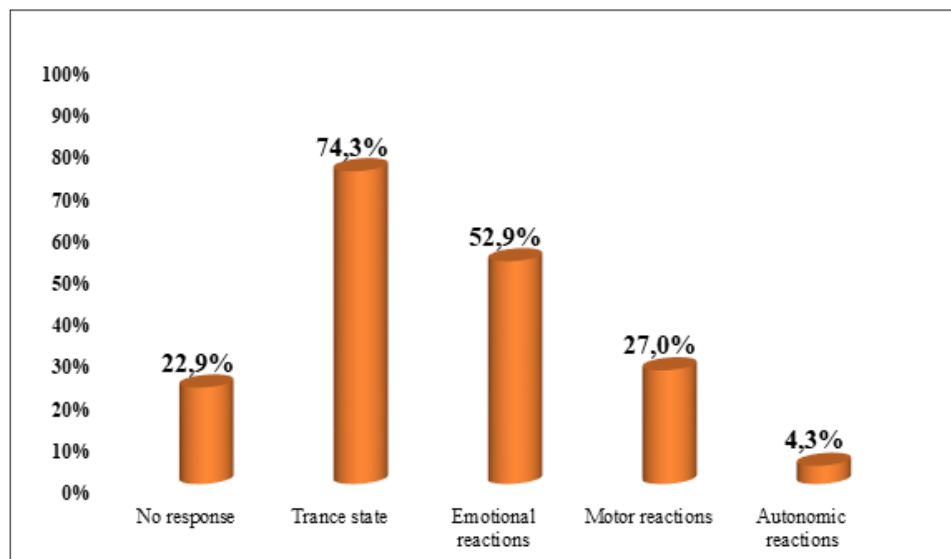


Figure 3 – Spectrum of reactions to PF_R meta-message exposure reported by participants

Note: Created by the authors based on research.

Analysis of participants' self-reports obtained after the dynamic phase of the Psychofunctional Release (PF_R) sessions revealed a high prevalence of combined psychomotor and emotional responses. The majority of respondents – 3198 of 4390 participants (72.9%) – described a simultaneous shift in motor and affective responses when exposed to the meta-message. This combination of responses suggests the activation of integrated psychophysiological processes involving emotional arousal, autonomic regulation, and sensorimotor discharge. The observed synchronization of emotional and bodily expressions may indicate the involvement of limbic-sensorimotor networks associated with latent trauma processing, nonverbal emotional communication, and activation of mirror neuron systems. These results support the hypothesis that the PF_R method induces a multimodal state of psychophysiological activity in which emotional processing is closely linked to bodily expression and involuntary motor activity.

Motor manifestations represented the most frequently observed response category and were 18.5% more frequent than isolated emotional reactions, documented in 4013 participants (91.4%). According to the subjective characteristics of the participants, the predominant motor phenomena included spontaneous movements of the upper and lower limbs, involuntary movements of the head, and uncontrolled changes in body posture, which were reported by 2697 participants (61.4%). In addition, contractions and tension of the anterior abdominal wall muscles were observed in 1254 participants (28.6%). Most respondents described these reactions as occurring automatically, without conscious intention or voluntary control. From a neurophysiological perspective, such psychomotor manifestations may be associated with subcortical activation patterns, autonomic discharge, and the release of chronic muscle tension associated with emotionally significant experiences. These findings are consistent with body-centered psychotherapy and somatic trauma processing theories, which conceptualize involuntary motor activity as a mechanism for psychophysical discharge and restoration of autonomic regulation.

Emotional reactions were documented in 3198 respondents (72.9%) and varied considerably in intensity and phenomenological content. The most common manifestations included screaming, crying, and spontaneous laughter, which were reported by 2948 participants (67%). Feelings of fear or anxiety were clearly described in 1129 participants (25.7%). Participants described these emotional states as sudden, overwhelming, and difficult to cognitively regulate during the session. In many cases, emotional reactions occurred simultaneously with bodily sensations and motor discharges, indicating a close interaction between the affective and somatic processing systems. The occurrence of intense emotional relaxation may indicate a temporary weakening of inhibitory psychological defenses and the activation of previously repressed emotional memories or unresolved traumatic experiences. Such reactions are characteristic of altered states of consciousness associated with increased emotional availability and decreased executive control.

Autonomic or autonomic reactions were observed in 753 participants (17%) and included nausea, vomiting, coughing, hypersalivation, excessive sweating, and transient respiratory rhythm disturbances. These manifestations may reflect autonomic nervous system activity and acute physiological arousal associated with emotionally significant internal experiences. Although autonomic reactions are rarer than motor or emotional manifestations, their presence suggests that the PF_R process may involve deep psychophysiological regulatory mechanisms beyond purely cognitive or affective domains.

Interestingly, 125 respondents (approximately 2% of the sample) initially reported “no reactions” during the session. However, detailed analysis of their questionnaires revealed the presence of involuntary limb movements and other observable psychomotor manifestations that the participants themselves did not subjectively classify as meaningful reactions. In most cases, these individuals were expecting intense or dramatic experiences and therefore did not assess subtle physiological or motor responses. This discrepancy between subjective interpretation and objective observation highlights the importance of combining self-report and behavioral assessment methods when examining altered states of consciousness and psychophysiological responses during therapeutic interventions.

Additional phenomena reported during the dynamic phase of PF_R sessions included vivid memories of traumatic life events, transient hallucinatory experiences, symbolic imagery, altered perceptions of reality, and spontaneous intuitive insights. These experiences were described by 754 participants (17% of the total cohort). In many cases, participants reported the sudden emergence of autobiographical memories accompanied by strong emotional involvement and somatic sensations. Such phenomena may indicate the activation of implicit memory networks and altered integrative processing of emotionally significant material. It is worth noting that all participants showed symptoms consistent with trance-like states of consciousness during the session, characterized by narrowing of attention, altered sensory perception, emotional immersion, and decreased critical self-control.

The results obtained indicate that the dynamic phase of PF_R sessions is associated with complex multimodal psychophysiological reactions that include emotional, motor, autonomic, and altered consciousness components. The predominance of integrated motor-emotional responses supports the concept that nonverbal psychotherapeutic interventions may involve deeply integrated neural systems responsible for emotional regulation, bodily expression, and processing of latent trauma. The distribution and phenomenology of the reactions observed during the dynamic phase of PF_R sessions are shown in figure 4.

The psychological and subjective functional state of the participants before and after the psychofunctional release (PF_R) sessions was assessed using a visual analogue scale (VAS), in which participants independently rated their overall psycho-emotional state on a 10-point scale. Analysis of the obtained data showed a clear positive change in subjective well-being after exposure to the PF_R intervention and meta-message. In the total cohort of 4390 participants, the mean baseline score before the session was 4.8 ± 2.3 points, which indicates a mostly average or reduced level of psycho-emotional well-being at the beginning of the therapeutic process. After the end of the session, the mean VAS score increased to 8.8 ± 1.3 points, which indicates a significant subjective improvement in emotional state, internal comfort and perceived psychological stability.

The observed increase in VAS scores indicates that the PF_R method can have a significant short-term regulatory effect on the emotional and psycho-physiological state of the participants.

The relatively high standard deviation before the session indicates a clear heterogeneity in the initial psychological state of the participants, reflecting different levels of emotional distress, chronic stress, unresolved trauma, or psychosomatic tension in the study population. Conversely, the decrease in post-session score variability may indicate a partial convergence among the participants towards a stable and positive psychoemotional state. Such results may indicate the activation of adaptive neurophysiological mechanisms associated with emotional relaxation, autonomic regulation, reduction of internal psychological tension, and temporary restoration of affective balance.

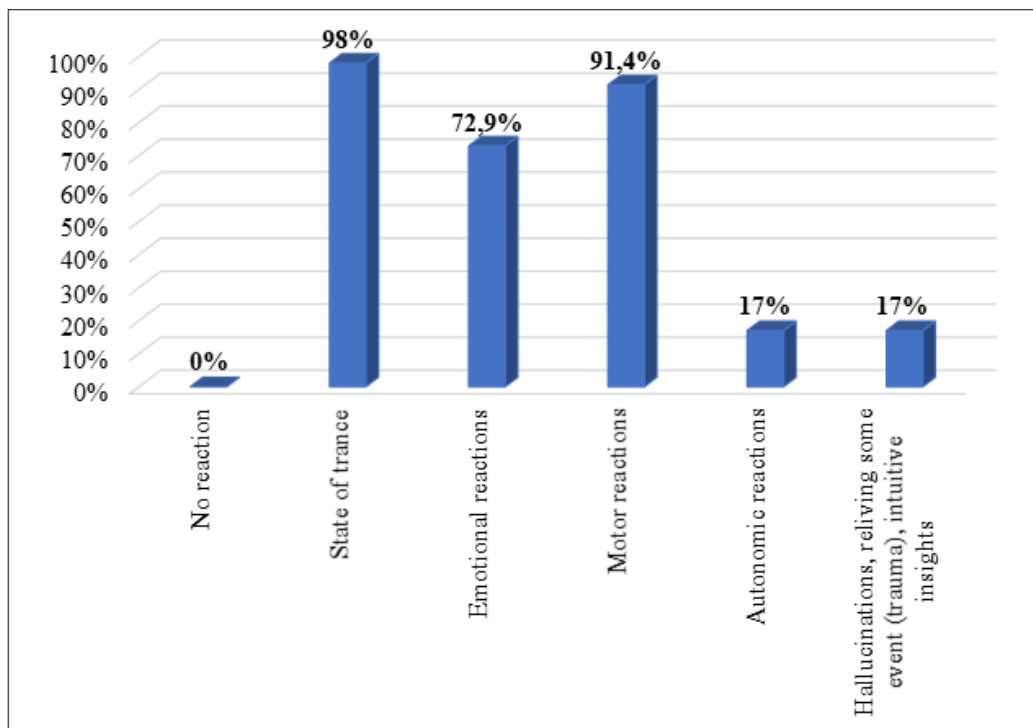


Figure 4 – Subjective experiences reported during the active intervention phase of PF_R therapy sessions

Note: Created by the authors based on research.

Gender-specific analysis showed relatively positive dynamics in female and male participants, although certain baseline differences were observed. Among the 3890 women who participated in the study, the mean VAS score before the session was 4.7 ± 2.2 points, with values ranging from 1 to 10 points. After the PF_R session, the mean score increased to 8.8 ± 1.3 points, with post-session values ranging from 5 to 10 points. These results indicate a significant improvement in the subjective emotional state of female participants and indicate a high degree of response to the intervention. The large proportion of women in the cohort may also reflect an increased willingness of women to participate in therapeutic practices aimed at emotional processing and psychophysiological self-regulation.

Among the 500 male participants, the baseline psychological state before the session was relatively high, with a mean VAS score of 5.6 ± 2.0 points and a range of 3 to 10 points. After the session, the mean score increased to 9.1 ± 1.0 points, with values ranging from 7 to 10 points. Although men reported a slightly more favorable baseline state compared to women, the post-session improvement was also significant, indicating that the PF_R method produced positive psycho-emotional effects despite gender differences. The narrow range and low variability of post-session scores among male participants may reflect the homogeneity of subjective results or differences in emotional self-report patterns between the sexes.

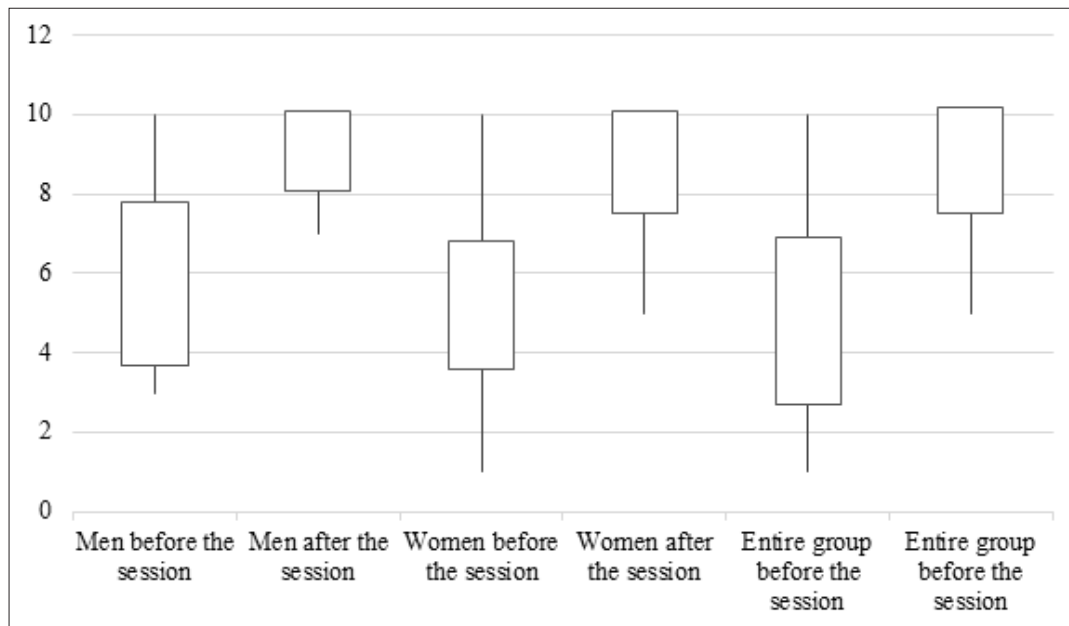


Figure 5 – Participant states measured by Visual Analogue Scale (VAS, 1–10 points): male, female, and total group outcomes (PF_R method application)

Note: Created by the authors based on research.

VAS-based assessments demonstrated statistically and clinically significant improvements in participants' subjective psychoemotional state after PF_R sessions. The magnitude of the positive changes observed across the cohort supports the hypothesis that exposure to PF_R meta-message may contribute to rapid modulation of emotional distress, reduction of internal tension, and improvement in perceived psychological well-being. These findings are consistent with the broader concept that nonverbal psychophysiological interventions can activate deep regulatory mechanisms involved in emotional processing, autonomic stabilization, and restoration of adaptive psychological function. Detailed comparative data on pre- and post-session VAS scores are shown in Figure 5. The indices demonstrated no significant associations with demographic factors (age, gender), presenting problems, or session reaction intensity (all $p > 0.05$).

Currently, it is assumed that each person forms a connection between their body and the surrounding world, including other people. This connection develops over a long period and contains many different associations formed through observation, imitation, and learning, creating an individual internal map of the world (of values) based on personal experience. Thus, an individual carries within themselves information accumulated over the years (their "internal pain"), which is stored not only in the form of fragmented memories in the amygdala but also at the level of the physical body in the form of muscle memory.

The therapeutic efficacy of PF_R emerges from its unique integration of mirror neuron activation with psychophysiological discharge phenomena. Building upon Sechenov's (1878) foundational work on reflex mechanisms, contemporary research by Damasio and colleagues has elucidated how emotional reactivation induces neuroplastic modifications in somatosensory integration areas. These findings are particularly relevant to PF_R's observed effects, where meta-message exposure precipitates a cascade of physiological responses mediated through the mirror neuron system.

The method's distinctive feature lies in its capacity to induce trance states through nonverbal meta-communication, thereby facilitating what appears to be a targeted discharge of psychosomatic tension. This process engages not only cortical mirror networks but also subcortical structures involved in emotional processing and autonomic regulation. Damasio's demonstration of emotion-related neuroplasticity in visceral representation areas provides a plausible explanation for the somatic manifestations frequently observed during PF_R sessions, including involuntary movements and autonomic responses.

Various studies have shown that electrical oscillations in the brain are accompanied by changes in the frequency spectrum of signals on an electroencephalogram (EEG). Depending on the waveform, amplitude, topography, frequency range, and type of response, different EEG rhythms are distinguished. This is supported by research in neuroscience, psychology, and clinical hypnotherapy. Numerous studies demonstrate that a trance state is associated with an increase in theta rhythm (4–7 Hz), while the hypnotic response (response to suggestion) is linked to changes in gamma oscillation patterns (30–100 Hz). The nature of these changes (enhancement, weakening, or temporary reorganization of gamma activity) varies depending on many factors, including the content of the suggestion, individual characteristics of the person, and musical accompaniment. Key mechanisms of music's impact on the trance state have been experimentally confirmed by studies. Music with a rhythm of 60–80 beats per minute and monotonous patterns promotes an increase in alpha rhythm (8–13 Hz), which corresponds to a state of relaxed wakefulness. Slower and repetitive sounds (such as shamanic drums, low-frequency humming) can stimulate theta activity (4–7 Hz), characteristic of deep trance, meditation, and hypnosis, which directly affects theta synchronization, facilitating entry into a trance. The monotony and cyclical nature of music reduce the activity of beta rhythms (13–30 Hz), associated with logical analysis. This promotes dissociation – detachment from external stimuli and immersion in internal experiences, which activates the limbic system and affects the amygdala and hippocampus, enhancing suggestibility [17].

The PF_R method is based on the discovery of the mirror neuron system and the ability to unconsciously and automatically “mirror” the emotions and actions of other people. When a participant views a meta-message, their brain unconsciously reproduces the recorded states, triggering the process of spontaneous psycho-physical unlocking.

It is likely that the primary neurophysiological mechanism of the meta-message is the activation of the mirror neuron system, leading to the emotional “contagion” of participants. This “mirroring” of each other occurs not only during the viewing of the meta-message but also during the session itself as participants observe others resolving their unconscious conflicts and expressing emotional and muscular blocks. In the context of PF_R, this can be interpreted as follows:

- ◆ the participant observes video recordings of abreactions (spontaneous movements, emotional reactions) of other people;
- ◆ the mirror neuron system of the observer automatically mimics these states, leading to the unlocking of suppressed emotions;
- ◆ a new neural pattern forms, replacing the maladaptive program.

In the meta-message, special attention is given to pupillary reactions and eye movement patterns. Pupil dilation correlates with emotional arousal. The meta-message uses frames that elicit involuntary pupillary responses, signaling the activation of unconscious processes. Gaze trajectories (saccades, fixations) are associated with access to different types of memory [18]. Visual triggers in the meta-message direct the participant's attention to the area of suppressed unconscious conflict.

According to the literature, microexpressions are involuntary facial expressions that are not subject to conscious control and occur as a result of suppressing or attempting to hide emotions. At this moment, the basal ganglia and the limbic system of the brain are activated [19]. The microexpressions of people in the meta-message unconsciously trigger the following processes in session participants:

- ◆ activate implicit memory (unconscious memories);
- ◆ trigger bodily reactions (muscle clamps, tremors, changes in breathing);
- ◆ create conditions for spontaneous abreaction – the release of blocked emotions and energy.

Neuroimaging studies have confirmed that the reconsolidation of emotional memories reproduces interoceptive patterns identical to the original event [9]. It has been established that different emotional states have discrete somatotopic representations. In particular, the dorsal sections of the brainstem showed selective activation when experiencing sadness and anger but did not respond to stimuli that evoke joy or fear.

These structures, phylogenetically located below the limbic system, reflect evolutionarily ancient mechanisms of emotional response, which are manifested in universal somatosensory metaphors (such as “a lump in the throat” or “goosebumps”). As modern research has shown, the co-activation of brainstem and limbic structures in response to existential threats triggers a cascade of reactions characterized by hyperarousal and the activation of emotional experiences.

Thus, the conducted analysis demonstrates that a specially structured video sequence containing a meta-message ensures the sequential transmission of the participant's psychophysiological states at various stages of the therapeutic process: before, during, and after the therapeutic session. This technology includes specific suggestive settings aimed at activating subconscious processes and identifying the deep-rooted causes of internal conflicts and emotional blocks.

The intervention's efficacy is based on the phenomenon of resonant interaction between the meta-message and the subconscious structures of mental processes. During the application of the dynamic PF_R method, activation of muscle reactions is observed, manifesting clinically as abreactive phenomena. An important advantage of this approach is its non-verbal nature, which significantly reduces psychological defenses and facilitates more effective release of emotional blocks. Within the framework of the applied PF_R method, the somatic expression of suppressed emotions and bodily tensions occurs through the following physiological manifestations: spontaneous motor reactions, involuntary muscle contractions, autonomic reactions (such as coughing, nausea, vomiting, increased salivation, and sweating), and behavioral manifestations (such as laughter, crying, screaming). The intervention facilitates unmediated access to embodied stress patterns, transcending conscious cognitive control.

The meta-message helps initiate the therapeutic processing and the resolution of unconscious conflicts, as unconscious resonance occurs and the participant automatically recognizes familiar, yet suppressed patterns. Mirror neurons activate corresponding emotions and bodily reactions, triggering abreactions. During the dynamic part of the session, the participant's body spontaneously reproduces movements associated with the muscle memory of trauma. During this process, there is a discharge (catharsis) and a re-experiencing of the conflict in a safe mode. After the abreaction, the participant interprets their sensations (interview), which reinforces a new, adaptive pattern.

Conclusion

The results of this study demonstrate that meta-messaging, as used within the framework of the Psychofunctional Release (PF_R) method, represents a complex multimodal psychotherapeutic stimulus capable of evoking distinct psychophysiological, emotional, motor, and autonomic responses. The observed effects suggest that the PF_R method may activate deep nonverbal mechanisms of emotional processing that operate beyond the level of conscious cognitive control. The high prevalence of trance-like states, spontaneous motor discharge, emotional release, autonomic activity, and subjective psychological improvement suggests that exposure to meta-messaging triggers systemic neuropsychological processes associated with latent trauma processing, autonomic regulation, and emotional integration. These results directly support the first conclusion of the study, namely, that the PF_R meta-messaging elicits a broad spectrum of interrelated psychophysiological responses that include emotional, motor, autonomic, and altered consciousness components.

The dominance of involuntary motor responses and trance-like states observed during the dynamic phase of PF_R sessions is of particular theoretical significance. Psychomotor discharge phenomena, including spontaneous limb movements, muscle contractions, facial grimacing, and body tension release, may reflect the activation of deeply encoded procedural and somatic memory systems associated with unresolved emotional experiences. Such observations support the second finding of the study, which is that PF_R activates deep nonverbal neuropsychological mechanisms associated with implicit emotional processing and sensorimotor discharge. From the perspective of active cognition and body-centered psychotherapy, traumatic experiences may be stored in implicit sensorimotor and autonomic patterns even in the absence of explicit verbal memories. The PF_R method appears to promote the temporary destabilization of these maladaptive psychophysiological patterns, thereby creating conditions for emotional relaxation and psychophysiological restructuring.

The emotional reactions documented in the study, including fear, crying, aggression, helplessness, laughter, depressive affect, and cathartic experiences, reflect the activation of emotionally salient memory networks and limbic regulatory systems. The simultaneous occurrence of emotional, motor, and autonomic responses suggests the involvement of integrated limbic-autonomic-sensorimotor circuits involved in trauma-related processing. These findings are consistent with contemporary

neuropsychological theories referenced in this paper and support the third conclusion of the study, according to which the responses observed during PF_R sessions are consistent with contemporary concepts such as embodied cognition, interoceptive regulation, mirror neuron activation, and predictive coding. In particular, the work of Nummenmaa et al. [20] on emotion-specific body activity patterns, the study of interoception by Critchley and Harrison [21], and the active inference system by Friston [22] provide a theoretical framework for understanding the neurobiological mechanisms underlying the psychophysiological changes induced by PF_R.

An important contribution of this study lies in the documented improvement in the subjective psycho-emotional state of the participants after the PF_R sessions. The statistically significant increase in the visual analogue scale (VAS) scores of both female and male participants indicates a significant decrease in psychological distress and an improvement in emotional well-being after exposure to meta-message. These results directly support the fourth conclusion of the study, which indicates the potential therapeutic efficacy of the PF_R method. The decrease in the variability of VAS scores after the session also indicates a partial convergence to a stable psycho-emotional state within the cohort, which may indicate a normalization of autonomic regulation and a decrease in internal emotional tension.

The multinational and predominantly group structure of the sessions also suggests the possible role of collective nonverbal synchronization in enhancing the therapeutic effects. Previous studies by Kule and Tschacher [23] have shown that nonverbal synchronization enhances emotional adaptation and interpersonal regulation in a therapeutic setting. Similar mechanisms may have contributed to the high frequency of synchronized emotional and motor responses observed during PF_R sessions. This observation is directly consistent with the fifth finding of the study, which emphasizes that group dynamics and nonverbal synchronization can significantly enhance emotional resonance and psychophysiological impact during PF_R interventions.

Additional phenomena reported by participants, including re-experiencing traumatic events, symbolic imagery, intuitive insights, and hallucinatory experiences, indicate the activation of implicit autobiographical memory systems and the temporary weakening of simple cognitive defense mechanisms. These findings are conceptually consistent with the research of Koch et al. [23], who demonstrated that body-centered therapeutic approaches can facilitate access to preverbal trauma-related material that is not accessible through traditional verbal psychotherapy. In this regard, these findings support the sixth conclusion of the study, which is that PF_R may be a promising adjunctive therapy for individuals with chronic psychological trauma, psychosomatic dysregulation, and emotional disorders that are resistant to verbal interventions alone.

In addition, several methodological limitations must be acknowledged. The study relied primarily on subjective self-report measures and observational data, and did not include objective neurophysiological assessment methods such as EEG, functional neuroimaging, heart rate variability analysis, galvanic skin response monitoring, or neuroendocrine markers. Furthermore, the lack of a control group and long-term follow-up limits the ability to determine the specificity and duration of the observed therapeutic effects. These limitations support the seventh conclusion of the study, which emphasizes the need for interdisciplinary studies that integrate psychology, neurology, psychophysiology, and embodied cognitive frameworks to determine the neurobiological correlates and long-term clinical efficacy of the PF_R method.

The convergence of emotional, motor, autonomic, and trance-related phenomena observed in a large multinational cohort suggests that the PF_R meta-message may capture universal neurobiological mechanisms underlying embodied emotional regulation and interpersonal resonance. The results of the current study extend the current understanding of nonverbal psychotherapeutic effects and provide empirical support for the hypothesis that deeply embodied mechanisms of emotional processing may serve as important therapeutic targets in the treatment of trauma-related and psychosomatic disorders.

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ПСИХО-ФУНКЦИОНАЛДЫ ҚАЛПЫНА КЕЛТІРУ ӘДІСІНДЕГІ МЕТА-ХАБАРЛАМА: НЕЙРОБИОЛОГИЯЛЫҚ МЕХАНИЗМДЕР ЖӘНЕ ҚОЛДАНУ ТӘЖІРИБЕСІ

Андатпа

Бұл мақалада мета-хабарламалар құбылысы психофункционалды блоктан шығару әдісінің (PF_R) орталық механизмі ретінде қарастырылады және оның болжамды нейробиологиялық және психофизиологиялық негіздері талданады. Зерттеудің мақсаты ішкі қатығыстарды шешумен, эмоционалды өңдеумен және психофизикалық реттеумен байланысты бейсаналық процестерді белсендірудегі мета-хабарламалардың рөлін анықтау болды. Әдістің теориялық моделі айна нейрондарының, вербалды емес коммуникация механизмдерінің, сананың транс күйлерінің және эмоционалды жауаптың нейродинамикасының заманауи тұжырымдамаларына негізделген. Зерттеуге 25 жастан 58 жасқа дейінгі 4390 адам қатысты, олардың 88,6%-ы әйелдер және 11,4%-ы ерлер болды. PF_R сессияларынан кейін қатысушылардың субъективті және бақыланған реакцияларына талдау жүргізілді. Субъектілердің көпшілігінде сананың транс және тета-доминантты күйлері, сондай-ақ айқын эмоционалды, моторлық және вегетативті реакциялар байқалды. Әдістің тиімділігі визуалды аналогтық шкала бойынша психологиялық жағдайдың статистикалық тұрғыдан айтарлықтай жақсаруымен расталды: орташа балл $4,8 \pm 2,3$ -тен $8,8 \pm 1,3$ -ке дейін өсті. Бұл нәтижелер мета-хабарламалардың вербалды емес әсер ету құралы ретінде жоғары терапиялық құндылығын көрсетеді және созылмалы психологиялық жаракат пен эмоционалды блоктарды емдеудегі PF_R әдісінің әлеуетін көрсетеді.

Тірек сөздер: мета-хабарлама, айна нейрондары, психофункционалды қайта құру, бейсаналық қатығыс, вербалды емес қарым-қатынас.

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МЕТА-СООБЩЕНИЕ В МЕТОДЕ ПСИХОФУНКЦИОНАЛЬНОЙ РАЗБЛОКИРОВКИ: НЕЙРОБИОЛОГИЧЕСКИЕ МЕХАНИЗМЫ И ОПЫТ ПРИМЕНЕНИЯ

Аннотация

В данной статье рассматривается феномен метасообщений как центральный механизм метода психофункциональной разблокировки (PF_R) и анализируются его предполагаемые нейробиологические и психофизиологические основы. Целью исследования было определение роли метасообщений в активации бес-

сознательных процессов, связанных с разрешением внутренних конфликтов, эмоциональной обработкой и психофизической регуляцией. Теоретическая модель метода основана на современных концепциях зеркальных нейронов, механизмов невербальной коммуникации, трансовых состояний сознания и нейродинамики эмоционального ответа. В исследовании приняли участие 4390 человек в возрасте от 25 до 58 лет, 88,6% из которых были женщинами и 11,4% мужчинами. После сеансов PF_R были проанализированы субъективные и наблюдаемые реакции участников. Большинство испытуемых испытывали трансовые и тета-доминантные состояния сознания, а также выраженные эмоциональные, моторные и вегетативные реакции. Эффективность метода была подтверждена статистически значимым улучшением психологического состояния по визуальной аналоговой шкале: средний балл увеличился с $4,8 \pm 2,3$ до $8,8 \pm 1,3$. Эти результаты демонстрируют высокую терапевтическую ценность метасообщений как средства невербального воздействия и показывают потенциал метода PF_R в лечении хронической психологической травмы и эмоциональных блоков.

Ключевые слова: метасообщение, зеркальные нейроны, психофункциональная разблокировка, бессознательный конфликт, невербальная коммуникация.

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MOTIVATIONAL FACTORS AND PSYCHOLOGICAL BARRIERS AMONG FACULTY MEMBERS IN THE CONTEXT OF THE DIGITAL TRANSFORMATION OF HIGHER EDUCATION: AN EMPIRICAL STUDY

Abstract

The digital transformation of higher education requires faculty members to adopt new technologies, yet significant variability persists in adoption rates. This study examined the relationships among motivation factors, psychological barriers, and technology adoption among university faculty members. Drawing on Self-Determination Theory (SDT) and the Technology Acceptance Model (TAM), we investigated how different types of motivation relate to technology anxiety, resistance to change, and digital self-efficacy. A cross-sectional survey was conducted with 154 faculty members from public, private, and national research universities. Participants completed validated instruments measuring academic motivation, technology anxiety (CARS), resistance to change, digital self-efficacy, technology acceptance, digital competence, and burnout (MBI). Data were analyzed using correlation analysis, ANOVA, multiple regression, and k-means cluster analysis. Results revealed that age was the dominant predictor across all regression models, explaining substantial variance in intrinsic motivation ($\beta = -1.09$), technology anxiety ($\beta = 0.71$), digital self-efficacy ($\beta = -0.81$), and technology acceptance ($\beta = -0.80$). External negative motivation showed strong positive correlations with psychological barriers ($r = .39-.46$) and negative correlations with self-efficacy ($r = -.55$). The cluster analysis provided four types of faculty members: Digital Leaders, Digital Enthusiasts, Pragmatic Adapters and Resistant Sceptics, based on the age of the participants.

Keywords: digital transformation, higher education, faculty motivation, self-determination theory, technology anxiety, resistance to change, digital self-efficacy.

Introduction

The fast technology advancement has been dramatically impacted the sphere of higher education [1, 2]. Universities in Kazakhstan has increasingly integrate learning management systems, video conferencing platforms, artificial intelligence tools, and cloud-based services into their educational practices [3]. This digital transformation, accelerated by the COVID-19 pandemic, has placed unprecedented demands on faculty members to adopt and effectively utilize new technologies

in their teaching practices [4, 5]. However, the success of institutional digitalization efforts ultimately depends on faculty members' willingness and ability to embrace these technological changes [6].

Despite substantial investments in educational technology infrastructure and training programs, significant variability persists in faculty technology adoption rates [7]. Research consistently demonstrates that many faculty members, particularly those in senior positions, exhibit reluctance or resistance to integrating digital tools into their pedagogical practices [8, 9]. Understanding the psychological factors that influence faculty technology adoption has therefore become a critical priority for higher education administrators and policymakers seeking to optimize digital transformation initiatives.

Self-Determination Theory (SDT) [10] provides a comprehensive framework for understanding human motivation that has been successfully applied to educational contexts. SDT distinguishes between intrinsic motivation—engaging in activities for their inherent satisfaction—and extrinsic motivation, which involves performing behaviors to obtain separable outcomes. Within extrinsic motivation, SDT further differentiates several regulatory styles along a continuum of autonomy: external regulation (behavior controlled by external rewards or punishments), introjected regulation (behavior motivated by internal pressures such as guilt or ego involvement), identified regulation (conscious valuing of a behavioral goal), and integrated regulation (full assimilation of identified regulations with one's values). Research applying SDT to technology adoption suggests that autonomous forms of motivation (intrinsic motivation and identified regulation) are associated with more sustained engagement with new technologies, greater persistence in overcoming technical challenges, and more innovative uses of digital tools [11]. Conversely, controlled forms of motivation (external and introjected regulation) have been linked to superficial technology use, compliance without genuine engagement, and higher rates of technology abandonment.

In the context of higher education digitalization, faculty members may be intrinsically motivated to explore new technologies due to intellectual curiosity or the satisfaction derived from innovative teaching. Alternatively, they may experience external pressure from institutional mandates, fear of negative evaluation, or concerns about being perceived as technologically incompetent. The quality of faculty motivation – not merely its quantity – may therefore be crucial in determining the success of digital transformation initiatives.

The Technology Acceptance Model (TAM) [12] has been the dominant theoretical framework for understanding technology adoption behavior. TAM posits that individuals' behavioral intentions to use technology are primarily determined by two cognitive factors: the usefulness and ease of use.

Extensive research has validated TAM across diverse populations and technological contexts [13]. In higher education settings, perceived usefulness has consistently emerged as a strong predictor of faculty technology adoption intentions, while perceived ease of use influences adoption primarily through its effect on perceived usefulness.

In addition, psychological barriers can be caused by technology anxiety. Technology anxiety can be seen among older adults and individuals with previous limited technology usage.

The CARS: The Computer Anxiety Rating Scale [14] examines three spheres of technology anxiety: interaction related anxiety, negative experience with technology and lack of confidence in usage. Oreg [15] conceptualized dispositional resistance to change as a stable personality trait comprising four dimensions: routine seeking (preference for stable, predictable environments), emotional reaction (tendency to experience negative emotions in response to change), short-term focus (preoccupation with immediate inconveniences of change), and cognitive rigidity (reluctance to consider alternative perspectives). Research has demonstrated that dispositional resistance to change negatively predicts technology adoption intentions and behaviors across various organizational contexts.

Digital self-efficacy – individuals' beliefs about their capability to successfully use digital technologies – may serve as either a facilitator or barrier to technology adoption depending on its level.

Given the aging demographic profile of faculty in many countries and consistent findings of age-related differences in technology attitudes and skills, understanding how age influences these relationships has important practical implications for designing targeted intervention strategies.

Third, few studies have attempted to identify distinct faculty profiles or typologies based on patterns of motivation and psychological barriers. Such typologies could inform the development of differentiated support strategies tailored to the specific needs of different faculty subgroups.

Fourth, while research has examined the consequences of technology adoption for student outcomes, less attention has been paid to the implications for faculty wellbeing. The potential links between technology-related stress, psychological barriers, and faculty burnout warrant investigation, particularly given concerns about increasing rates of burnout in academia.

The present study addresses these gaps by examining the relationships among motivation factors, psychological barriers, and technology adoption among university faculty members. Drawing on Self-Determination Theory, the Technology Acceptance Model, and research on psychological barriers, we investigate how different types of motivation relate to technology anxiety, resistance to change, and digital self-efficacy.

Materials and methods

The sample consisted of 154 university faculty members from various higher education institutions. Participants were recruited through purposive sampling from public universities (47.4%, $n = 73$), private universities (27.9%, $n = 43$), and national research universities (24.7%, $n = 38$). The sample included faculty from diverse academic disciplines: STEM fields (31.2%, $n = 48$), humanities (22.7%, $n = 35$), social sciences (19.5%, $n = 30$), medicine and health sciences (12.3%, $n = 19$), business and economics (11.0%, $n = 17$), and arts (3.2%, $n = 5$).

Most participants were female (60.4%, $n = 93$), with males comprising 39.6% ($n = 61$) of the sample. Participants ranged in age from 25 to over 65 years, distributed across five age groups: 25–34 years (17.5%, $n = 27$), 35–44 years (32.5%, $n = 50$), 45–54 years (24.7%, $n = 38$), 55–64 years (18.8%, $n = 29$), and 65 years and older (6.5%, $n = 10$).

Academic positions included lecturers (11.7%, $n = 18$), senior lecturers (28.6%, $n = 44$), associate professors (33.8%, $n = 52$), and full professors (26.0%, $n = 40$). Regarding academic qualifications, 40.3% ($n = 62$) held master's degrees, 14.9% ($n = 23$) held candidate of sciences degrees, 21.4% ($n = 33$) held PhD degrees, and 23.4% ($n = 36$) held doctoral degrees (Doctor of Sciences). The instruments used are: Academic Motivation Scale of Vallerand et al., intrinsic motivation questionnaire, Zamfir-Rean methodology, Computer Anxiety Rating Scale, Oreg's Resistance to Change Scale, digital-self-efficacy questionnaire, Technology Acceptance Model, Digital Competency Framework for Educators and Maslach Burnout Inventory (MBI).

Research participants were invited to the study via e-mail and WhatsApp invitations. The questionnaire was anonymous and took approximately 20–25 minutes.

The statistical analyses were conducted using R. Means, standard deviations, and ranges were calculated for all continuous variables. Frequency distributions were computed for categorical demographic variables. Pearson product-moment correlation coefficients were computed to examine bivariate relationships between motivation factors and psychological barrier variables. Given the number of correlations examined, a more conservative alpha level of .01 was adopted for interpretation, although coefficients significant at the .05 level are also reported. One-way analyses of variance (ANOVAs) were conducted to examine differences in motivation and psychological barrier variables across age groups (25–34, 35–44, 45–54, 55–64, and 65+ years), academic positions, and university types. Effect sizes were calculated using eta-squared (η^2), with values of .01, .06, and .14 interpreted as small, medium, and large effects, respectively (Cohen, 1988). Independent samples t-tests were conducted to examine gender differences. Effect sizes were calculated using Cohen's d .

Multiple linear regression analyses were conducted to identify predictors of key outcome variables: intrinsic motivation, technology anxiety, digital self-efficacy, technology acceptance, and emotional exhaustion. Predictor variables were selected based on theoretical relevance and preliminary correlation analyses. Age was included as a continuous predictor (coded as the midpoint of each age category: 30, 40, 50, 60, and 70 years). Standardized regression coefficients (β) were computed to allow comparison of predictor effect sizes. Multicollinearity was assessed using variance inflation factors (VIF), with values below 5.0 considered acceptable.

K-means cluster analysis was conducted to identify distinct faculty profiles based on motivation and psychological barrier variables. Six variables were included in the clustering solution: intrinsic motivation (total), external negative motivation, technology anxiety, digital self-efficacy, resistance to change, and digital competence. All variables were standardized (z-scores) prior to analysis to ensure equal weighting.

The optimal number of clusters was determined by examining the within-cluster sum of squares (elbow method) and the ratio of between-cluster to total variance. Solutions with 2 to 6 clusters were evaluated, and the final solution was selected based on interpretability and statistical criteria. The k-means algorithm was initialized with 25 random starts to ensure stable cluster assignments. Cluster profiles were characterized by examining mean scores on clustering variables and demographic composition.

Statistical significance was set at $\alpha = .05$ for all analyses unless otherwise specified. For multiple comparisons, appropriate corrections were applied, and effect sizes are reported alongside significance tests to facilitate interpretation of practical significance.

Results

Table 1 presents descriptive statistics for all key variables. Regarding motivation factors, intrinsic motivation scores were below the scale midpoint ($M = 3.22$, $SD = 0.76$, on a 1–7 scale), while external negative motivation was elevated ($M = 4.91$, $SD = 0.73$). Professional internal motivation was relatively low ($M = 2.52$, $SD = 0.68$, on a 1–5 scale), whereas external negative professional motivation was above average ($M = 3.62$, $SD = 0.69$). Concerning psychological barriers, technology anxiety was moderately high ($M = 3.58$, $SD = 0.57$, on a 1–5 scale), and resistance to change was elevated ($M = 4.15$, $SD = 0.61$, on a 1–6 scale). Digital self-efficacy was below the scale midpoint ($M = 4.18$, $SD = 1.14$, on a 1–10 scale). Digital competence was also relatively low ($M = 2.41$, $SD = 0.46$, on a 1–5 scale), and technology acceptance (TAM) scores were below average ($M = 3.22$, $SD = 0.75$, on a 1–7 scale).

Table 1 – Descriptive Statistics for Key Variables (N = 154)

Variable	M	SD	Min	Max	Scale
Motivation Factors					
Intrinsic motivation (total)	3.22	0.76	1.50	5.08	1–7
IM – Cognition	3.12	1.06	1.00	5.75	1–7
IM – Achievement	3.25	1.04	1.00	6.00	1–7
IM – Self-development	3.31	0.94	1.00	5.75	1–7
Identified regulation	4.52	0.55	3.50	6.00	1–7
Introjected regulation	4.94	0.94	2.50	7.00	1–7
External regulation	4.87	0.91	2.50	7.00	1–7
Amotivation	4.73	1.01	1.75	7.00	1–7
Internal professional motivation	2.52	0.68	1.00	4.25	1–5
External positive motivation	3.01	0.38	2.25	4.00	1–5
External negative motivation	3.62	0.69	1.50	5.00	1–5
Psychological Barriers					
Technology anxiety	3.58	0.57	2.25	4.75	1–5
Negative attitude toward technology	3.50	0.75	1.50	5.00	1–5
Confidence in technology use	2.45	0.68	1.00	4.00	1–5
Routine seeking	4.17	0.83	2.00	6.00	1–6
Emotional reaction to change	4.16	0.90	1.50	6.00	1–6
Short-term focus	4.25	0.79	2.25	5.75	1–6
Cognitive rigidity	4.04	0.91	1.00	6.00	1–6
Resistance to change (total)	4.15	0.61	2.56	5.56	1–6
Digital self-efficacy	4.18	1.14	1.50	6.80	1–10
Other Variables					
Digital competence	2.41	0.46	1.29	3.81	1–5
Technology acceptance (TAM)	3.22	0.75	1.58	5.00	1–7
Emotional exhaustion	3.77	0.78	1.78	5.56	0–6
Note: Compiled by the authors.					

Pearson correlation coefficients were computed to examine the relationships between motivation factors and psychological barriers. Table 2 presents the correlation matrix. The analysis revealed several significant associations.

Intrinsic motivation components showed consistent negative correlations with psychological barriers. Specifically, intrinsic motivation for cognition was negatively correlated with technology anxiety ($r = -.37, p < .001$), negative attitude ($r = -.30, p < .001$), and resistance to change ($r = -.39, p < .001$), while positively correlated with confidence ($r = .33, p < .001$) and digital self-efficacy ($r = .43, p < .001$). Similar patterns emerged for intrinsic motivation for achievement and self-development.

External negative motivation demonstrated strong positive associations with all barrier variables. The correlation between external negative motivation (SDT) and technology anxiety was $r = .46$ ($p < .001$), and its correlation with digital self-efficacy was $r = -.55$ ($p < .001$), representing the strongest association in the matrix. External negative professional motivation showed a comparable pattern, correlating positively with anxiety ($r = .39, p < .001$) and resistance ($r = .45, p < .001$), and negatively with self-efficacy ($r = -.49, p < .001$).

Internal professional motivation exhibited the opposite pattern, showing negative correlations with technology anxiety ($r = -.46, p < .001$) and resistance ($r = -.38, p < .001$), and a positive correlation with digital self-efficacy ($r = .48, p < .001$).

Notably, identified regulation showed no significant correlations with any psychological barrier variables (all r s $< .15$, all p s $> .05$), suggesting that internalized acceptance of digitalization’s value is independent of psychological barriers.

Table 2 – Correlation Matrix: Motivation Factors and Psychological Barriers (N = 154)

Variable	1	2	3	4	5
Motivation Factors	Anxiety	Neg. Attitude	Confidence	Resistance	Self-efficacy
1. IM – Cognition	-.37***	-.30***	.33***	-.39***	.43***
2. IM – Achievement	-.35***	-.42***	.34***	-.48***	.43***
3. IM – Self-development	-.34***	-.22**	.34***	-.40***	.34***
4. Identified regulation	.03	-.03	-.04	-.12	.09
5. Introjected regulation	.28***	.28***	-.27***	.26**	-.43***
6. External regulation	.45***	.32***	-.36***	.28***	-.44***
7. Amotivation	.22**	.13	-.13	.24**	-.27***
8. Internal professional motivation	-.46***	-.19*	.27***	-.38***	.48***
9. External positive motivation	.09	.16*	-.21*	.22**	-.25**
10. External negative motivation	.39***	.34***	-.35***	.45***	-.49***

Note: Compiled by the authors.

* $p < .05$. ** $p < .01$. *** $p < .001$.

One-way analyses of variance (ANOVAs) were conducted to examine differences across five age groups (25–34, 35–44, 45–54, 55–64, and 65+ years). As shown in Table 3, all comparisons yielded significant results with large effect sizes.

Intrinsic motivation significantly decreased with age, $F(4, 149) = 56.88, p < .001, \eta^2 = .60$. Young faculty (25–34 years) reported the highest intrinsic motivation ($M = 4.01, SD = 0.62$), while older faculty (65+) reported the lowest ($M = 1.93, SD = 0.38$). Conversely, external negative motivation significantly increased with age, $F(4, 149) = 25.89, p < .001, \eta^2 = .41$, with oldest faculty showing the highest scores ($M = 5.84, SD = 0.51$) compared to youngest faculty ($M = 4.35, SD = 0.68$).

Technology anxiety showed a strong age-related increase, $F(4, 149) = 34.94, p < .001, \eta^2 = .48$, with means ranging from 2.96 ($SD = 0.41$) in the youngest group to 4.33 ($SD = 0.36$) in the oldest group. Digital self-efficacy demonstrated the inverse pattern, $F(4, 149) = 65.43, p < .001, \eta^2 = .64$, declining from 5.57 ($SD = 0.71$) to 2.27 ($SD = 0.53$) across age groups.

The largest effect size was observed for digital competence, $F(4, 149) = 123.49, p < .001, \eta^2 = .77$, with a substantial decline from 3.00 (SD = 0.35) in the youngest group to 1.57 (SD = 0.21) in the oldest group. Resistance to change, $F(4, 149) = 54.41, p < .001, \eta^2 = .59$, and emotional exhaustion, $F(4, 149) = 16.60, p < .001, \eta^2 = .31$, also increased significantly with age.

Table 3 – Descriptive Statistics and ANOVA Results by Age Group

Variable	25–34 (n = 27)	35–44 (n = 50)	45–54 (n = 38)	55–64 (n = 29)	65+ (n = 10)	F	p	η^2
Intrinsic motivation	4.01	3.58	3.03	2.57	1.93	56.88	< .001	.60
External negative motivation	4.35	4.67	4.84	5.59	5.84	25.89	< .001	.41
Technology anxiety	2.96	3.42	3.68	4.06	4.33	34.94	< .001	.48
Digital self-efficacy	5.57	4.54	4.01	3.17	2.27	65.43	< .001	.64
Resistance to change	3.43	3.90	4.36	4.71	4.92	54.41	< .001	.59
Digital competence	3.00	2.61	2.28	1.94	1.57	123.49	< .001	.77
Technology acceptance	4.20	3.37	3.13	2.54	2.18	56.80	< .001	.60
Emotional exhaustion	3.12	3.59	3.86	4.27	4.67	16.60	< .001	.31

Note: Compiled by the authors.

Note: Effect size interpretation: $\eta^2 = .01$ (small), $\eta^2 = .06$ (medium), $\eta^2 = .14$ (large).

Compiled by the authors.

Independent samples t-tests were conducted to examine gender differences. No significant differences were found between female (n = 93) and male (n = 61) faculty members on any variable (all ps > .05). Effect sizes were uniformly small (Cohen’s d range: -0.21 to 0.20). Female faculty reported slightly higher intrinsic motivation (M = 3.27, SD = 0.78) compared to males (M = 3.14, SD = 0.74), $t(114.9) = 1.00, p = .322, d = 0.17$. Similarly, no significant differences emerged for technology anxiety, $t(117.3) = -0.57, p = .568, d = -0.10$, or digital self-efficacy, $t(121.1) = 1.21, p = .230, d = 0.20$.

Multiple regression analyses were conducted to identify predictors of key outcome variables. Table 4 summarizes the results of five regression models. The regression model predicting intrinsic motivation was significant, $F(6, 147) = 42.93, p < .001, R^2 = .64$. Age emerged as the strongest predictor ($\beta = -1.09, p < .001$), indicating that older faculty reported substantially lower intrinsic motivation. Self-efficacy was also a significant predictor ($\beta = -0.20, p = .016$), though the negative coefficient suggests a suppression effect when controlling for age. Technology acceptance showed a marginal negative association ($\beta = -0.14, p = .068$).

The model predicting technology anxiety was significant, $F(5, 148) = 27.51, p < .001, R^2 = .48$. Age was the only significant predictor ($\beta = 0.71, p < .001$), indicating that anxiety increases substantially with age. Neither external negative motivation (SDT: $\beta = 0.06, p = .415$; professional: $\beta = 0.02, p = .765$) nor self-efficacy ($\beta = 0.07, p = .508$) contributed unique variance when age was controlled.

The model predicting self-efficacy was significant, $F(5, 148) = 54.49, p < .001, R^2 = .65$. Age again emerged as the dominant predictor ($\beta = -0.81, p < .001$). Intrinsic motivation showed a significant negative relationship ($\beta = -0.18, p = .020$), which may reflect multicollinearity with age. External negative professional motivation ($\beta = -0.07, p = .250$) and resistance ($\beta = -0.07, p = .367$) were not significant predictors.

The model predicting technology acceptance (TAM) was significant, $F(5, 148) = 41.70, p < .001, R^2 = .59$. Age was the primary predictor ($\beta = -0.80, p < .001$). Intrinsic motivation showed a marginal effect ($\beta = -0.16, p = .070$), while self-efficacy ($\beta = 0.04, p = .630$), anxiety ($\beta = -0.03, p = .705$), and digital competence ($\beta = 0.03, p = .796$) were not significant.

The model predicting emotional exhaustion (burnout) was significant but explained less variance, $F(5, 148) = 13.94, p < .001, R^2 = .32$. Age showed a marginally significant positive trend ($\beta = 0.34, p = .061$), and technology anxiety exhibited a similar trend ($\beta = 0.16, p = .097$). Neither external negative motivation ($\beta = 0.04, p = .593$), self-efficacy ($\beta = -0.02, p = .858$), nor intrinsic motivation ($\beta = -0.08, p = .452$) were significant predictors.

Table 4 – Summary of multiple regression analyses

Outcome Variable	R ²	R ² adj	F	df	Significant Predictors
Intrinsic motivation	.64	.62	42.93***	6, 147	Age ($\beta = -1.09^{***}$), Self-efficacy ($\beta = -0.20^*$)
Technology anxiety	.48	.46	27.51***	5, 148	Age ($\beta = 0.71^{***}$)
Digital self-efficacy	.65	.64	54.49***	5, 148	Age ($\beta = -0.81^{***}$), Intrinsic motivation ($\beta = -0.18^*$)
Technology acceptance	.59	.57	41.70***	5, 148	Age ($\beta = -0.80^{***}$)
Emotional exhaustion	.32	.30	13.94***	5, 148	Age ($\beta = 0.34^\dagger$)

Note: Compiled by the authors.

Note: β = standardized coefficient. * $p < .10$. * $p < .05$. *** $p < .001$.

Compiled by the authors.

K-means cluster analysis was conducted to identify distinct faculty profiles based on motivation and barrier variables. Six variables were included: intrinsic motivation, external negative motivation, technology anxiety, digital self-efficacy, resistance to change, and digital competence. All variables were standardized prior to analysis. The optimal number of clusters was determined by examining within-cluster sum of squares and the ratio of between-cluster to total variance. A four-cluster solution was selected, explaining 58.6% of the total variance. Table 5 presents cluster profiles.

Cluster 1: Pragmatic Adapters (n = 46, 29.9%) showed moderate scores across all variables, with average intrinsic motivation (M = 3.19), moderate anxiety (M = 3.76), and average self-efficacy (M = 4.15). This cluster was predominantly composed of faculty aged 45–54 years (67.4%).

Cluster 2: Digital Enthusiasts (n = 42, 27.3%) demonstrated above-average intrinsic motivation (M = 3.59), low anxiety (M = 3.22), low resistance (M = 3.75), and relatively high self-efficacy (M = 4.52). This cluster was dominated by faculty aged 35–44 years (83.3%).

Cluster 3: Resistant Skeptics (n = 42, 27.3%) exhibited the lowest intrinsic motivation (M = 2.42), highest external negative motivation (M = 5.66), highest anxiety (M = 4.10), lowest self-efficacy (M = 2.97), and highest resistance (M = 4.77). This cluster was predominantly composed of senior faculty: 66.7% aged 55–64 and 23.8% aged 65+.

Cluster 4: Digital Leaders (n = 24, 15.6%) showed the most favorable profile: highest intrinsic motivation (M = 4.06), lowest external negative motivation (M = 4.20), lowest anxiety (M = 2.96), highest self-efficacy (M = 5.77), lowest resistance (M = 3.45), and highest digital competence (M = 3.01). This cluster was almost exclusively young faculty: 95.8% aged 25–34 years.

Table 5 – Cluster profiles: means and demographic composition

Variable	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Total
	Pragmatic	Enthusiasts	Skeptics	Leaders	Sample
n (%)	46 (29.9%)	42 (27.3%)	42 (27.3%)	24 (15.6%)	154
Profile Variables					
Intrinsic motivation	3.19	3.59	2.42	4.06	3.22
External negative motivation	4.80	4.67	5.66	4.20	4.91
Technology anxiety	3.76	3.22	4.10	2.96	3.58
Digital self-efficacy	4.15	4.52	2.97	5.77	4.18
Resistance to change	4.33	3.75	4.77	3.45	4.15
Digital competence	2.36	2.62	1.89	3.01	2.41
Age Distribution (%)					
25–34 years	0.0	9.5	0.0	95.8	17.5
35–44 years	30.4	83.3	0.0	4.2	32.5
45–54 years	67.4	7.1	9.5	0.0	24.7
55–64 years	2.2	0.0	66.7	0.0	18.8
65+ years	0.0	0.0	23.8	0.0	6.5

Note: Compiled by the authors.

The results revealed several consistent patterns:

1. Age as a universal predictor: Age emerged as the strongest predictor in all regression models, explaining substantial variance in intrinsic motivation ($\beta = -1.09$), technology anxiety ($\beta = 0.71$), self-efficacy ($\beta = -0.81$), and technology acceptance ($\beta = -0.80$).

2. Detrimental effects of external negative motivation: External negative motivation consistently showed positive correlations with all psychological barriers (anxiety, negative attitudes, resistance) and negative correlations with protective factors (confidence, self-efficacy), with effect sizes ranging from $r = .34$ to $r = -.55$.

3. Protective role of intrinsic motivation: All components of intrinsic motivation were negatively associated with barriers and positively associated with self-efficacy, supporting Self-Determination Theory predictions.

4. Independence of identified regulation: Notably, identified regulation showed no significant relationships with psychological barriers, suggesting that internalized acceptance of digitalization's importance operates independently of anxiety or resistance.

5. Distinct faculty typology: Four distinct faculty types were identified, strongly differentiated by age, with "Resistant Skeptics" (predominantly senior faculty) showing the most challenging profile for digital transformation initiatives.

Discussion

The research results showed number of patterns that can be important in the context of study of digital transformation and psychological barriers of faculty members.

First, age emerged as the dominant predictor across all regression models, explaining variance in intrinsic motivation ($\beta = -1.09$), technology anxiety ($\beta = 0.71$), digital self-efficacy ($\beta = -0.81$), and technology acceptance ($\beta = -0.80$). This finding is critically important for the further technology adoption in the sphere of higher education.

Second, the correlation analyses demonstrated that intrinsic motivation was consistently negatively associated with psychological barriers (technology anxiety, resistance to change) and positively associated with protective factors (digital self-efficacy, confidence). Conversely, external negative motivation showed the opposite pattern, with strong positive correlations with anxiety ($r = .46$) and resistance ($r = .43$), and a strong negative correlation with self-efficacy ($r = -.55$).

Third, identified regulation showed no significant correlations with psychological barrier variables, suggesting that internalized acceptance of digitalization's value operates independently of anxiety or resistance. Fourth, cluster analysis identified four distinct faculty types—Digital Leaders, Digital Enthusiasts, Pragmatic Adapters, and Resistant Skeptics—that were strongly differentiated by age.

The present findings strongly support the application of Self-Determination Theory to understanding faculty technology adoption. Consistent with SDT predictions [12], autonomous forms of motivation (intrinsic motivation) were associated with more favorable attitudes toward technology, lower anxiety, and higher self-efficacy. Faculty members who engage with educational technologies out of genuine interest and satisfaction appear to experience fewer psychological barriers and demonstrate greater openness to digital innovation.

Conversely, controlled forms of motivation (external and introjected regulation) were associated with heightened psychological barriers. The finding that external negative motivation showed the strongest negative correlation with digital self-efficacy ($r = -.55$) is particularly noteworthy.

Age was the strongest predictor in all five regression models, often overshadowing other theoretically important variables. This finding extends previous research on age-related differences in technology adoption by demonstrating that age effects persist even when controlling for motivation, self-efficacy, and other psychological factors.

The age effect observed in this study likely reflects multiple underlying processes. First, generational differences in technology exposure during formative years may create lasting differences in comfort and familiarity with digital tools. Second, age-related changes in cognitive flexibility and learning capacity may make technology adoption more effortful for older adults. Third, career stage differences may influence motivation: younger faculty seeking tenure may perceive stronger incentives

for technology adoption, while senior faculty with established reputations may see less benefit from changing their pedagogical approaches.

The four-cluster solution provides a practically useful typology for understanding faculty diversity in technology adoption. Each cluster represents a distinct profile with specific characteristics and support needs.

Digital Leaders (15.6%). This cluster, composed almost exclusively of young faculty (95.8% aged 25–34), represents the vanguard of digital transformation. These individuals demonstrate the highest intrinsic motivation, lowest anxiety, highest self-efficacy, and greatest digital competence. They require minimal direct support for technology adoption but represent valuable resources for peer mentoring and institutional change leadership.

Digital Enthusiasts (27.3%). Dominated by faculty aged 35–44 (83.3%), this cluster shows above-average intrinsic motivation and self-efficacy with relatively low anxiety and resistance. These individuals are positively disposed toward technology but may benefit from advanced training opportunities. They represent a natural bridge between Digital Leaders and more hesitant colleagues.

Pragmatic Adapters (29.9%). This largest cluster, predominantly aged 45–54 (67.4%), shows moderate scores across all variables. These faculty members are neither enthusiastic nor resistant; they adopt technologies when they perceive clear benefits and adequate support. For this group, demonstrating practical applications, providing hands-on training, and ensuring reliable technical support are essential.

Resistant Skeptics (27.3%). Composed primarily of senior faculty (66.7% aged 55–64, 23.8% aged 65+), this cluster presents the greatest challenge for digital transformation initiatives. With the lowest intrinsic motivation, highest anxiety, lowest self-efficacy, and highest resistance, these individuals require intensive, patient, and respectful support. Importantly, coercive strategies are likely to be counterproductive given the strong association between external negative motivation and psychological barriers.

Conclusion

The current research examined the psychological barriers of faculty members in the context of digital transformation of higher education. The findings showed that age can be seen as the dominant predictor of motivation, anxiety and self-efficacy. The created cluster typology can be seen as the practical framework for the development of further strategies.

Several limitations of this study should be acknowledged. First, the cross-sectional design precludes causal inferences. While the regression analyses identified predictors, the direction of causality cannot be established. Longitudinal research is needed to clarify causal mechanisms.

Second, the sample was drawn from universities in a single country, limiting generalizability to other cultural and institutional contexts. Technology attitudes and adoption patterns may differ across national contexts due to infrastructure differences, cultural values, and educational traditions. Cross-cultural replication studies are warranted.

Third, all measures were self-reported, introducing potential biases including social desirability and common method variance. Objective measures of technology use frequency and competence would strengthen future research. Additionally, the reliability coefficients for some subscales were below conventional thresholds, reflecting limitations that should be addressed in future studies.

Fourth, the age categories used in this study were relatively broad, potentially masking important within-group variability. Future research might examine age as a continuous variable or use finer-grained categories to better understand developmental trajectories.

Several directions for future research emerge from this study. First, longitudinal studies are needed to examine how motivation and psychological barriers change over time as faculty gain experience with digital technologies. Second, intervention studies should test whether strategies derived from this research—differentiated by age group, targeting identified regulation, avoiding coercive approaches—are more effective than traditional faculty development models.

The findings show that to successfully implement digital transformation in the higher education it is necessary to provide individualized strategies of digitalization for certain types of faculty members. The understanding of psychological dynamics can lead to more effective technology adoption scenarios and can facilitate digital transformation in higher education institutions.

Higher education institutions in Kazakhstan should not blindly follow the digitalization pathway, but understand the psychological needs and fears of their main driving source – faculty members.

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ЖОҒАРЫ БІЛІМ БЕРУДІҢ ЦИФРЛЫҚ ТРАНСФОРМАЦИЯСЫ КОНТЕКСТІНДЕГІ ОҚЫТУШЫЛАРДЫҢ МОТИВАЦИЯЛЫҚ ФАКТОРЛАРЫ МЕН ПСИХОЛОГИЯЛЫҚ КЕДЕРГІЛЕРІ: ЭМПИРИКАЛЫҚ ЗЕРТТЕУ

Андатпа

Жоғары білімнің цифрлық трансформациясы оқытушылардан жаңа технологияларды меңгеруді талап етеді, алайда олардың енгізілу деңгейі әлі де айтарлықтай өзгермелі болып қалуда. Бұл зерттеуде университет оқытушылары арасындағы мотивациялық факторлар, психологиялық кедергілер және технологияларды қабылдау арасындағы өзара байланыстар зерделенді. Өзін-өзі анықтау теориясына (ӨАТ) және технологияларды қабылдау моделіне (ТҚМ) сүйене отырып, біз мотивацияның әртүрлі түрлерінің психологиялық мазасыздықпен, өзгерістерге қарсылықпен және цифрлық өзін-өзі тиімділікпен қалай байланысатынын зерттедік. Мемлекеттік, жеке және ұлттық зерттеу университеттерінің 154 оқытушысының қатысуымен көлденең қималы сауалнама жүргізілді. Қатысушылар академиялық мотивацияны (АМШ), технологиялық мазасыздықты (ШКРК), өзгерістерге қарсылықты, цифрлық өзін-өзі тиімділікті, технологияларды қабылдауды, цифрлық құзыреттілікті және кәсіби тұтануды (МБИ) өлшейтін валидтелген құралдарды толтырды. Деректер корреляциялық талдау, дисперсиялық талдау (ANOVA), көп реттік регрессия және k-орташалар әдісімен кластерлік талдау арқылы өңделді. Нәтижелер жасты барлық регрессиялық модельдердегі үстем предиктор ретінде анықтады: ол ішкі мотивацияның ($\beta = -1,09$), технологиялық мазасыздықтың ($\beta = 0,71$), цифрлық өзін-өзі тиімділіктің ($\beta = -0,81$) және технологияларды қабылдаудың ($\beta = -0,80$) дисперсиясының едәуір бөлігін түсіндірді. Сыртқы теріс мотивация психологиялық кедергілермен күшті оң корреляция ($r = ,39-46$) және өзін-өзі тиімділікпен теріс корреляция ($r = -,55$) көрсетті. Айта кетерлігі, идентификацияланған реттеу кедергілермен маңызды байланыс танытпады. Кластерлік талдау оқытушылардың төрт түрін анықтады: «Цифрлық көшбасшылар», «Цифрлық энтузиастар», «Прагматикалық адаптерлер» және «Скептик-қарсыластар», олар жас бойынша айқын ажыратылды.

Тірек сөздер: цифрлық трансформация, жоғары білім, оқытушылардың мотивациясы, өзін-өзі анықтау теориясы, технологиялық мазасыздық, өзгерістерге қарсылық, цифрлық өзін-өзі тиімділік.

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МОТИВАЦИОННЫЕ ФАКТОРЫ И ПСИХОЛОГИЧЕСКИЕ БАРЬЕРЫ ПРЕПОДАВАТЕЛЕЙ В КОНТЕКСТЕ ЦИФРОВОЙ ТРАНСФОРМАЦИИ ВЫСШЕГО ОБРАЗОВАНИЯ: ЭМПИРИЧЕСКОЕ ИССЛЕДОВАНИЕ

Аннотация

Цифровая трансформация высшего образования требует от преподавателей освоения новых технологий, однако уровень их внедрения по-прежнему существенно варьируется. В данном исследовании изучались взаимосвязи между мотивационными факторами, психологическими барьерами и принятием технологий среди

университетских преподавателей. Опираясь на теорию самодетерминации (ТСД) и модель принятия технологий (МПТ), мы исследовали, каким образом различные типы мотивации соотносятся с технологической тревогой, сопротивлением изменениям и цифровой самоэффективностью. Было проведено поперечное анкетирование с участием 154 преподавателей государственных, частных и национальных исследовательских университетов. Участники заполняли валидированные инструменты для измерения академической мотивации, технологической тревожности (ШКРК), сопротивления изменениям, цифровой самоэффективности, принятия технологий, цифровой компетентности и профессионального выгорания (MBI). Данные анализировались с применением корреляционного анализа, дисперсионного анализа (ANOVA), множественной регрессии и кластерного анализа методом k-средних. Результаты показали, что возраст являлся доминирующим предиктором во всех регрессионных моделях, объясняя значительную долю дисперсии внутренней мотивации ($\beta = -1,09$), технологической тревожности ($\beta = 0,71$), цифровой самоэффективности ($\beta = -0,81$) и принятия технологий ($\beta = -0,80$). Внешняя негативная мотивация обнаружила сильные положительные корреляции с психологическими барьерами ($r = ,39-46$) и отрицательные корреляции с самоэффективностью ($r = -,55$). Примечательно, что идентифицированная регуляция не показала значимых связей с барьерами. Кластерный анализ позволил выделить четыре типа преподавателей: «Цифровые лидеры», «Цифровые энтузиасты», «Прагматичные адаптеры» и «Скептики-резистенты», которые существенно дифференцировались по возрасту.

Ключевые слова: цифровая трансформация, высшее образование, мотивация преподавателей, теория самодетерминации, технологическая тревожность, сопротивление изменениям, цифровая самоэффективность.

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DEVELOPING STUDENTS' MOTIVATION FOR SYSTEMATIC PHYSICAL ACTIVITY IN THE CONTEXT OF UNIVERSITY EDUCATIONAL ENVIRONMENT TRANSFORMATION

Abstract

The relevance of this study is determined by the need to form sustainable physical activity among students in the context of the transformation of the educational environment and the increasing role of digital and hybrid forms of learning. The aim of the study is to provide a theoretical justification and analysis of the formation of motivation for students' systematic physical activity in the conditions of the transformation of the university's educational environment. The research methodology is based on the integrated use of questionnaire surveys, the self-determination scale, physical activity satisfaction questionnaires, observation of digital activity, and analysis of class attendance. The scientific novelty of the work lies in the integration of motivational, environmental, and social factors to identify patterns in the formation of students' autonomous motivation in a transformed educational environment. As a result of the study, it was found that students' sustainable physical activity is determined by a combination of autonomous motivation, the form of the educational environment, and social support, including team formats and digital tools. The main conclusions of the study confirm the significance of a comprehensive approach to designing educational and digital interventions aimed at increasing student engagement and developing sustainable physical activity.

Keywords: student motivation, physical activity, educational environment, digital tools, social support, team dynamics.

Introduction

In contemporary research at the intersection of education and health, students' physical activity is increasingly conceptualized as a key determinant of human capital formation, academic achievement, and a sustainable lifestyle in the long term. Amid the transformation of the university educational environment driven by digitalization, the expansion of hybrid learning formats, and shifts in patterns of social interaction the challenge of maintaining and developing systematic physical activity among learners has become distinctly interdisciplinary, extending beyond the boundaries of traditional physical education.

In the scholarly literature, students' physical activity is progressively examined through the lens of motivational frameworks, most notably self-determination theory, which posits that the stability of behavioral practices is associated with the predominance of autonomous rather than controlled motivation [1]. Empirical evidence and systematic reviews further indicate that intrinsic motivation and the satisfaction of basic psychological needs autonomy, competence, and relatedness serve as robust predictors of regular physical activity in student populations [2, 3]. At the same time, the educational environment is emphasized as a contextual factor that can either support or constrain students' motivational resources.

In recent years, increasing attention has been devoted to the transformation of the university educational environment as an integrated set of spatial, organizational, digital, and social-communicative conditions shaping students' behaviors and attitudes. Studies addressing changes in lifestyle and interaction patterns during periods of intensified digitalization and pandemic-related restrictions point to an ambivalent effect: on the one hand, flexibility and personalization of the educational process are strengthened; on the other, the risks of insufficient physical activity and increased sedentary behavior rise, potentially accompanied by weakened everyday social ties [4, 5]. Accordingly, the purposeful design of an educational environment oriented not only toward academic outcomes but also toward the maintenance of students' physical activity and well-being becomes increasingly critical.

For the higher education system of the Republic of Kazakhstan, the relevance of this issue is further amplified by institutional transformations, the implementation of digital educational platforms, and a reconsideration of universities' roles in fostering a healthy and socially active generation. Despite the existence of individual studies on the physical activity of university youth, the field still lacks a sufficiently systematized analysis of the relationships among students' motivational characteristics, features of the transformed educational environment, and social factors, including team dynamics and forms of support. This gap necessitates a comprehensive study integrating motivational, environmental, and social parameters.

The aim of the present study is the theoretical substantiation and analysis of the formation of students' motivation for systematic physical activity in the context of the transformation of the university educational environment.

To achieve this aim, the study addresses the following objectives:

- ◆ to analyze theoretical approaches to understanding motivation for students' physical activity;
- ◆ to identify features of the transformation of the university educational environment that are relevant to the formation of physical activity;
- ◆ to determine students' motivational profiles and their association with different forms of the educational environment;
- ◆ to establish the influence of social support and team-based interaction formats on the sustainability of physical activity;
- ◆ to examine the relationship between autonomous and controlled motivation across different educational conditions.

The theoretical significance of the study lies in advancing an interdisciplinary approach to the analysis of students' physical activity through the integration of motivational theories and the concept of the educational environment. The practical significance is determined by the applicability of the findings to the design of educational, physical education, and digital interventions aimed at increasing student engagement and fostering sustainable physical activity practices within higher education.

In recent pedagogical and educational psychology research, the formation of motivation for physical activity is increasingly viewed as a complex phenomenon shaped by personal, social, and institutional determinants [6, 7]. Sáez et al. [6] demonstrated that students' intrinsic and extrinsic motives vary by gender and volume of activity, while sport satisfaction substantially influences the stability of physical activity habits. These findings were further developed in Vučković et al. [8], where post-COVID lockdown analysis revealed shifts in motivational profiles and highlighted the need to adapt university programs to facilitate students' return to systematic engagement in physical activity.

Within self-determination theory (SDT), motivation for physical activity is conceptualized as a continuum that includes autonomous and controlled forms of regulation [7, 9, 10]. Durán-Vinagre et al. [7] identified differences in regulation types across student groups and showed that autonomous motivation is directly associated with the regularity of physical activity, whereas controlled motivation

more often yields short-term outcomes. Gao [9] emphasizes that sustainable fitness behavior develops through internal goal internalization and a subjective sense of autonomy, positioning motivation not only as a psycho-educational construct but also as a value-based phenomenon. Ntoumanis and Moller [10] argue that an SDT-informed approach helps clarify the limitations of external incentives and foregrounds the role of supporting basic psychological needs in the educational environment, namely autonomy, competence, and relatedness.

A growing body of evidence confirms the significance of social factors and support in shaping motivation [11, 12]. Huang et al. [11] reported a synergistic effect of social support and exercise empowerment on students' progression through stages of behavior change, which is particularly relevant for group-based and team-based formats in university settings. In a meta-analysis of more than 50 studies, Wang et al. [12] showed that the impact of social support varies by gender, age, and cultural context, underscoring the need to account for local and institutional characteristics of the university environment.

The theoretical review further indicates that digitalization and the transformation of the educational environment create pedagogical opportunities for motivation while simultaneously generating new challenges. For example, studies by Sañudo et al. [13] and Nuss et al. [14] suggest that gamification, wearable trackers, and motivational interviewing can enhance autonomous motivation and student engagement, even when changes in actual physical activity are modest. Ash et al. [15] and Sul-toni et al. [16] emphasize that integrating digital tools into curricular and extracurricular programs is effective only when supported by social interaction and team dynamics, pointing to the necessity of comprehensive environmental design to foster sustainable motivational orientations.

In the Kazakhstani academic discourse, it is also emphasized that educational digitalization alters not only the organization of instruction but also patterns of student engagement and interaction, which requires attention to learners' digital culture when designing university interventions [17]. In addition, immersive digital solutions, such as 360-degree video, have been shown to strengthen the motivational component and engagement by increasing the perceived meaningfulness of activity and the sense of presence, which is methodologically important for developing digital tools that support sustainable behavioral practices among students [18].

A comparative view of domestic and international practices shows that international approaches to motivating students toward physical activity in hybrid educational environments are mainly built around mHealth solutions, gamification, wearable trackers, motivational interviewing, and the Health Promoting University model, where individual autonomy is strengthened through digital feedback, peer comparison, and institutional support [13–16, 21, 22]. In the Kazakhstani context, the emphasis is more strongly placed on the transformation of digital culture, the psychological well-being of learners, and the gradual integration of immersive and platform-based educational tools into the university environment [17, 18, 24]. Thus, while international practice demonstrates a more developed system of digital and organizational support for physical activity, domestic practice highlights the need to adapt these instruments to local institutional conditions, students' educational workload, and the social-communicative structure of the university environment.

At the level of institutional and campus environments, research confirms that physical infrastructure, access to active routes, and natural campus elements are directly associated with students' activity and motivation [19, 20]. In a systematic review, Ding et al. [19] found that well-designed campus environments facilitate the integration of physical activity into students' everyday behavior, while Lu et al. [20] demonstrated a statistical association between campus structure and indicators of student physical fitness. These findings highlight that motivation is formed not only within the individual but also through interaction with educational and physical environments.

At the macro level, the concept of the Health Promoting University (HPU) is increasingly treated as a systemic framework for supporting students' physical activity [21, 22]. Research suggests that integrating policy, infrastructure, programs, and student participation creates a sustainable environment for fostering motivation toward physical activity. Comellas-Sáenz et al. [22] applied cluster analysis to the implementation of HPU models across universities and identified typical implementation patterns, enabling the development of system-level strategies for motivational impact.

Overall, a critical review of the last five years of scholarship supports the following conclusions: (1) individual psycho-educational mechanisms of motivation are well documented, yet their linkage

to the educational environment remains insufficiently examined; (2) digital and hybrid tools can strengthen motivation when accompanied by social and institutional support; and (3) institutional and campus factors constitute necessary conditions for the development of sustainable motivation, confirming the value of an integrative approach that combines personal, social, and environmental determinants of students' physical activity.

Materials and methods

The study was conducted at S. Seifullin Kazakh Agrotechnical Research University among undergraduate students enrolled in diverse academic programs. At the initial stage, the empirical pool comprised 317 undergraduate students; however, 67 responses were not included in the final analysis because some respondents declined participation at one of the stages, did not complete all diagnostic blocks, or did not provide complete attendance and digital-activity records. The final sample therefore comprised 250 participants (130 women and 120 men) aged 18 to 21 years. Participant recruitment followed the principles of voluntary participation and anonymity, ensuring ethical compliance and minimizing the influence of social desirability bias. Particular attention was paid to sample representativeness in terms of academic workload and faculty distribution, which supports the generalizability of the findings to a heterogeneous educational environment within the university.

The institution-based design was selected because the study examined the motivational potential of a specific transformed educational environment, including physical education classes, hybrid learning elements, digital activity monitoring, and teacher-student interaction practices implemented within one university. Therefore, the expansion of the sample to other universities was identified as a relevant direction for future interuniversity research rather than as an additional empirical procedure at the current revision stage.

Participant selection considered not only demographic characteristics but also current levels of physical activity, prior sport participation, and access to digital and hybrid learning formats. This approach enables the identification of relationships between motivation and both individual and environmental factors, thereby providing a solid foundation for interpreting the study outcomes.

To assess motivation for physical activity and related determinants, a multi-instrument design was employed, integrating quantitative and qualitative methods as follows:

Motivation survey, an adapted version of instruments developed by Sáez et al. [6] and Vučković et al. [8], designed to capture intrinsic and extrinsic motives and their alignment with actual activity patterns.

Self-determination (SDT) scale, based on the models of Durán-Vinagre et al. [7] and Gao [9], measuring the degree of autonomous and controlled behavioral regulation. This instrument quantifies goal internalization and the stability of motivational orientations.

Physical activity satisfaction questionnaire, adapted from Yu et al. [23], capturing subjective leisure satisfaction and perceived self-efficacy in the context of physical engagement.

Monitoring of attendance and digital activity through wearable trackers, mobile applications, and learning platforms, consistent with approaches used by Nuss et al. [14] and Ash et al. [15]. This method allows subjective attitudes to be compared with objective behavioral indicators.

The selected toolkit offers several advantages, including comprehensive coverage of motivational, behavioral, and environmental factors, the capacity to integrate data from the digital environment, high validity and replicability, and alignment with contemporary research on student physical activity [11, 10].

The motivation questionnaire for systematic physical activity was grounded in a self-determination framework and comprised four thematic blocks: autonomous regulation, controlled regulation, social support, and subjective appraisal of physical activity. Respondents rated their agreement with each statement on a five-point Likert scale (1, strongly disagree; 5, strongly agree). The autonomous motivation block included the following items: I engage in physical activity because I enjoy it; Physical activity is a personal value for me; I view physical activity as a way of taking care of myself; I feel an inner need to be physically active. The controlled motivation block included: I engage in physical activity because teachers or people around me expect it; I engage in physical activity to avoid negative consequences (e.g., criticism or poor grades); Physical activity feels more like an obligation than a personal choice. The social support block included: My friends support me in being physically active;

Teachers encourage me to be physically active; It is easier for me to be physically active in a group or team. The subjective appraisal block included: I am satisfied with my current level of physical activity; I believe physical activity positively affects my well-being and academic performance. Item wording was adapted to the educational context of Kazakhstani universities while preserving the theoretical logic of the self-determination framework [6; 8], thereby supporting comparability and replication.

In line with the methodological logic of the study, data collection and analysis were organized into three stages:

Diagnostic stage, involving the collection of primary data through the motivation questionnaire, the SDT scale, the satisfaction questionnaire, and the recording of attendance and activity in digital applications. Baseline profiles of motivation and physical activity were established.

Analytical stage, focused on data integration and comparison, including the identification of associations among autonomous and controlled motives, social support, features of the educational environment, and actual activity indicators. Statistical procedures included correlational and comparative analyses, as well as cluster analysis to identify typical motivational profiles [10, 11].

Interpretive stage, dedicated to formulating conclusions regarding the influence of the educational environment and digital tools on students' sustainable motivation. At this stage, key determinants of physical activity were identified, creating a logical bridge to the subsequent presentation and interpretation of results.

Results and discussion

The results of the present study were obtained on the basis of a comprehensive analysis of data collected using the described instruments and methods. The student sample, motivation questionnaires, the self-determination scale (SDT), the physical activity satisfaction questionnaire, and digital indicators recorded using wearable devices (smartwatches, fitness bracelets, pedometers with an activity monitoring function, etc.) and mobile applications made it possible to identify both subjective attitudes and objective behavioral indicators. At the same time, the study results are interpreted on the basis of motivation questionnaire data, self-determination scale data, and objective indicators of physical activity. The questionnaire comprised four diagnostic blocks targeting autonomous regulation, controlled regulation, social support, and subjective appraisal of physical activity; these blocks provided the analytic basis for identifying students' motivational profiles.

The research procedure, which included diagnostic, analytical, and interpretive stages, made it possible to compare students' motivational profiles with actual physical activity, the influence of the educational environment, and the social context. The use of mixed methods (quantitative and qualitative) provided a foundation for the detailed systematization of results, the identification of patterns, and the preparation of an empirical basis for subsequent scientific discussion.

Students' motivational profiles

Based on data from the motivation questionnaire for systematic physical activity (adapted to the context of Kazakhstani universities within the logic of a self-determination approach), as well as indicators of the self-determination scale (SDT), an analysis of the motivational regulation of students' physical activity was conducted. Total scores across the diagnostic blocks of the questionnaire made it possible to form integral indicators of autonomous and controlled motivation, which served as the empirical basis for clustering the sample. As a result, three stable motivational profiles were identified, differing in the nature of behavioral regulation and the level of engagement in physical activity: autonomous motivation, controlled motivation, and low motivation (table 1).

Table 1 – Distribution of students by motivational profiles (N=250)

Motivational profile	Number of students	% of sample	Mean number of active days per week
Autonomous motivation	95	38%	4,6 ± 1,2
Controlled motivation	110	44%	3,2 ± 1,0
Low motivation	45	18%	1,4 ± 0,7

Note: Compiled by the authors.

Students with autonomous motivation demonstrate the most stable activity, which confirms the relationship between internal regulation and the regularity of physical activity [7, 9]. Controlled motivation provides a moderate level of activity; however, its effect depends on external incentives. Students with low motivation show minimal activity, which indicates the need for targeted pedagogical interventions.

The influence of the educational environment and digital tools

To identify and determine the influence of the educational environment on the level of students' physical activity, a comparative analysis of activity indicators was carried out under face-to-face, hybrid, and distance learning formats. The criteria used were the mean number of active days per week and the mean duration of physical activity per day, recorded on the basis of questionnaire data and objective digital indicators. The obtained results made it possible to identify statistically and substantively significant differences between educational environment formats, reflecting their unequal potential in supporting students' regular physical activity (table 2):

Table 2 – Mean physical activity of students depending on the educational environment format

Environment format	Mean number of active days per week	Mean activity time (min/day)	SD
Face-to-face classes	3,8 ± 1,1	52 ± 15	1,1
Hybrid classes	3,5 ± 1,0	49 ± 14	1,0
Distance classes	2,6 ± 0,9	37 ± 12	0,9
Note: Compiled by the authors.			

As observations showed, face-to-face and hybrid learning formats contribute to higher physical activity than fully distance learning. The use of wearable devices and mobile applications showed that digital support strengthens autonomous motivation, especially when integrating team and social elements [14, 15]. The statistically significant difference between face-to-face and distance formats confirms that the educational environment is a critical determinant of students' physical activity.

Social support and team dynamics

To assess the role of the social context in the formation of students' physical activity, a correlational analysis of the relationship between social support indicators and the level of actual motor activity was conducted. The analysis included support from peers and teachers, as well as students' participation in team and group formats of physical activity. The obtained data made it possible to identify the degree and direction of the influence of social factors on student engagement and to substantiate their significance as independent determinants of physical activity. The analysis showed that social support and participation in team formats significantly increase student engagement (table 3):

Table 3 – Correlation of social support with physical activity

Social support indicator	r - correlation with activity	p-value
Support from friends	0,42	<0,01
Support from a teacher	0,35	<0,05
Participation in team formats	0,48	<0,01
Note: Compiled by the authors.		

In table 3, the coefficient r reflects the strength and direction of the correlation relationship between social support indicators and the level of students' physical activity, whereas the p-value indicates the statistical significance of the identified relationships. Values of $p < 0,05$ and $p < 0,01$ indicate a high degree of reliability of the obtained results and allow the identified correlations to be interpreted as statistically significant. Positive values of the coefficient r indicate a direct relationship: an increase in the level of social support and involvement in team formats is accompanied by an increase in students' physical activity indicators.

The highest correlation is observed between team formats and the level of physical activity, which emphasizes the synergistic effect of social support and autonomous motivation [11, 12]. The data confirm the need to include team elements and structured support in physical activity programs.

Based on the obtained data, three groups of determinants of physical activity can be identified:

Motivational: autonomous and controlled motivation, subjective satisfaction with physical activity.

Environmental: the format of the educational environment (face-to-face, hybrid, distance learning), the availability of infrastructure, digital activity monitoring tools.

Social: support from teachers and peers, participation in team and group activities.

The aim of the study was to identify and substantiate the mechanisms underlying the formation of students' motivation for systematic physical activity in the context of transformation of the university educational environment. Particular attention was devoted to examining the relationships among students' motivational profiles, characteristics of the educational environment (face-to-face, hybrid, distance), the use of digital tools, and the role of social support. The study is intended to establish a scientifically grounded basis for designing educational and digital interventions that enhance students' sustainable physical activity.

The results showed that the distribution of students' motivational profiles substantially affects the regularity of physical activity. Students with autonomous motivation demonstrated the highest number of active days per week, which corroborates the conclusions of Durán-Vinagre et al. [7] and Gao [9]. Controlled motivation produced a moderate level of activity, but its effect was unstable, while students with low motivation exhibited minimal activity [6, 8].

The association between motivation and the educational environment is manifested through differences in activity across face-to-face, hybrid, and distance learning formats. Face-to-face and hybrid formats are associated with higher physical activity, while digital tools (wearable devices, mobile applications) strengthen autonomous motivation, especially when team elements are integrated [14, 15, 13].

It is important to consider that the effectiveness of digital tools in the university environment depends not only on their functionality but also on whether instructional design supports intrinsic motivation and learners' psychological well-being. In the Kazakhstani context, it has been shown that learning motivation functions simultaneously as an indicator and a condition of psychological well-being, which increases the requirements for a motivation-supportive environment [24]. In applied terms, this means that trackers, applications, and digital monitoring should be combined with practices of autonomy support and positive social interaction in order to strengthen autonomous regulation and reduce the dependence of physical activity on external incentives.

The influence of social support and team dynamics was confirmed by correlational evidence: participation in team formats and the availability of support from instructors and peers are associated with higher activity levels [11, 12]. These results demonstrate that students' sustainable behavior is formed through the combination of personal autonomous motivation, the educational environment, and social factors.

Comparative indicators of autonomous and controlled motivation reveal that autonomous motivation ensures systematic and sustainable physical activity, whereas controlled motivation more often depends on external incentives and has a short-term character. The findings are consistent with the research of Ntoumanis and Moller [10] and Gao [9], confirming the universality of SDT logic in the formation of sustainable motivation across different educational contexts.

The reliability of the results was ensured through the integration of subjective and objective indicators, including motivation questionnaires, the SDT scale, the physical activity satisfaction questionnaire, monitoring of digital activity, and attendance. The comparison of these data makes it possible to interpret appropriately the relationship between motivational profiles, the educational environment, and social determinants.

In addition, comparison of the obtained results with international and regional studies supports their robustness, as similar patterns have been identified in the works of Durán-Vinagre et al. [7], Gao [9], Ntoumanis and Moller [10], Huang et al. [11], Sañudo et al. [13], and Ash et al. [15].

From a comparative perspective, the results of the present study are consistent with international practices in which students' motivation is strengthened through the combination of autonomy-

supportive pedagogy, digital monitoring, social comparison, and peer-based activity formats [13, 14, 15]. However, unlike many international models where hybrid educational environments are supported by established institutional health-promotion policies and campus-wide digital ecosystems [21, 22], the Kazakhstani university context requires a more gradual and pedagogically mediated integration of such tools. In this respect, domestic practice should not simply reproduce international models, but should adapt them to local educational schedules, students' academic workload, the availability of digital infrastructure, and the role of instructors as direct motivators of physical activity [17, 18, 24].

The results of the study have direct practical significance for:

- ◆ physical education instructors, to use evidence on motivational profiles to adapt classes and incorporate team formats;
- ◆ university administrations, to develop programs and digital solutions that increase student engagement and to adjust instructional formats;
- ◆ students, to build a sustainable habit of systematic physical activity and to increase satisfaction and self-efficacy.

The study provides a rationale for integrating motivational, environmental, and social factors into educational strategies and digital tools, thereby ensuring a long-term increase in physical activity within the contemporary university environment.

In the future, the study may be expanded in several directions:

- ◆ long-term tracking of the stability of autonomous motivation and students' physical activity habits;
- ◆ examination of the effects of individualized digital programs on motivation and behavior;
- ◆ cross-cultural research on student motivation and social support;
- ◆ evaluation of the effectiveness of the educational environment within the Health Promoting University concept [21, 22];
- ◆ involvement of specialists in pedagogy, psychology, and digital educational platforms for a comprehensive analysis of mechanisms of motivation formation and sustainable physical activity.

It is evident that these research prospects provide a foundation for developing targeted programs, strategies, and interventions aimed at strengthening students' health and activity in the context of a transformed educational environment in Kazakhstani universities.

Conclusion

In the present study, the key objective was achieved, namely to substantiate theoretically and empirically the mechanisms underlying the formation of students' motivation for systematic physical activity in the context of transformation of the university educational environment. Based on a comprehensive analysis of data, including motivation questionnaires, the self-determination scale, physical activity satisfaction questionnaires, monitoring of digital activity, and class attendance, the key determinants of students' behavior and their interaction with the educational environment were identified.

The main results of the study can be summarized as follows:

The distribution of motivational profiles showed that 38 percent of students demonstrate autonomous motivation, 44 percent demonstrate controlled motivation, and 18 percent demonstrate low motivation. Autonomous motivation ensures the highest regularity of physical activity, whereas controlled motivation depends on external incentives and has a short-term character.

The relationship between motivation and the educational environment is manifested in the fact that face-to-face and hybrid learning formats contribute to higher levels of students' physical activity. Digital tools (mobile applications, wearable devices) strengthen autonomous motivation, especially when team and social elements are integrated.

The influence of social support and team dynamics was confirmed by high correlation values between participation in team formats, support from instructors and peers, and the level of physical activity. These results demonstrate the synergistic effect of personal autonomous motivation and the social environment.

Comparative indicators of autonomous and controlled motivation confirmed that the sustainability of physical activity directly depends on students' intrinsic motivation, whereas external incentives can only provide short-term support for activity.

Thus, the scientific and practical significance of the study allows the following points to be emphasized:

- ♦ the study data provide a rationale for a comprehensive approach to designing physical activity educational programs that integrates motivational, environmental, and social factors;
- ♦ the practical application of the findings is important for physical education instructors, academic program coordinators, university administrators, and developers of digital educational tools;
- ♦ the results can be used to adapt physical education courses, implement hybrid and digital learning formats, organize team-based activities, and develop support strategies for students with low motivation.

Prospects for further research are associated with expanding the temporal and substantive scope of analyzing the formation of students' sustainable physical activity. In particular, long-term monitoring of the dynamics of autonomous motivation and the consolidation of behavioral habits is of scientific interest, as it enables the identification of stable trajectories of physical activity during university study. A promising direction is the development and testing of individualized digital programs aimed at supporting autonomous motivation while accounting for personal and environmental factors. Substantial potential is offered by cross-cultural comparative research focusing on the influence of the educational environment and social support on students' physical activity across different sociocultural contexts. In addition, an important task remains the evaluation of the effectiveness of implementing the Health Promoting University concept and integrating motivational tools into university educational strategies as an element of a systemic approach to building a health-preserving educational environment.

In methodological terms, further research should expand the empirical base through interuniversity comparison and the inclusion of students from different institutional environments. This will make it possible to verify whether the patterns identified at S. Seifullin Kazakh Agrotechnical Research University are reproduced in other universities and to compare domestic practice more systematically with international models of motivation support in hybrid educational environments.

Overall, the study confirms that the formation of students' sustainable physical activity is possible only through the integrated interaction of motivational profiles, the educational environment, and social support, thereby creating a scientifically grounded basis for further pedagogical, organizational, and digital interventions in university practice.

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УНИВЕРСИТЕТТІҢ БІЛІМ БЕРУ ОРТАСЫН ТРАНСФОРМАЦИЯЛАУ ЖАҒДАЙЫНДА СТУДЕНТТЕРДІҢ ЖҮЙЕЛІ ДЕНЕ БЕЛСЕНДІЛІГІНЕ МОТИВАЦИЯСЫН ДАМУ

Андатпа

Бұл мақалада университеттің білім беру ортасы цифрландыру, гибриді оқыту және әлеуметтік өзара әрекет формаларының өзгеруі жағдайында студенттердің жүйелі дене белсенділігіне мотивациясын қалыптастыру мәселесі қарастырылады. Зерттеудің мақсаты – жоғары оқу орнының трансформацияланған білім беру ортасында студенттердің дене белсенділігіне тұрақты мотивациясының қалыптасу механизмдерін теориялық және эмпирикалық тұрғыдан негіздеу. Зерттеу әдіснамасы сауалнама, өзін-өзі айқындау шкаласы, дене белсенділігіне қанағаттану сауалнамасы, сабаққа қатысу көрсеткіштері мен цифрлық белсенділікті бақылау деректерін кешенді қолдануға сүйенеді. Зерттеу нәтижелері автономды мотивацияның, білім беру ортасының форматының және әлеуметтік қолдаудың студенттердің тұрақты дене белсенділігіне елеулі әсер ететінін көрсетті. Командалық форматтар мен цифрлық құралдарды біріктіру студенттердің қатысуын арттырып, ішкі мотивацияны нығайтады. Зерттеудің ғылыми құндылығы мотивациялық, әлеуметтік және орта факторларын біртұтас талдау арқылы студенттердің денсаулық сақтау мінез-құлқын дамытуға бағытталған педагогикалық және цифрлық интервенциялар үшін негіз ұсынуымен айқындалады.

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РАЗВИТИЕ МОТИВАЦИИ СТУДЕНТОВ К СИСТЕМАТИЧЕСКОЙ ФИЗИЧЕСКОЙ АКТИВНОСТИ В УСЛОВИЯХ ТРАНСФОРМАЦИИ УНИВЕРСИТЕТСКОЙ ОБРАЗОВАТЕЛЬНОЙ СРЕДЫ

Аннотация

В статье рассматривается проблема формирования мотивации студентов к систематической физической активности в условиях трансформации университетской образовательной среды, цифровизации, гибридного обучения и изменения форм социального взаимодействия. Цель исследования заключается в теоретическом и эмпирическом обосновании механизмов формирования устойчивой мотивации студентов к физической активности в современной образовательной среде вуза. Методология исследования основана на комплексном применении анкетирования, шкалы самоопределения, опросника удовлетворенности физической активностью, анализа посещаемости занятий и мониторинга цифровой активности. Результаты показали, что устойчивая физическая активность студентов определяется сочетанием автономной мотивации, формата образовательной среды и социальной поддержки. Интеграция командных форматов и цифровых инструментов способствует повышению вовлеченности студентов и усилению внутренней мотивации. Научная ценность исследования состоит в комплексном анализе мотивационных, социальных и средовых факторов, а практическая значимость связана с возможностью разработки педагогических и цифровых интервенций, направленных на укрепление здоровьесберегающего поведения студентов.

Ключевые слова: мотивация студентов, физическая активность, образовательная среда, цифровые инструменты, социальная поддержка, командная динамика.

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ПСИХОЛОГИЧЕСКИЕ ПРЕДИКТОРЫ ПРЕДПРИНИМАТЕЛЬСКОГО ЛИДЕРСТВА СТУДЕНТОВ

Аннотация

В статье представлены результаты эмпирического исследования психологических предикторов предпринимательского лидерства у студентов (N=319). Целью исследования является анализ корреляционной структуры личностных характеристик (лидерских способностей, готовности к риску, параметров стрессоустойчивости и локуса контроля) у студентов, ориентированных на предпринимательскую деятельность, для построения концептуальной модели предикторов предпринимательского лидерства. Исследование проведено с использованием теоретического анализа, методик: Perceived Stress Scale, PSS-10, «Уровень субъективного контроля» (УСК), «Диагностика лидерских способностей», опросника А. Шуберта (RSK). С помощью корреляционного анализа (коэффициент Спирмена) установлено, что ядро предпринимательского потенциала формируется за счет синергии лидерских способностей, готовности к риску ($r = 0.238$; $p < 0.01$) и механизмов активного противодействия стрессу ($r = 0.162$; $p < 0.01$). Выявлена отрицательная взаимосвязь между перенапряжением и лидерским потенциалом ($r = -0.113$; $p < 0.05$), что подчеркивает роль психологической адаптации. Установлено, что субъективный локус контроля образует целостную когнитивную систему, однако в современных условиях (поколение Z) он выступает скорее фоновым фактором, нежели прямым драйвером предпринимательства. Полученные данные позволяют сконструировать трехкомнатную модель предпринимательского лидерства, включающую лидерское ядро, блок стрессовой адаптации и систему субъективного контроля.

Ключевые слова: предпринимательское лидерство, готовность к риску, стрессоустойчивость, локус контроля, студенческая молодежь, психологические предикторы.

Введение

Трансформация современной экономики смещает фокус подготовки кадров в сторону формирования проактивности и способности действовать в условиях высокой неопределенности. В связи с этим изучение психологических особенностей студентов с предпринимательскими намерениями позволяет выявить специфические механизмы их саморегуляции, способствующие успешной профессиональной реализации.

Студенческий возраст является сензитивным периодом для кристаллизации профессиональных намерений, однако реализация лидерского потенциала в академической среде часто сталкивается с барьерами высокой неопределенности и когнитивной перегрузки. Исследование синергии волевых качеств, таких как готовность к риску, и когнитивно-поведенческих механизмов адаптации (стрессоустойчивости) позволяет выявить внутренние ресурсы, трансформирующие теоретические намерения студентов в реальную проактивную позицию.

Реализация модели предпринимательского университета предполагает не только передачу знаний, но и культивирование лидерского потенциала нового типа. В условиях глобальной нестабильности традиционные модели руководства уступают место предпринимательскому лидерству. Данный подход позволяет рассматривать лидерские компетенции как ресурс для адаптации бизнес-структур к меняющимся внешним вызовам, объединяя в себе стратегическое видение и инновационный поиск.

В современной зарубежной литературе акцент смещается с изолированного изучения личностных черт предпринимателя на синергетические эффекты его компетенций. Современные исследователи Renko и его соавторы рассматривают предпринимательское лидерство не как статичную характеристику, а как динамический процесс мобилизации ресурсов и создания ценности в условиях перманентной турбулентности рынка [1]. В рамках концепции предпринимательской ориентации (Entrepreneurial Orientation), развиваемой в трудах Wales & Gupta, инновационность и проактивность лидера неотделимы от его способности оперировать рисками, преобразуя их из источника деструктивного стресса в катализатор стратегического обновления организации. Таким образом, возникает необходимость переосмысления классических предикторов эффективности будущего предпринимателя с учетом вызовов современной бизнес-среды [2].

Авторы, исследовавшие предпринимательские намерения студентов Латинской Америки, отмечают, что обучение предпринимательству способствует развитию лидерских способностей, поскольку оно воспитывает личностные (когнитивные и межличностные способности) и функциональные (ориентированные на результаты) компетенции, а также стимулирует проактивность и способность к принятию риска [3]. Однако в современных условиях этого недостаточно. Лидерство в предпринимательской среде неразрывно связано с готовностью к риску. Как отмечают современные исследования Lumpkin & Dess, риск выступает медиатором, преобразующим теоретический лидерский потенциал в реальные бизнес-действия [4].

Второй важный аспект – психологическая устойчивость. В отличие от наемных работников предприниматели сталкиваются с более высоким уровнем ответственности и неопределенности. Теория когнитивной оценки Р. Лазаруса и концепция жизнестойкости С. Мадди позволяют предположить, что успешные будущие предприниматели воспринимают стрессогенную среду не как угрозу, а как пространство возможностей. Эффективные копинг-стратегии (активное противодействие стрессу) становятся необходимым условием для сохранения лидерских позиций и предотвращения психоэмоционального перенапряжения [5, 6].

Традиционно, начиная с работ Дж. Роттера, внутренний локус контроля рассматривался как ключевой драйвер предпринимательской активности. Интернальность в области достижений и неудач формирует когнитивную базу ответственности [7]. Несмотря на обширную теоретическую базу, посвященную предпринимательству, современные условия требуют пересмотра роли классических психологических предикторов. Если традиционно центральное место в профиле лидера отводилось интернальному локусу контроля, то для современного поколения студентов (Generation Z) данный фактор может приобретать характер базовой презумпции, уступая место более динамичным характеристикам – оперативной готовности к риску и способности активному противодействию стрессу. Научный поиск в данном направлении ориентирован на построение многокомпонентной модели, где лидерское ядро поддерживается системой психологической адаптации, обеспечивающей устойчивость будущего предпринимателя в условиях глобальной турбулентности.

Материалы и методы

В исследовании приняли участие студенты ($N = 319$), планирующие в будущем заниматься предпринимательской деятельностью. Выборка была сформирована целевым методом: в нее вошли обучающиеся, имеющие выраженные предпринимательские намерения. Разделение студентов на данную группу позволило минимизировать влияние факторов, характерных для лиц, ориентированных на работу по найму, и сосредоточиться на внутренних механизмах лидерского потенциала будущих предпринимателей. Для диагностики психологических характеристик был использован комплекс надежных и валидных психодиагностических инструментов. Для

оценки уровня психологического стресса и субъективного восприятия жизненных ситуаций как непредсказуемых и неподконтрольных использовалась шкала воспринимаемого стресса (Perceived Stress Scale, PSS–10) в адаптации В.А. Абабкова. Методика позволяет измерить степень, в которой текущие жизненные события превышают адаптационные ресурсы: шкала «Перенапряжение» отражает отсутствие контроля и наличие негативных реакций на стрессовые ситуации. Шкала «Противодействие стрессу» отражает способность субъекта справляться с трудностями и контролировать свои реакции. Респонденты оценивают частоту своих состояний за последний месяц по 5-балльной шкале (от 0 – «никогда» до 4 – «очень часто»). При обработке результатов баллы по «положительным» пунктам (шкала противодействия) инвертируются, после чего подсчитывается общий суммарный балл – индекс уровня воспринимаемого стресса (УВС). Суммарный показатель УВС варьируется в диапазоне от 0 до 40 баллов: 0–13 баллов – низкий уровень стресса; 14–26 баллов – умеренный (средний) уровень стресса; 27–40 баллов – высокий уровень воспринимаемого стресса. Для получения объективного показателя уровня воспринимаемого стресса использовалась стандартная процедура пересчета: баллы по субшкале «Противодействие стрессу» были реверсированы, что позволило объединить их с показателями шкалы «Перенапряжение» в единый индекс УВС.

Для диагностики локуса контроля использовалась методика «Уровень субъективного контроля» (УСК), разработанная Е.Ф. Бажиним, Е.А. Голыкиной, Л.М. Эткиндр на основе концепции локуса контроля Дж. Роттера. Методика предназначена для оценки степени интернализации-экстернализации субъективного контроля в различных жизненных ситуациях и широко применяется в научных психологических исследованиях. В настоящем исследовании применялся вариант А опросника, предусматривающий шкалу ответов от –3 до +3: –3 – «полностью согласен», –2 – «скорее не согласен», –1 – «скорее не согласен, чем согласен», +1 – «скорее согласен, чем не согласен», +2 – «скорее согласен», +3 – «полностью согласен». Подсчет результатов осуществлялся строго в соответствии с ключами методики УСК. Возможный максимальный балл 132, возможный минимальный балл – 132. Каждый пункт опросника имеет заданную направленность – на интернальность или экстернальность. При обработке данных ответы на утверждения, направленные на интернальность, суммировались с сохранением знака, тогда как ответы на утверждения, направленные на экстернальность, инвертировались в соответствии с ключом методики. Таким образом, при расчете итогового показателя учитывались как величина, так и знак каждого ответа. В результате обработки для каждого респондента рассчитывался сырой суммарный балл по шкале общего локуса контроля, который мог принимать как положительные, так и отрицательные значения. Положительные значения отражают более выраженную интернальность, отрицательные значения указывают на тенденцию к экстернальности.

Для оценки уровня лидерских способностей студентов была использована методика «Диагностика лидерских способностей» авторов Жарикова и Крушельницкого. Методика направлена на выявление уровня лидерских способностей и содержит вопросы, оценивающие ключевые аспекты лидерства, такие как принятие решений, коммуникативные навыки, управление командой и адаптивность. Респондентам было предложено 50 утверждений, на которые они должны были ответить «да» или «нет». Среднее значение в ответах отсутствует. Общий балл рассчитывался путем сложения положительных ответов. Результаты показывают степень проявления лидерских способностей: низкая, средняя, высокая, очень высокая.

Для исследования волевых и личностных качеств испытуемых в контексте их склонности к рискованному поведению была использована методика А. Шуберта (RSK). Данный опросник направлен на выявление самооценки смелости и готовности субъекта принимать решения в условиях неопределенности, где возможный неуспех сопряжен с негативными последствиями. Методика представляет собой опросник, состоящий из 25 вопросов-ситуаций, требующих от респондента оценки вероятности совершения тех или иных действий. Ответы фиксируются по 5-балльной шкале (от –2 до +2). Статистическая обработка проводилась на основе суммарного балла, позволяющего дифференцировать испытуемых по уровням готовности к риску: от высокой осторожности (менее –20 баллов) до высокой рискованности (более +20 баллов).

Исследование проводилось в два этапа. На первом этапе участники проходили анкетирование на предмет выявления их карьерных ориентаций и намерений в области бизнеса. На втором этапе проводилось комплексное тестирование с использованием вышеуказанных методик.

Участие было добровольным, анонимность данных гарантировалась. Статистическая обработка данных выполнялась с использованием пакета программ SPSS Statistics. Основным методом анализа выступил корреляционный анализ по коэффициенту Спирмена (r). Значимость связей проверялась на уровнях $p < 0,05$ (*) и $p < 0,01$ (**). Поскольку на предыдущем этапе было установлено, что распределение исследуемых переменных не соответствует нормальному закону распределения, для анализа взаимосвязей был использован непараметрический коэффициент ранговой корреляции Спирмена.

Результаты и обсуждение

Проведение корреляционного анализа именно в группе студентов с предпринимательскими намерениями обусловлено необходимостью выявления специфической структуры взаимосвязей личностных характеристик, составляющих психологический фундамент предпринимательской активности. Выделение данной группы в качестве самостоятельного объекта анализа позволяет исключить влияние интерферирующих факторов, характерных для студентов, ориентированных на наемный труд, и сфокусироваться на внутренних механизмах саморегуляции и лидерского потенциала будущих предпринимателей. В таблице 1 представлены результаты корреляционного анализа.

Таблица 1 – Результаты корреляционного анализа

Переменные	1	2	3	4	5	6	7	8
1. Уровень воспринимаемого стресса (УВС)	1,00							
2. Перенапряжение	,460**	1,00						
3. Противодействие стрессу	-,113*	-,484**	1,00					
4. Локус контроля	-,010	-,063	,213**	1,00				
5. Интернальность (ИД)	,009	-,054	,212**	,823**	1,00			
6. Интернальность (ИН)	-,011	-,053	,100	,639**	,288**	1,00		
7. Лидерские способности	-,027	-,113*	,162**	,099	,125*	-,008	1,00	
8. Готовность к риску	-,058	-,103	,077	,087	,006	,094	,238**	1,00
** Корреляция значима на уровне 0,01 (двухсторонняя)								
* Корреляция значима на уровне 0,05 (двухсторонняя)								
Примечание: Составлено авторами по результатам собственного эмпирического исследования.								

Статистическая обработка данных позволила выявить ряд закономерностей, значимость которых подтверждается на высоком уровне доверительной вероятности ($p < 0,01$). В частности, корреляционные связи, отмеченные символом (**), обладают максимальной степенью достоверности, что позволяет рассматривать их как устойчивые психологические детерминанты. Также была выявлена умеренная сила связи (*), она является статистически значимой на уровне ($p < 0,05$), что подтверждает наличие объективной зависимости между данными параметрами в исследуемой выборке. Данные таблицы показывают взаимосвязи показателей стрессоустойчивости. Анализ результатов показал наличие положительной корреляционной связи между стрессоустойчивостью и перенапряжением ($p = 0,460$; $p < 0,001$). Данный результат может свидетельствовать о том, что повышение уровня стрессовых нагрузок сопровождается усилением общего психофизиологического напряжения.

В то же время была выявлена слабая отрицательная корреляционная связь между стрессоустойчивостью и способностью противодействовать стрессу ($p = -0,113$; $p < 0,05$). Это может указывать на определенные различия между пассивной устойчивостью к стрессовым воздействиям и активным стратегиям совладения со стрессом. Полученные результаты свидетельствуют о том, что стрессоустойчивость и стратегии противодействия стрессу представляют

собой различные психологические механизмы адаптации личности. Далее данные таблицы показывают взаимосвязи показателей стрессового реагирования. Анализ показал наличие выраженной отрицательной корреляционной связи между перенапряжением и противодействием стрессу ($r = -0,484$; $p < 0,001$). Данная взаимосвязь свидетельствует о том, что повышение способности к активному противодействию стрессовым ситуациям сопровождается снижением уровня психоэмоционального перенапряжения. Это соответствует положениям современной психологии стрессоустойчивости, согласно которым использование эффективных копинг-стратегий способствует снижению негативных последствий стрессовых воздействий.

Обнаруженная структура связей внутри блока стресс-реагирования указывает на сложную динамику адаптационных процессов у студентов с предпринимательскими намерениями. Отрицательная взаимосвязь между интегральным индексом воспринимаемого стресса и шкалой «Противодействие стрессу» ($r = -0,113$, при $p < 0,05$) в сочетании с выраженной обратной связью между перенапряжением и противодействием стрессу ($r = -0,484$, при $p < 0,01$) подтверждает правомерность концепции «психологического капитала». В контексте исследований Cardon высокая способность к активному совладанию выступает внутренним буфером. Студенты данной выборки демонстрируют не пассивную резистентность к нагрузкам, а готовность к активному преобразованию стрессовой ситуации. Это объясняет, почему высокий уровень требований среды не приводит у них к автоматическому росту психоэмоционального перенапряжения, а воспринимается как операциональный вызов [8].

Также была выявлена слабая отрицательная корреляционная связь между перенапряжением и лидерскими способностями стрессу ($r = -0,113$; $p < 0,05$). Данный результат может свидетельствовать о том, что высокий уровень психоэмоционального напряжения может оказывать негативное влияние на проявление лидерских качеств.

Если рассматривать взаимосвязи локуса контроля, то анализ показал наличие положительной корреляционной связи между способностью противодействовать стрессу и локусом контроля ($r = 0,213$; $p < 0,01$). Это свидетельствует о том, что студенты с более выраженным внутренним локусом контроля чаще используют активные стратегии совладения со стрессовыми ситуациями. Также были выявлены сильные положительные корреляционные связи между локусом контроля и интернальностью в достижениях ($r = 0,823$; $p < 0,001$) и локусом контроля и интернальностью в неудачах ($r = 0,639$; $p < 0,001$). Полученные результаты подтверждают структурную целостность конструкта субъективного контроля, поскольку интернальность в достижениях и интернальность в неудачах выступают его составными компонентами. Данные таблицы показывают наличие слабой положительной корреляционной связи между интернальностью в достижениях и лидерскими способностями ($r = 0,125$; $p < 0,05$). Это может свидетельствовать о том, что студенты, склонные приписывать свои успехи собственным усилиям, чаще демонстрируют лидерские качества. Данный результат соответствует положениям теории Дж. Роттера, согласно которой внутренний локус контроля способствует формированию активной жизненной позиции и инициативности.

Одним из наиболее значимых результатов корреляционного анализа является выявление положительной корреляционной связи между лидерскими способностями и готовностью к риску способностями ($r = 0,238$; $p < 0,001$). Полученная связь свидетельствует о том, что студенты с более выраженными лидерскими качествами демонстрируют более высокую склонность к принятию рискованных решений. Данный результат полностью соответствует положениям современной психологии предпринимательства, согласно которым лидерство и готовность к риску являются ключевыми характеристиками предпринимательской личности. Согласно теории Д. Макклелланда, предприниматели характеризуются высокой потребностью в достижениях, что проявляется в стремлении к постановке сложных целей и готовности принимать решения в условиях неопределенности.

Вопреки некоторым теоретическим ожиданиям, в исследуемой выборке не обнаружено значимой корреляции между локусом контроля и уровнем стресса. Это позволяет предположить, что в студенческой среде само по себе наличие внутренней ответственности не является автоматическим буфером против стрессовых переживаний. Также было обнаружено отсутствие связи «интернальность в неудачах – лидерство». Это может означать, что лидерский потенциал будущих предпринимателей не связан с паттернами атрибуции неудач. Это указывает на то, что

лидерская позиция студентов базируется на поведенческих установках и стремлении к достижениям, а не на рефлексии причин отрицательного опыта.

Особый интерес вызывает зафиксированное отсутствие прямых статистически значимых корреляций общего локуса контроля с готовностью к риску и уровнем воспринимаемого стресса. Данный эмпирический факт позволяет развивать выдвинутое во введении предположение о трансформации роли интернальности у современного поколения студентов. В условиях цифровизации и сетевых бизнес-моделей классическая концепция жесткого индивидуального контроля Дж. Роттера уступает место феномену «распределенной ответственности». Как показывают современные исследования предпринимательских намерений, внутренний локус контроля сегодня выступает базовым «гигиеническим» фактором успешной социализации студента, но теряет свою дифференцирующую силу как специфический драйвер склонности к риску. Лидерский потенциал будущих предпринимателей центрируется вокруг оперативной психологической гибкости и поведенческой готовности к неопределенности, а не вокруг генерализованной убежденности в подконтрольности внешнего мира.

Полученные в ходе исследования данные позволяют верифицировать ряд положений современной психологии предпринимательства и уточнить специфику психологического профиля современного студента. Отсутствие корреляции между уровнем воспринимаемого стресса и лидерскими способностями ($p = -0.027$; $p > 0.05$) в группе будущих предпринимателей подтверждает концепцию «эмоциональной гибкости» (Дэвида) [9]. В отличие от наемных работников, у которых стресс часто блокирует лидерскую активность, студенты-предприниматели демонстрируют способность к функциональному разделению эмоциональных переживаний и профессионально важных качеств. Это также согласуется с теорией предпринимательской бдительности (Kirzner), согласно которой фокус внимания индивида направлен на поиск возможностей, что делает его менее чувствительным к внешним стрессорам [10, 11]. Низкие баллы по PSS-10 у студентов – будущих предпринимателей указывают на то, что неопределенность воспринимается ими не как угроза, а как естественная среда обитания. Что коррелирует с исследованиями когнитивной оценки Р. Лазаруса в контексте бизнес-среды.

Синергия лидерства и готовности к риску ($p = 0.238$; $p < 0.01$) вписывается в современную модель «Предпринимательской ориентации». Согласно исследованиям (Lumpkin) риск является медиатором, превращающим лидерский потенциал в реальные действия [4]. В нашей выборке подтверждается, что риск для будущих предпринимателей – это не деструктивное поведение, а компонент проактивного поведения. Лидер берет на себя риск как необходимую ответственность за группу, что подтверждается положительной связью этих параметров с «Противодействием стрессу» ($p = 0.162$). Данная закономерность подтверждается исследованиями теории мотивации достижений Д. Макклелланда, теорией предпринимателя-инноватора, Й. Шумпетера, психологией предпринимательства Хизрича [12]. Также результаты соответствуют современным представлениям о роли психологической устойчивости в предпринимательской деятельности. Исследование 156 малых и средних предприятий в Нигерии подтвердило, что семейная поддержка и высокая сплоченность значимо снижают уровень предпринимательского стресса, подчеркивая необходимость укрепления внутрисемейных связей и развития навыков самоконтроля для защиты психологического благополучия бизнесменов [13].

Высокая отрицательная корреляция между противодействием стрессу и перенапряжением ($p = -0.484$) подтверждает теорию жизнестойкости С. Мадди. Студенты-предприниматели используют активные стратегии совладания, которые предотвращают переход стресса в стадию дистресса или выгорания. Современные исследования указывают на то, что предприниматели обладают специфическим «психологическим капиталом», состоящим из надежды, оптимизма и устойчивости. В наших данных этот капитал проявляется через низкую чувствительность к стрессу при сохранении высокой оперативной готовности к риску [14, 15].

Отсутствие связей локуса контроля с лидерством и риском может быть интерпретировано через призму концепции «распределенной ответственности» в современной цифровой экономике. Если в классических работах Х. Роттера интернальность была ключевым отличием предпринимателя, то современные исследования (например в работах по Entrepreneurial Intentions) показывают, что у поколения Z внутренний локус контроля является базовой ценностью, общей для всех успешных студентов, независимо от их стремления в бизнес. Это делает локус

контроля «гигиеническим фактором», но не специфическим драйвером предпринимательства в 2020-х годах. Исследование учащихся в Джокьякарте выявило значимую положительную взаимосвязь между внутренним локусом контроля и предпринимательским намерением ($p = 0,030$), подтвердив, что вера в способность самостоятельно влиять на результат является важным предиктором готовности молодежи к созданию бизнеса [16]. Обращаясь к предпринимательскому контексту, стоит отметить исследование, в котором подчеркивается, что предпринимательское лидерство оказывает положительное влияние на предпринимательский успех. Лидеры в этой области активны, готовы идти на риск, мыслят инновационно и стремятся реализовывать эффективные стратегии. Их лидерские навыки становятся важным ресурсом в конкурентной бизнес-среде, обеспечивая устойчивость и эффективность на рынке [17].

Исследования показывают, что студенты с выраженными лидерскими качествами демонстрируют более высокий уровень самооффективности и внутренней мотивации [18].

Синтез полученных корреляционных данных позволяет перейти от изолированного описания шкал к целостной трехкомпонентной модели психологического профиля студента-предпринимателя. Выделенные нами блоки (ядро лидерства, блок адаптации и система субъективного контроля) находятся в отношениях функциональной субординации. Интернальность в достижениях закладывает когнитивный базис инициативы, однако реальное развертывание лидерского потенциала критически зависит от волевого компонента – готовности к риску. С практической точки зрения это означает, что традиционные академические программы, сфокусированные исключительно на формировании личной ответственности за результат, имеют ограниченный эффект. Для реализации модели предпринимательского университета необходимы специализированные тренинговые площадки, направление на развитие волевых качеств, толерантности к неопределенности и навыков проактивного копинга.

Заключение

В целом результаты корреляционного анализа позволяют выделить несколько ключевых закономерностей. Во-первых, показатели локуса контроля, интернальности в достижениях и интернальности в неудачах образуют тесно связанную систему, отражающую структуру субъективного контроля личности.

Во-вторых, показатели стрессового реагирования (перенапряжение и противодействие стрессу) демонстрируют выраженную взаимосвязь, что подтверждает их принадлежность к единой системе психологической адаптации.

В-третьих, показатели лидерских способностей и готовности к риску демонстрируют статистически значимую взаимосвязь, что позволяет рассматривать их как ключевые психологические компоненты предпринимательского лидерства.

Центральным элементом модели выступают лидерские способности, которые демонстрируют статистически значимые связи с несколькими психологическими переменными:

- ♦ готовностью к риску ($p = 0.238$; $p < 0.01$);
- ♦ интернальностью в области достижений ($p = 0.125$; $p < 0,05$);
- ♦ противодействием стрессу ($p = 0.162$; $p < 0.01$).

Это позволяет рассматривать лидерские способности как ключевой психологический компонент предпринимательского лидерства. Лидерские навыки традиционно рассматриваются как психологический ресурс, связанный с инициативностью, ответственностью и способностью к принятию решений.

Вторым важным элементом модели является готовность к риску, которая демонстрирует положительную связь с лидерскими способностями. Эта взаимосвязь отражает фундаментальное свойство предпринимательской деятельности – способность принимать решения в условиях неопределенности. Было установлено, что противодействие стрессу связано с лидерскими способностями ($p = 0.162$), перенапряжение отрицательно связано с противодействием стрессу ($p = 0.484$). Это свидетельствует о том, что эффективные стратегии совладания со стрессом способствуют проявлению лидерских качеств.

Выявлены сильные связи: локус контроля – интернальность в области достижений ($p = 0.823$), локус контроля – интернальность в области неудач ($p = 0.639$). Эти связи подтверж-

дают структурную целостность конструкта субъективного контроля, описанного в теории Дж. Роттера (1966). Однако данный блок демонстрирует слабую связь с предпринимательским лидерством, что может указывать на его косвенную роль в формировании предпринимательских намерений студентов.

На основании проведенного анализа можно выделить три ключевых блока предикторов предпринимательского лидерства.

1. Ядро предпринимательского лидерства: лидерские способности и готовность к риску. Именно их взаимосвязь ($r = 0.238$, $p < 0.01$) формирует основу предпринимательского поведения. Лидерские способности выступают ключевым психологическим узлом, связывающим несколько личностных характеристик.

2. Психологическая адаптация: противодействие стрессу и перенапряжение. Это означает, что эффективные стратегии совладения со стрессом способствуют проявлению лидерских качеств, тогда как высокий уровень перенапряжения может снижать лидерский потенциал.

3. Система субъективного контроля: локус контроля, интернальность в достижениях, интернальность в неудачах. Этот блок формирует когнитивную основу ответственности за результаты деятельности, однако его связь с предпринимательским лидерством носит косвенный характер.

На основании результатов корреляционного анализа можно сделать вывод о том, что формирование предпринимательского лидерства связано прежде всего со следующими психологическими характеристиками: лидерские способности, готовность к риску, способность к противодействию стрессу. Полученные результаты позволяют рассматривать данные характеристики как потенциальные предикторы предпринимательского лидерства среди студентов.

Теоретическая значимость проведенного исследования заключается в интерпретации специфической структуры психологических ресурсов учащейся молодежи, детерминирующей формирование предпринимательского лидерства. Полученные результаты доказывают, что лидерский потенциал в данной выборке поддерживается не абстрактными установками контроля, а динамической системой психологической адаптации и готовности к принятию риска. Перспективы дальнейших исследований в данном направлении связаны с переходом от линейного корреляционного анализа к методам структурного моделирования. Это позволит верифицировать медиаторную роль готовности к риску и способности к противодействию стрессу в цепочке трансформации базовых личностных качеств студентов в устойчивые и продуктивные предпринимательские намерения.

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СТУДЕНТТЕРДІҢ КӘСІПКЕРЛІК КӨШБАСШЫЛЫҒЫНЫҢ ПСИХОЛОГИЯЛЫҚ ПРЕДИКТОРЛАЛЫ

Андатпа

Мақалада студенттердің (N = 319) кәсіпкерлік лидерлігінің психологиялық предикторларын эмпирикалық зерттеу нәтижелері ұсынылған. Зерттеудің мақсаты – кәсіпкерлік қызметке бағытталған студенттердің тұлғалық сипаттамаларының (лидерлік қабілеттері, тәуекелге дайындығы, стреске төзімділік параметрлері және бақылау локусы) корреляциялық құрылымын талдау және сол арқылы кәсіпкерлік лидерлік предикторларының тұжырымдамалық моделін құру. Зерттеу теорияқ талдау және келесі әдістемелерді қолдану арқылы жүргізілді: Perceived Stress Scale (PSS-10), «Субъективті бақылау деңгейі» (УСК), «Көшбасшылық қабілеттерді диагностикалау» әдістемесі және А. Шуберттің тәуекелге дайындық сауалнамасы (RSK). Корреляциялық талдау (Спирмен коэффициенті) көмегімен кәсіпкерлік әлеуеттің өзегі лидерлік қабілеттер, тәуекелге дайындық ($r = 0.238$; $p < 0.01$) және стреске белсенді қарсы тұру механизмдерінің ($r = 0.162$; $p < 0.01$) синергиясы есебінен қалыптасатына анықталды. Шамадан тыс ширьғу (перенапряжение) мен лидерлік әлеует арасындағы теріс байланыстың анықталуы ($r = -0.113$; $p < 0.05$) психологиялық бейімделудің

рөлін айқындай түседі. Субъективті бақылау локусы тұтас когнитивті жүйені құрайтыны дәлелденді, алайда қазіргі жағдайда (Z ұрпағы) ол кәсіпкерліктің тікелей драйвері емес, көбіне фондық фактор ретінде көрінеді. Алынған мәліметтер лидерлік өзекті, стреске бейімделу блогын және субъективті бақылау жүйесін қамтитын кәсіпкерлік лидерліктің үш компонентті моделін құрастыруға мүмкіндік береді.

Тірек сөздер: кәсіпкерлік лидерлік, тәуекелге дайындық, стреске төзімділік, бақылау локусы, студент жастар, психологиялық предикторлар.

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PSYCHOLOGICAL PREDICTORS OF ENTREPRENEURIAL LEADERSHIP AMONG STUDENTS

Abstract

The article presents the findings of an empirical study investigating the psychological predictors of entrepreneurial leadership among university students (N = 319). The aim of this research is to analyze the correlational structure of personality traits- specifically leadership abilities, risk-taking propensity, stress resistance parameters, and locus of control- in students with entrepreneurial intentions to develop a conceptual model of entrepreneurial leadership predictors. The study was conducted using theoretical analysis and the following instruments: the Perceived Stress Scale (PSS-10), the Subjective Control Level (SCL) measure, the Leadership Abilities Diagnostic technique, and A. Schubert's Risk Readiness Questionnaire (RSK). Using Spearman's rank correlation analysis, it was established that the core of entrepreneurial potential is formed through a synergy of leadership abilities, readiness to take risks ($r = 0.238$; $p < 0.01$), and mechanisms of active stress management ($r = 0.162$; $p < 0.01$). A negative correlation was identified between psychological strain (overstrain) and leadership potential ($r = -0.113$; $p < 0.05$), highlighting the critical role of psychological adaptation. The study further determined that while the subjective locus of control forms a coherent cognitive system, it functions as a background factor rather than a direct driver of entrepreneurship in the current socio-economic context (Generation Z). The data obtained allow for the construction of a three-component model of entrepreneurial leadership, comprising a leadership core, a stress adaptation block, and a system of subjective control.

Keywords: entrepreneurial leadership, risk-taking propensity, stress resistance, locus of control, university students, psychological predictors.

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INTEGRATING PSYCHOLOGICAL SUPPORT INTO PHYSICAL EDUCATION CLASSES: A PILOT INTERVENTION STUDY IN HIGHER EDUCATION

Abstract

Physical education in higher education is often associated with physical fitness, yet students' experience also depends on communication, peer interaction, instructor support, and emotional comfort. This pilot study examined whether a brief psychological support module integrated into regular physical education classes could improve students' perceived psychological support, engagement, and emotional well-being. A quasi-experimental pre-test/post-test design was used at Korkyt Ata Kyzylorda University over six weeks. Seventy-two undergraduate students completed both measurements. The module included emotional check-ins, pair and group tasks, supportive instructor feedback, and short post-class reflection. Data were collected using a questionnaire covering three areas: psychological support, student engagement, and emotional well-being. After the intervention, mean scores increased in all areas: psychological support from 3.18 to 3.76, engagement from 3.32 to 3.79, and emotional well-being from 3.21 to 3.68. Paired-samples t-tests confirmed reliable pre-test to post-test improvements, with moderate effect sizes. The data suggest that small support-oriented changes in physical education may strengthen students' engagement and emotional comfort, showing its psychological and pedagogical value.

Keywords: physical education, psychological support, student engagement, emotional well-being, higher education, intervention.

Introduction

Universities today are expected to offer more than academic instruction. They are also expected to pay attention to how students feel, how they adapt to the university environment, and how actively they take part in everyday academic life. This issue is far from secondary. Students enter higher education with different levels of confidence, emotional readiness, and personal pressure. For many of them, academic workload, unfamiliar social surroundings, and uncertainty about the future may influence not only learning outcomes, but also motivation and general well-being [1].

For this reason, student well-being has become part of a broader discussion about the quality of higher education. In earlier approaches, university success was often measured mainly through grades, attendance, and the completion of academic tasks. These indicators remain important. However, they do not fully reflect students' actual experience. A student may attend classes regularly and submit assignments on time, while still feeling anxious, isolated, or emotionally exhausted [2]. Physical education holds a particular place in this context. It differs from most other university subjects because it involves the body, communication, comparison with peers, teacher feedback, and emotional reactions within the same lesson. Some students feel relaxed and confident in such classes, whereas others may become shy, passive, or worried about being judged. For this reason, physical education should not be viewed only as a subject aimed at physical development. It can also become a learning space where psychological and pedagogical support emerges in a natural and practical form [3]. Research on physical activity supports this broader understanding. Studies have shown that physical activity interventions may reduce anxiety, stress, and depressive symptoms among university students. They can also support better well-being and a more stable emotional state [4, 5] physical exercise, as a rehabilitative therapeutic approach, appears to play a significant role in preventing poor mental health among students. This meta-analysis aims to evaluate the impact of physical activity interventions on the mental health status of university students. This study systematically searched PubMed, Cochrane Library, Web of Science, Embase, and Scopus for randomized controlled trials (RCTs). However, the influence of physical education cannot be explained only by the fact that students are physically active. Movement is certainly important, but it is only one part of the experience. The classroom atmosphere, the way the teacher gives feedback, the quality of peer interaction, and the feeling of being supported can also shape how students experience physical education psychologically [6].

This point is particularly relevant for regular university physical education classes. In practice, these classes are often organised around attendance, standard exercises, and physical performance. Such a format may work well for students who are already active, confident, and comfortable in movement-based settings. Yet it may be less supportive for students who feel physically unprepared, insecure, or uncomfortable in front of others. For them, small details can make a real difference: whether the instructor notices effort, whether group work is arranged respectfully, and whether mistakes are accepted calmly rather than treated as failure.

The present study starts from this practical problem. It does not propose a completely new instructional technology. Rather, it examines a short psychological support module that can be integrated into ordinary physical education classes. The module consists of simple elements: emotional check-ins, pair and group activities, supportive feedback from the instructor, and brief reflection at the end of the lesson. These elements do not replace physical activity. Instead, they change how the lesson is organised and experienced by students. The study was conducted with undergraduate students at Korkyt Ata Kyzylorda University. The intervention lasted six weeks. Its main purpose was to examine whether small changes in lesson organisation could improve students' perceived psychological support, engagement, and emotional well-being. In this sense, the study considers not only physical activity itself, but also the pedagogical conditions that surround it.

This study aimed to explore whether a short psychological support module, added to regular physical education classes, was associated with changes in students' perceived psychological support, engagement, and emotional well-being.

The following research questions were addressed:

1. How does students' perceived psychological support change after the intervention?
2. In what ways does the psychological support module relate to student engagement in physical education classes?
3. What changes occur in students' emotional well-being after the intervention?
4. How do students describe the supportive elements used during the physical education classes?

Literature Review

Physical education in higher education is commonly associated with health, movement, and physical fitness. This view is valid, but it does not capture the full meaning of the class. A physical education lesson is also a social and emotional situation. Students communicate with one another, observe their peers, respond to the teacher's feedback, and gradually form attitudes toward their own

abilities. In some cases, these experiences increase motivation and confidence. In other cases, they may lead to hesitation, discomfort, or withdrawal. For this reason, physical education should be viewed not only as a setting for exercise, but also as a pedagogical environment where students' psychological experience matters [7].

The psychological dimension of physical education can often be seen in ordinary classroom interactions. The same task may be explained in ways that either encourage students or make them feel uncertain. Feedback may help students notice their effort and progress, but it may also create pressure when it is based mainly on comparison. These details may seem small during the lesson, yet they can influence how students participate and how safe they feel in the learning process. In this context, psychological support does not refer to formal therapy. Rather, it means organising the lesson in a respectful, supportive, and emotionally safe manner [8].

Engagement is closely connected with this kind of support. In physical education, engagement cannot be reduced to attendance alone. A student may be present in class and still remain passive or avoid taking part in activities. Genuine engagement becomes visible when students participate in tasks, cooperate with peers, show interest, and stay involved until the end of the lesson. Supportive teaching can make such participation easier, particularly for students who do not feel physically strong, skilled, or confident [9].

Cooperative learning can make physical education more inclusive and less focused on direct comparison between students [10]. When students work in pairs or small groups, responsibility is shared, and participation no longer depends only on the strongest or most active members of the class. Students can support one another, try tasks with less fear of failure, and feel more involved in the lesson. This is especially relevant in university settings, where students often differ greatly in their physical background, confidence, and previous experience of physical education [11]. Another important idea is need-supportive teaching. In physical education, students are more likely to participate meaningfully when they feel capable, accepted, and safe from humiliation when mistakes occur. They also need to feel that they belong to the group. When the instructor recognises effort, gives clear instructions, and avoids unnecessary pressure, students may become more willing to take part in activities. In this way, motivation is shaped not only by the exercise itself, but also by the emotional climate created during the lesson [12] adolescents are insufficiently active, highlighting the need for effective strategies to enhance their activity levels. This study evaluated a web-based intervention program designed for physical education (PE).

Reflection can further strengthen the supportive role of physical education. It does not have to take much time. Even two or three minutes at the beginning or end of a class may help students notice their mood, energy level, and emotional changes after movement. For example, they may briefly answer what helped them participate or how they felt after the lesson. Such reflection is not intended as a diagnostic procedure. Its value is pedagogical: it helps students connect physical activity with their own emotional experience [13].

Reflective practice is also useful for the instructor. Short student responses can show whether the class feels comfortable, stressful, engaging, or too demanding. This information may help the teacher adjust future lessons. In this sense, reflection is more than a small activity added at the end of the class. It works as a simple feedback channel between students and the instructor [14].

Universities may not always have enough resources to introduce separate mental health programmes. However, physical education classes already exist in the curriculum, which creates a practical opportunity for support. Emotional check-ins, cooperative tasks, supportive feedback, and brief reflection can be built into the existing lesson structure [15]. These elements do not require expensive equipment or additional teaching hours. This study responds to this practical and research gap. Previous studies have discussed the importance of physical activity, motivation, support, and reflection. Less attention has been paid to how these elements can be combined within ordinary university physical education classes. Therefore, the present study tests a six-week psychological support module and examines whether it is associated with improvements in students' perceived support, engagement, and emotional well-being.

Materials and methods

This study used a pilot quasi-experimental design with a pre-test and post-test structure. It examined whether a short psychological support module, integrated into regular physical education classes, was associated with changes in students’ perceived psychological support, engagement, and emotional well-being.

The study did not seek to develop a new authorial technology. Its focus was more practical: to adapt several psychological and pedagogical support strategies to the existing format of physical education classes. These strategies included emotional check-ins, cooperative physical tasks, supportive instructor feedback, and short reflective activities.

The intervention was conducted at Korkyt Ata Kyzylorda University during regular physical education classes. This setting was chosen because physical education naturally combines movement, communication, participation, and emotional reactions. It therefore provided a suitable context for observing how students respond to support-oriented changes in lesson organisation. The participants were undergraduate students who attended physical education classes during the study period. The sample was formed through convenience sampling and included 72 students who completed both stages of measurement. Participation was voluntary. Students were informed that their responses would be used only for research purposes. Participants were included in the study if they regularly attended physical education classes and completed both the pre-test and post-test questionnaires. Students with medical restrictions were not required to take part in practical activities that could be unsuitable for their health condition.

The intervention was organised as a six-week psychological support module embedded into physical education classes. It was not taught as a separate programme. Instead, it was added to the usual lesson structure as a supportive pedagogical component. Each class included three stages. At the beginning of the lesson, students completed a short emotional check-in. This helped them notice their current mood, energy level, or readiness to participate. The main part of the lesson included pair and small-group physical activities. These tasks were used to encourage communication, peer support, and active involvement. At the end of the class, students completed a brief reflection on how they felt during the lesson and what helped them become more engaged.

Supportive feedback from the instructor was also part of the intervention. Attention was given not only to physical performance, but also to effort, participation, cooperation, and individual progress. Direct negative comparison between students was avoided. See the table 1.

Table 1 – The structure of the intervention

Week	Main focus	Support element
1	Introduction and light group activities	Emotional check-in
2	Pair and group tasks	Peer support
3	Team-based physical activities	Communication and inclusion
4	Stress-reducing movement activities	Relaxation and emotional regulation
5	Group challenge tasks	Motivation and engagement
6	Final integrative session	Reflection and post-test
Note: Compiled by authors.		

Data were collected through a questionnaire administered before and after the intervention. The questionnaire covered three areas: perceived psychological support, student engagement, and emotional well-being. The psychological support scale included items on instructor support, encouragement, respectful communication, and emotional safety. The engagement scale focused on students’ interest, participation, cooperation, and willingness to take part in physical education activities. The emotional well-being scale addressed mood, emotional comfort, stress reduction, and positive feelings after class.

Responses were rated on a five-point Likert scale, where 1 meant strong disagreement and 5 meant strong agreement. Higher scores reflected higher levels of psychological support, engagement, and

emotional well-being. In addition to the questionnaire, students answered short open-ended reflection questions after the intervention. These responses were used to better understand which parts of the programme students considered useful.

The study was carried out in three stages. At the first stage, students completed the pre-test questionnaire before the intervention. At the second stage, the six-week psychological support module was implemented during regular physical education classes. At the third stage, students completed the post-test questionnaire and wrote short reflections about their experience.

The same questionnaire was used at both measurement points so that changes in the selected variables could be compared. Students were asked to answer honestly, and their responses had no influence on their academic results. Quantitative data were analysed in JASP. Descriptive statistics were calculated for each variable. Cronbach’s alpha was used to assess the internal consistency of the scales. A paired-samples t-test was used to compare pre-test and post-test scores. If the normality assumption was not met, the Wilcoxon signed-rank test was considered as a non-parametric alternative. Effect sizes were calculated to estimate the practical meaning of the observed changes.

Correlation analysis was conducted to examine the relationships between psychological support, engagement, and emotional well-being. Open-ended responses were analysed through simple thematic coding. Repeated ideas were grouped into several categories, including instructor support, peer interaction, emotional comfort, motivation, and reduced stress. The study followed basic ethical principles of educational research. Participation was voluntary, and students were informed about the purpose of the study. The questionnaire was anonymous, and the data were used only for research purposes. Students with health limitations were not required to complete physical tasks that could be unsuitable for their condition.

Results and discussion

The final analysis included 72 undergraduate students who completed both stages of the survey. Three variables were examined: perceived psychological support, student engagement, and emotional well-being. The analysis began with descriptive statistics and a reliability check for each scale. These results are presented in table 2.

Table 2 – Reliability and descriptive statistics of the main variables

Variable	Items	Cronbach’s α	Pre-test M	Pre-test SD	Post-test M	Post-test SD
Psychological support	8	.86	3.18	0.67	3.76	0.63
Student engagement	6	.82	3.32	0.61	3.79	0.58
Emotional well-being	6	.84	3.21	0.64	3.68	0.60

Note: Compiled by authors.

Table 2 shows that all three scales had acceptable internal consistency. Cronbach’s alpha values ranged from .82 to .86, suggesting that the questionnaire was reliable enough for the next stage of analysis. The descriptive statistics also show that mean scores increased in all three variables after the six-week intervention.

The most noticeable increase was found in perceived psychological support. The mean score rose from 3.18 at the pre-test to 3.76 at the post-test. This means that, after the intervention, students tended to view the physical education class environment as more supportive. Student engagement followed a similar pattern, with the mean score increasing from 3.32 to 3.79. Emotional well-being also moved in a positive direction, rising from 3.21 to 3.68. Although this increase was slightly smaller than the change in perceived support, it still suggests an improvement in how students experienced the class emotionally.

Paired-samples t-tests were then conducted to check whether the pre-test and post-test changes were statistically meaningful. The results are presented in table 3.

Table 3 – Paired-samples t-test results

Variable	Mean difference	t	df	p	Cohen's d
Psychological support	0.58	5.23	71	< .001	0.62
Student engagement	0.47	4.68	71	< .001	0.55
Emotional well-being	0.47	4.11	71	< .001	0.48

Note: Compiled by authors.

The comparison of pre-test and post-test scores confirmed improvement in all three variables. Perceived psychological support was higher after the intervention, $t(71) = 5.23, p < .001$. A similar result was found for student engagement, which also increased from pre-test to post-test, $t(71) = 4.68, p < .001$. Emotional well-being followed the same direction, with a significant increase after the intervention, $t(71) = 4.11, p < .001$.

The effect sizes fell within the moderate range for all three variables. The largest effect was observed for psychological support ($d = 0.62$), which is understandable because the intervention was built around supportive interaction, emotional check-ins, and constructive feedback in physical education classes. Student engagement also showed a moderate effect ($d = 0.55$), suggesting that students became more involved in the lesson process. For emotional well-being, the effect was slightly smaller but still meaningful ($d = 0.48$). For clarity, the pre-test and post-test mean scores are presented visually in figure 1.

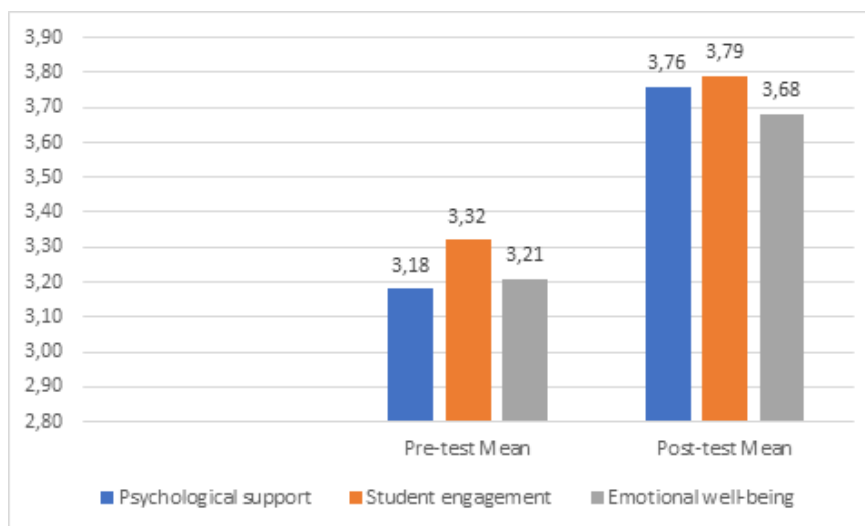


Figure 1 – Pre-test and post-test mean scores across the main variables

Note: Compiled by the authors based on the data of the pilot intervention study, $n = 72$.

Figure 1 illustrates the increase in mean scores from pre-test to post-test across all three areas. The most visible change can be seen in psychological support. Student engagement and emotional well-being also increased, which corresponds with the statistical results presented above.

Students' written reflections added further detail to the quantitative results. Many participants wrote that supportive communication from the instructor made the classes feel calmer, less stressful, and more welcoming. Pair and group activities were also described as useful, as they helped reduce discomfort and made participation easier. Several students mentioned that short reflection at the end of the lesson helped them notice changes in their mood and better understand their emotional state after physical activity.

These results suggest that the psychological support module was associated with a more supportive experience of physical education classes. During the six-week intervention, students reported higher perceived support, stronger engagement, and better emotional well-being. Since the study was

conducted as a pilot intervention, the results should be interpreted carefully. Nevertheless, the data show that physical education may function not only as a space for movement and physical activity, but also as a setting where psychological and pedagogical support can be naturally integrated into higher education.

This pilot study examined whether a short psychological support module, integrated into regular physical education classes, was associated with changes in students' perceived psychological support, engagement, and emotional well-being. After the six-week intervention, all three variables moved in a positive direction. Although the study was small in scale, the results show that physical education can be organised not only around movement and physical activity, but also as a learning environment where students receive emotional and pedagogical support.

The most noticeable change was found in perceived psychological support. This result is understandable, as the intervention was designed around supportive communication, emotional check-ins, cooperative tasks, and constructive feedback. In ordinary physical education classes, students may sometimes pay too much attention to their physical ability, compare themselves with others, or worry about making mistakes. The support module helped shift the focus toward effort, participation, cooperation, and individual progress. Because of this, students may have experienced the lesson environment as safer, calmer, and more encouraging.

The increase in student engagement is also important. It suggests that students became more willing to participate when physical education activities were organised in a cooperative and less judgmental manner. Pair and group tasks may have helped students feel less isolated during the lesson. Instead of performing exercises only as individual physical tasks, students had more opportunities to communicate, support one another, and take part in shared activities. This may explain why engagement increased after the intervention.

Emotional well-being also improved, although the change was slightly smaller than the increase in psychological support. This is not unexpected. Students' emotional well-being is influenced by many factors beyond one university subject, including academic workload, personal stress, social relationships, and general life circumstances. For this reason, a six-week intervention in physical education cannot be expected to produce large emotional changes. Even so, the results suggest that short supportive elements within regular classes may help students feel calmer, more comfortable, and more positive after participation.

The results also point to a close connection between psychological support, engagement, and emotional well-being. Students who felt more supported tended to report stronger engagement and a better emotional state. This relationship is relevant for higher education practice, because participation in physical education may depend not only on the type of exercises used in class, but also on the emotional and social atmosphere of the lesson. When students feel respected, encouraged, and included, they are more likely to take part in activities with confidence.

Another important point is that the intervention did not require a full revision of the physical education curriculum. The support module was integrated into regular classes through short and realistic pedagogical elements. Emotional check-ins, group tasks, supportive feedback, and final reflection did not take much lesson time, but they helped change the tone of the class. This makes the approach practical for university teachers, as it can be applied without major organisational changes, expensive equipment, or additional teaching hours.

Students' written reflections were consistent with the quantitative results. Their comments suggest that the intervention was meaningful not only because students were physically active, but also because of how the lesson was organised. They referred to instructor support, peer interaction, emotional comfort, and reduced tension. These responses show that psychological support in physical education does not have to be limited to formal counselling or separate psychological sessions. It can also be expressed through everyday teaching practices, such as the teacher's language, feedback, task design, and attitude toward students.

The results suggest that physical education in higher education has wider pedagogical potential than is often assumed. It can support not only physical development, but also students' personal growth, emotional stability, social interaction, and engagement with university life. This is especially relevant for students who face academic pressure, adaptation difficulties, or emotional fatigue during

their studies. In this context, physical education may become one of the accessible spaces where psychological and pedagogical support can be provided in a natural way.

The results, however, should be interpreted with caution. The study was conducted as a pilot intervention with one group of students. Since there was no control group, it is not possible to state that all observed changes were caused only by the intervention. Other factors, such as adaptation to the semester, group dynamics, or students' individual motivation, may also have influenced the results. The sample was limited to one university, which also restricts the possibility of generalising the findings to all higher education contexts.

Another limitation concerns the use of self-reported data. Students evaluated their own perceptions of support, engagement, and emotional well-being. Such data are useful because they reflect students' personal experience, but they may also be influenced by current mood, social desirability, or individual expectations. Future studies could include teacher observations, attendance records, or more detailed qualitative interviews to provide a fuller understanding of how the intervention works in practice.

Even with these limitations, the study offers useful initial evidence. It shows that a short psychological support module can be integrated into regular physical education classes and may be associated with positive changes in students' learning and emotional experience. Further research could test the intervention with a larger sample, include a control group, and extend the duration of the programme. It would also be useful to compare different types of physical activities and examine which support elements work best for different groups of students.

The results support the idea that psychological and pedagogical support can be naturally embedded into university physical education. The intervention did not turn physical education into a psychological training session. Rather, it showed that small changes in lesson organisation can make classes more supportive, engaging, and emotionally comfortable. This is directly connected with the broader aim of improving students' well-being through innovative pedagogical approaches in university physical education.

Conclusion

This pilot study explored the use of a short psychological support module in regular physical education classes at Korkyt Ata Kyzylorda University. The study focused on whether ordinary physical education lessons could be strengthened through simple psychological and pedagogical elements, including emotional check-ins, cooperative tasks, supportive feedback, and brief reflection. After the six-week intervention, students reported higher perceived psychological support, stronger engagement, and better emotional well-being.

The study shows that physical education in higher education should not be viewed only as a subject for physical development. When lessons are organised in a supportive and student-centred manner, they can also help students feel more comfortable, confident, socially connected, and willing to participate. The most noticeable improvement was found in perceived psychological support. Students appeared to recognise more encouragement, respectful communication, peer cooperation, and emotional safety during the classes.

Student engagement also increased after the intervention. This may be explained by the fact that the lesson environment became less focused on comparison and more oriented toward cooperation, effort, and individual progress. Emotional well-being also improved, although the change was slightly smaller. This is understandable, as students' emotional state is shaped by many factors outside one academic subject. Even so, the data indicate that a short support module within physical education can create conditions that help students feel calmer, more comfortable, and less tense during classes.

The practical value of the study is that the intervention did not require major curriculum changes. The psychological support elements were added to regular physical education classes without replacing the main physical activities. This makes the approach realistic for university practice. Physical education instructors can use emotional check-ins, pair and group tasks, supportive feedback, and final reflection without special equipment or additional class hours.

The results of this study may be relevant for several groups. For physical education teachers, they offer a practical way to make classes more inclusive, supportive, and engaging. For university psychologists and student support services, the study shows that psychological support does not always

need to be separated from the learning process or limited to counselling sessions. Some supportive elements can be included in everyday teaching practice. The results may also be helpful for university administrators and curriculum designers who seek to improve students' well-being through existing educational programmes. In addition, the study can serve as a basis for further research on innovative pedagogical approaches in physical education and higher education.

The study also has several limitations. Since it was conducted as a pilot intervention, the sample was relatively small and included students from only one university. For this reason, the results cannot be generalised to all students or all higher education institutions. Another limitation is the absence of a control group. Without a comparison group, it is difficult to state with certainty that all observed changes were caused only by the intervention. Students' adaptation to the semester, the atmosphere within the group, or individual motivation may also have influenced the results.

The duration of the intervention should also be considered. The module lasted six weeks, which was enough to observe initial changes, but not enough to determine whether these changes would remain stable over time. The study also relied mainly on self-reported questionnaire data. Such data are valuable because they reflect students' own perceptions, but they can be affected by current mood, expectations, or the wish to give socially acceptable answers. Future studies could include classroom observation, interviews, attendance records, or teacher evaluations to provide a more complete picture.

Further research should test this module with a larger sample and include both experimental and control groups. It would also be useful to extend the intervention for a full semester and compare different types of physical education activities. Future studies could examine whether the same approach works differently for first-year students, senior students, students with low physical confidence, or those experiencing higher levels of academic stress.

Although the results are preliminary, the study shows that physical education can become a meaningful space for psychological and pedagogical support in higher education. Small changes in lesson organisation can influence how students experience physical education classes. A supportive atmosphere, cooperative interaction, and brief reflective moments may help students feel more included, more engaged, and emotionally more comfortable. For this reason, integrating psychological support elements into physical education can be viewed as a promising direction for improving students' well-being and strengthening the educational value of university physical education.

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ДЕНЕ ТӘРБИЕСІ САБАҚТАРЫНА ПСИХОЛОГИЯЛЫҚ ҚОЛДАУДЫ ЕНГІЗУ: ЖОҒАРЫ БІЛІМ БЕРУ ЖАҒДАЙЫНДАҒЫ ПИЛОТТЫҚ ИНТЕРВЕНЦИЯЛЫҚ ЗЕРТТЕУ

Андатпа

Жоғары білім беру жүйесінде дене тәрбиесі көбіне дене дайындығы және қозғалыс белсенділігімен байланыстырылады. Алайда студенттердің бұл сабақтардағы тәжірибесі қарым-қатынасқа, құрдастарымен өзара әрекетке, оқытушы қолдауына және эмоционалдық жайлылыққа да тәуелді. Бұл пилоттық зерттеуде әдеттегі дене тәрбиесі сабақтарына енгізілген қысқа психологиялық қолдау модулінің студенттердің қабылдайтын психологиялық қолдауына, сабаққа қатысу белсенділігіне және эмоционалдық әл-ауқатына ықпалы қарастырылды. Зерттеу алдын ала және қорытынды өлшеуі бар квазиэксперименттік дизайн негізінде Қорқыт Ата атындағы Қызылорда университетінде алты апта бойы жүргізілді. Екі өлшеуге де толық қатысқан 72 бакалавриат студенті талдауға енгізілді. Модуль студенттердің эмоциялық күйін қысқаша анықтау, жұптық және топтық тапсырмалар, оқытушының қолдаушы кері байланысы және сабақ соңындағы қысқа рефлексия-

дан тұрды. Интервенциядан кейін барлық көрсеткіштердің орташа мәні артты: психологиялық қолдау 3,18-ден 3,76-ға, қатысу белсенділігі 3,32-ден 3,79-ға, эмоционалдық әл-ауқат 3,21-ден 3,68-ге дейін жоғарылады. Жұптық t-критерий бұл өзгерістердің статистикалық тұрғыдан маңызды екенін көрсетті, әсер көлемі орташа деңгейде болды. Алынған деректер дене тәрбиесіндегі шағын қолдаушы өзгерістер студенттердің белсенділігі мен эмоционалдық жайлылығын күшейте алатынын көрсетеді.

Тірек сөздер: дене тәрбиесі, психологиялық қолдау, студенттердің қатысу белсенділігі, эмоционалдық әл-ауқат, жоғары білім, интервенция.

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ИНТЕГРАЦИЯ ПСИХОЛОГИЧЕСКОЙ ПОДДЕРЖКИ В ЗАНЯТИЯ ФИЗИЧЕСКОЙ КУЛЬТУРОЙ: ПИЛОТНОЕ ИНТЕРВЕНЦИОННОЕ ИССЛЕДОВАНИЕ В ВЫСШЕМ ОБРАЗОВАНИИ

Аннотация

В высшем образовании физическая культура чаще всего связывается с физической подготовленностью и двигательной активностью. Однако опыт студентов на таких занятиях зависит также от общения, взаимодействия с одноклассниками, поддержки преподавателя и эмоционального комфорта. В данном пилотном исследовании рассматривалось, может ли краткий модуль психологической поддержки, включенный в обычные занятия физической культурой, способствовать улучшению воспринимаемой психологической поддержки, вовлеченности студентов и их эмоционального благополучия. Исследование проводилось в Кызылординском университете имени Коркыт Ата и имело квазиэкспериментальный дизайн с предварительным и итоговым измерением. Интервенция продолжалась шесть недель. В итоговый анализ были включены 72 студента бакалавриата, прошедшие оба этапа измерения. Модуль включал краткое определение эмоционального состояния студентов, парные и групповые задания, поддерживающую обратную связь преподавателя и небольшую рефлексию после занятия. После интервенции средние показатели повысились по всем трем направлениям: психологическая поддержка – с 3,18 до 3,76, вовлеченность – с 3,32 до 3,79, эмоциональное благополучие – с 3,21 до 3,68. Парный t-критерий подтвердил статистически значимые улучшения при умеренных размерах эффекта. Полученные данные показывают, что небольшие поддерживающие изменения в занятиях физической культурой могут усилить вовлеченность студентов и их эмоциональный комфорт.

Ключевые слова: физическая культура, психологическая поддержка, вовлеченность студентов, эмоциональное благополучие, высшее образование, интервенция.

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4 PEDAGOGY AND EDUCATIONAL METHODOLOGY ПЕДАГОГИКА ЖӘНЕ БІЛІМ БЕРУ ӘДІСТЕМЕСІ ПЕДАГОГИКА И МЕТОДИКА ОБРАЗОВАНИЯ

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БІЛІМ БЕРУ ПРОЦЕСІНДЕ ЦИФРЛЫҚ ӘДЕБИ МӘТІНДЕРДІ ҚОЛДАНУДЫҢ ҒЫЛЫМИ-ӘДІСТЕМЕЛІК НЕГІЗДЕРІ

Аңдатпа

Мақала Абай атындағы Қазақ ұлттық педагогикалық университеті гранты негізінде дайындалды. Онда білім беру процесінде цифрлық әдеби мәтіндерді қолданудың ғылыми-әдістемелік негіздері кешенді зерттеледі. Зерттеудің мақсаты – цифрлық форматтағы (электрондық кітаптар, гипермәтіндік шығармалар, мультимодалды мәтіндер, интерактивті оқырман платформалары) әдеби мәтіндерді педагогикалық тұрғыдан негіздеу, олардың дәстүрлі баспа мәтінінен айырмашылықтарын анықтау және тиімді оқыту әдістемесін ұсыну. Зерттеу нәтижесінде цифрлық мәтін түрлерінің педагогикалық жіктемесі жасалды; оқырманның дәстүрлі мәтін схемасы мен цифрлық форматтың жаңа тәжірибесі арасындағы танымдық қайшылықтың пайда болу үдерісі ашылды; бес кезеңдік ғылыми-әдістемелік модель (цифрлық контекстті белсендіру, мәтінді талдау, интерпретация, сыни бағалау, жасампаздық) ұсынылды. Халықаралық және отандық эмпирикалық деректер ұсынылған модельдің тиімділігін растайды: цифрлық мәтінмен жүйелі жұмыстың оқушылардың мәтінді ұғыну деңгейін арттыратыны анықталды. Мақала жалпы білім беретін мектептің мұғалімдеріне, педагогика мен әдістеме саласының зерттеушілеріне арналған.

Тірек сөздер: цифрлық мәтін, гипермәтін, мультимодалды мәтін, ғылыми-әдістемелік негіздер, цифрлық оқу, медиасауаттылық, оқыту моделі.

Кіріспе

Цифрлық технологиялардың қоғамның барлық саласына енуі білімнің мазмұны мен берілу нысанын ғана өзгертіп қоймай, адамның мәтінмен, ақпаратпен және білімнің өзімен арақатынасын түбегейлі қайта құруда. Бұл трансформация – тек технологиялық прогрестің салдары емес, кең мағынадағы антропологиялық өзгеріс. Адамзаттың ең байырғы дағдыларының бірі – оқу цифрлық ортада принципіалды жаңа сипатқа ие болуда: ол мазмұны, нысаны және оқырманнан талап ететін когнитивтік процестері жағынан дәстүрлі баспа оқудан өзгеше.

Нейрологиялық зерттеулер экраннан оқу мен қағаздан оқудың мидың белсендіру паттерндері тұрғысынан айтарлықтай ерекшеленетінін дәлелдейді. Алайда бұл айырмашылық педагогикалық тәжірибеде жеткілікті деңгейде ескерілмейді: цифрлық мәтін көбіне баспа нұсқасының «сандық эквиваленті» ретінде ғана қарастырылып, оқыту процесіне арнайы методологиялық дайындықсыз енгізіледі. Мұндай тәсіл оқушыда нақты цифрлық оқу дағдыларын қалыптастырмай, тек экранға механикалық үйренуге ғана алып келеді.

«Цифрлық мәтін» ұғымы педагогикалық ғылымда нақты жүйелі анықтамасын тапқан жоқ. Оның өзіне тән белгілері – гипермәтіндік навигация, мультимодалды компоненттер (аудио, бейне, анимация), интерактивтілік, деректерге негізделген аналитика – оны дәстүрлі баспа мәтінінен принципіалды ажырататын факторлар болып табылады. Осы айырмашылықтарды негізге алған арнайы ғылыми-әдістемелік жүйесіз цифрлық мәтіндерді оқу процесіне ендіру педагогикалық тиімсіздікке және оқушының функционалдық сауаттылығының нашарлауына соқтырады.

Зерттеудің өзектілігі бірнеше факторға байланысты айқындалады. Бірінші фактор – нормативтік-стратегиялық: Қазақстан Республикасының цифрлық білім беруді дамыту тұжырымдамасы оқушылардың функционалдық сауаттылығын цифрлық ортада қамтамасыз етуді мемлекеттік деңгейдегі стратегиялық міндет ретінде белгілейді [1].

Екінші фактор – диагностикалық: PISA 2022 бағалауының нәтижелері бойынша Қазақстан оқушылары сандық мәтіндерді оқуда баспа мәтіндерін оқуға қарағанда айтарлықтай төмен нәтиже көрсеткен, бұл цифрлық оқу дағдыларын мақсатты педагогикалық қолдауды қажет ететінін айғақтайды.

Үшінші фактор – практикалық: мектеп кітапханаларының электрондық ресурстарға ауысуы, оқулықтардың цифрлық нұсқаларының кеңінен қолданысқа енуі мұғалімнен цифрлық мәтінмен жұмыс жасаудың арнайы педагогикалық тәсілдерін меңгеруін заманауи оқу шындығы ретінде талап етеді. Зерттеудің мақсаты – цифрлық форматтағы әдеби мәтіндерді педагогикалық тұрғыдан негіздеп, олардың дәстүрлі баспа мәтінінен айырмашылықтарын ашып, тиімді ғылыми-әдістемелік жүйе ұсыну. Осы мақсатқа жетуге бағытталған зерттеу міндеттері: цифрлық мәтін феноменінің теориялық-педагогикалық негіздерін жүйелеу; цифрлық мәтін түрлерінің функционалдық-дидактикалық жіктемесін жасау; цифрлық оқу барысындағы когнитивтік процестердің ерекшеліктерін айқындау; бес кезеңдік ғылыми-әдістемелік модельді жобалап, эмпирикалық деректермен растау.

Материалдар мен әдістер

Қазіргі кезеңде цифрлық технологиялардың жедел дамуы білім беру жүйесінде мәтінмен жұмыс жасаудың мазмұны мен нысанын түбегейлі өзгертуде. Электрондық оқу ресурстарының, интерактивті платформалардың және мультимедиялық мазмұнның кеңінен таралуы оқушылардың мәтінді қабылдау тәсілін жаңартып, педагогикалық ғылым мен тәжірибенің алдына жаңа міндеттерді қойып отыр [1, 12 б.].

Цифрлық форматтағы мәтін дәстүрлі баспа мәтінімен салыстырғанда принципіалды ерекшеліктерге ие: ол сызықты емес, интерактивті, мультимодалды және желілік сипатқа ие [2, 29 б.]. Осы ерекшеліктер оқушының мәтінді меңгеру процесіне тікелей ықпал етеді: нейрологиялық зерттеулер экраннан оқу кезінде мидың терең оқу аймақтарының белсенділігі төмендейтінін, ал «беткейлік» оқу паттерні басым болатынын дәлелдейді [3, 78 б.]. Алайда арнайы педагогикалық стратегиялар мен ғылыми-әдістемелік қолдау болған жағдайда цифрлық оқудың тиімділігін дәстүрлі оқумен теңестіруге болады [4, 62 б.].

Зерттеудің өзектілігі мынадай факторлармен айқындалады. Біріншіден, Қазақстан Республикасының цифрлық білім беруді дамыту тұжырымдамасы (2023) оқушылардың функционалдық сауаттылығын цифрлық ортада қамтамасыз етуді стратегиялық міндет ретінде белгілейді [1]. Екіншіден, PISA 2022 нәтижелері бойынша Қазақстан оқушылары цифрлық мәтіндерді оқуда баспа мәтіндерін оқуға қарағанда едәуір нашар нәтиже көрсеткен, бұл цифрлық оқу дағдыларын арнайы оқытудың қажеттігін дәлелдейді [5]. Үшіншіден, мектеп кітапханаларының электрондық ресурстарға ауысуы мен оқулықтардың цифрлық нұсқаларының енгізілуі мұғалімнен цифрлық мәтінмен жұмыс жасаудың арнайы педагогикалық тәсілдерін меңгеруді талап етеді.

Тақырыпты халықаралық ғылымда Дж. Болтер [2], Г. Кресс [6], М. Вольф [3], Р. Хоббс [7], Дж. Ландоу [8], Р. Майер [9], А. Манген [4] зерттеген. Қазақстандық педагогикалық ғылымда тақырыптың жекелеген аспектілері [10–14] зерттеледі. Алайда цифрлық форматтағы мәтіндерді оқытудың жүйелі ғылыми-әдістемелік негіздерін кешенді қарастырған еңбектер жетіспейді, бұл зерттеудің ғылыми олқылығын айқындайды.

Мақалада зерттеу әдістері ретінде аналитикалық-синтетикалық ойлау (теориялық әдебиеттерді жүйелеу), салыстырмалы талдау (дәстүрлі және цифрлық мәтін дидактикасын салыстыру), педагогикалық модельдеу (әдістемелік жүйені жобалау), эмпирикалық деректерді интерпретациялау (отандық және шетелдік эксперименттер) тәрізді әдістерді ұсынылады.

Цифрлық мәтін ұғымы ғылыми айналымға 1990-жылдардың басында, интернет және гипермәтін технологияларының кеңінен таралуымен бірге енді. Дж. Болтердің «Жазу кеңістігі» еңбегінде цифрлық мәтін «баспа мәтінін ығыстырмайтын, бірақ оны сыртынан орап, жаңа мағыналық мүмкіндіктер ашатын форма» ретінде сипатталады. Болтер цифрлық мәтінді дәстүрлі мәтіннен үш тұрғыдан ажыратады: ол сызықты емес, өзгермелі және ол желілік, басқа мәтіндермен байланыста екендігін көрсеткен. Дж. Ландоудың гипермәтін теориясы бойынша цифрлық мәтіндегі гиперсілтемелер оқырманға оқу жолын өзі таңдау еркіндігін береді. Ландоу мұны постструктурализм тұрғысынан Р. Бартстың «Автордың өлімі» концепциясымен байланыстырады: гипермәтінде оқырман шынымен де авторға тең мәртебеге ие болады, мәтіннің мағынасын іс жүзінде бірлесе жасайды. Бұл теориялық тұжырым мектеп практикасында цифрлық мәтінмен жұмыс жасаудың педагогикалық мүмкіндіктерін айқын бейнелейді. «Мультимодалды мәтін» ұғымы Г. Крессің семиотикалық зерттеулерінде жан-жақты талданған. Кресс бойынша заманауи цифрлық мәтін тек вербалды белгілер жүйесімен ғана емес, визуалды, аудио, кинетикалық (анимация, видео) белгілер жүйесімен де мағына қалыптастырады. Бұл мағынаны «мультимодалды ансамбль» деп атаған Кресс мектеп мұғалімдерін оқушыны тек мәтін тілін емес, мәтіннің барлық семиотикалық жүйелерін оқуға үйрету керек деп тұжырымдайды.

Зерттеуде мынадай әдістер қолданылды: аналитикалық-синтетикалық ойлау (теориялық әдебиеттерді жүйелеу); салыстырмалы-салғастырмалы талдау (дәстүрлі және цифрлық мәтін дидактикасын салыстыру); педагогикалық модельдеу (ғылыми-әдістемелік жүйені жобалау); эмпирикалық деректерді интерпретациялау (отандық және халықаралық зерттеулер); жүйелік талдау (цифрлық мәтін түрлерін жіктеу). Зерттеудің материалдық базасы ретінде халықаралық деректер қоры (PISA), педагогикалық метаанализдер, отандық педагогикалық эксперименттер, сондай-ақ Қазақстан Республикасының нормативтік-құқықтық құжаттары пайдаланылды. Цифрлық мәтіндерді оқытудың педагогикалық теориясы бірнеше іргелі тұжырымдамаға сүйенеді. Бірінші – «Жаңа сауаттылықтар» теориясы. Дж. Ки мен Б. Стрит бастаған зерттеушілер топтары «сауаттылық» ұғымын кеңейтіп, ол тек жазуды, оқуды меңгеруден ғана емес – цифрлық, визуалды, медиалды сауаттылықтардан тұратын кешенді құзіреттілік деп анықтайды. Осы тұрғыдан цифрлық мәтінмен жұмыс – ХХІ ғасыр оқушысының функционалдық сауаттылығының өзегі. Екінші теориялық негіз – Выготскийдің «Жақын даму аймағы» концепциясы. Цифрлық мәтін өз табиғатында оқушыға мәтінді меңгеруге жәрдемдесетін тіреу – қызметін атқаратын элементтерге бай: гиперсілтемелер, аудио мен бейне түсіндірме, интерактивті сөздіктер, оқырмандар аннотациялары. Осы элементтерді педагогикалық жоспарлаумен нақты мақсатқа бағыттаған кезде цифрлық мәтін оқушыны дербес оқуға, автономиялы оқырман болуға, кезең-кезеңмен жетелейді. Үшінші негіз – Р. Майердің мультимедиалық оқыту теориясы, оның екі арналы ақпарат өңдеу принципі бойынша цифрлық мәтіндегі визуалды және аудиалды компоненттердің бірлескен пайдаланылуы ақпаратты меңгеруді айтарлықтай жеңілдетеді. Дегенмен

Майер «артықшылық принципі» арқылы сақтандырады: «қосымша» медиа компоненттер тым көп болса, когнитивтік шамадан тыс жүктеме пайда болып, оқу нәтижесін нашарлатады. Демек цифрлық мәтінді дизайндау және педагогикалық пайдалану кезінде медиакомпоненттерді таңдап, мөлшерлеп кіріктіру міндетті шарт болып саналады. Төртінші негіз – Р. Хоббстың медиасауаттылық педагогикасы. Хоббс медиасауаттылықты бес дағдымен анықтайды: кіру, талдау, бағалау, жасау және қатысу. Цифрлық мәтінмен оқыту жұмысы осы бес дағдының барлығын дамытуға мүмкіндік береді, демек ол тар мағынадағы «пәндік мазмұнды меңгерту» мақсатынан шығып, тұтас тұлғаның цифрлық деңгейдегі азаматтық дамуына қызмет ете алады.

Нәтижелер мен талқылау

Цифрлық мәтіннің теориялық-ғылыми негіздері. Ғылыми әдебиеттерге жүргізілген шолу цифрлық мәтінді зерттеудің үш негізгі бағытын анықтайды: семиотикалық-технологиялық, нейрологиялық және педагогикалық-дидактикалық. Семиотикалық-технологиялық бағытта Дж. Болтер цифрлық мәтінді дәстүрлі мәтіннен үш тұрғыдан ажыратады: ол сызықты емес, динамикалық және желілік [2, 29 б.] Дж. Ландоудың гипермәтін теориясы бойынша цифрлық мәтіндегі гиперсілтемелер оқырманға оқу жолын өзі таңдау еркіндігін беріп, мәтінді «бір жолдан» «сансыз жолға» айналдырады [8, 45 б.]. Г. Кресс «мультимодалды ансамбль» тұжырымдамасын енгізіп, заманауи цифрлық мәтін тек вербалды белгілермен ғана емес, визуалды, аудиалды, кинетикалық белгілермен де мағына қалыптастыратынын дәлелдеді [6, 54 б.].

Нейрологиялық бағытта М. Вольфтың іргелі зерттеуі экраннан оқу кезінде мидың «терең оқу» аймақтарының белсенділігі төмендейтінін, ал «беткейлік» оқу әрекетінің құрылымы басым болатынын нейропедагогикалық деректермен дәлелдеді [3, 78 б.]. Зерттеуші бұл үрдістің оқу мотивациясының өзгеруімен емес, оқу ортасы мен технологиясы тудыратын нейрологиялық реакциямен байланысты екенін атап өтеді, демек педагогикалық дизайн арқылы осы үрдісті реттеуге болады. А. Манген мен Б. Уилбергтің Норвегия мектептерінде жүргізген эксперименті оқушыларға мәтінді экраннан оқу стратегияларын арнайы үйреткен соң олардың мазмұн бойынша нәтижелері қағаздан оқыған оқушылармен теңескенін дәлелдеді [4, 62 б.]. Педагогикалық-дидактикалық бағытта Р. Хоббс [7] медиасауаттылықты бес дағдымен анықтайды: кіру, талдау, бағалау, жасау және қатысу. Цифрлық мәтінмен оқыту жұмысы осы бес дағдының барлығын дамытуға мүмкіндік береді [8]. Р. Майердің мультимедиялық оқыту теориясы бойынша визуалды және аудиалды каналдардың бірлесіп пайдаланылуы ақпаратты меңгеруді жеңілдетеді, бірақ медиа компоненттер тым көп болса, когнитивтік шамадан тыс жүктеме пайда болатынын ескерту қажет [9, 123 б.].

Функционалдық сауаттылықтың кең тұжырымдамасы бойынша сауаттылық тек жазуды, оқуды меңгеруден ғана емес, цифрлық, визуалды, медиалды сауаттылықтардан тұратын кешенді күзиреттілік деп анықталады [15]. Осы тұрғыдан цифрлық мәтінмен жұмыс – ХХІ ғасыр оқушысының функционалдық сауаттылығының өзегі болып табылады.

Цифрлық мәтін түрлерінің педагогикалық жіктелісі

Педагогикалық тәжірибеде цифрлық әдеби мәтіндерді оқытуға бағыттау үшін олардың түрлерін функционалдық-дидактикалық тұрғыдан жіктеу маңызды. Зерттеу негізінде мынадай жіктеме ұсынылады.

Электрондық кітап дәстүрлі баспа шығарманың сандық нұсқасы болып табылады. Педагогикалық артықшылықтары: кез келген жерде қолжетімді, іздеу функциясы бар, кейде аудио нұсқасымен бірге келеді. Шектеулілігі: интерактивтілік деңгейінің төмендігі. Нейрологиялық зерттеулер бойынша, таныс «кітап» схемасы мен экран форматының сәйкессіздігі мазмұнды терең ұғынуды 15–20%-ға төмендетуі мүмкін [3, 92 б.]. Педагогикалық шешім: электрондық кітаппен жұмысқа «белсенді аннотация» тәсілін (Hypothes.is, Perusall платформалары) кіріктіру – оқушы бір мезгілде оқып, аннотация жазып, сыныптастарымен диалогта болады. Р. Хоббстың бағалауынша, аннотация жазу мәтінді терең (close reading) оқудың ең тиімді жолы болып табылады [7, 48 б.].

Гипермәтіндік шығармаларда (Twine, Inkle платформалары арқылы жасалған) мәтін сызықты емес, оқырман оқу жолын өзі таңдайды. Бұл классикалық әдеби рецепциядан принципалды ерекшеленеді. Таныс «баяндау» схемасы (бастамасы, дамуы, шешімі бар) мен

гипермәтіннің нелинейлілігі арасында диссонанс туады, осы диссонансты шешу барысында оқушы авторлық стратегияны, баяндаудың нелинейлілігін терең сезінеді [7, 67 б.]. Д. Бакингом бойынша гипермәтінмен жұмыс оқушының себеп-салдарлық ойлауын дамытып, нарративтік сауаттылығын тереңдетеді [16, 88 б.].

Мультимодалды мәтіндер жазбаша мәтінмен қоса аудио, бейне, анимация, инфографика арқылы мағына қалыптастырады. Г. Кресс мұны «мультимодалды ансамбль» деп атайды [6, 54 б.]. Р. Майердің екі арналы ақпарат өңдеу принципіне сүйенсек, визуалды және аудиалды каналдардың бірлесіп пайдаланылуы ақпаратты меңгеруді жеңілдетеді, алайда когнитивтік жүктемені де арттырады [9, 123 б.]. Педагогикалық тапсырманың тиімді форматы: «Мәтіннің визуалды және аудио компоненттері авторлық мағынаны қалай күшейтеді немесе қайшы келеді?» деген мультимодалды талдау [6, 78 б.].

Интерактивті платформалар оқушыға жеке оқу деңгейіне сай мәтін ұсынып, оқу процесінде сұрақтар қояды, нәтижені мұғалімге деректер ретінде береді. Педагогикалық мүмкіндіктері: оқушының жеке оқу траекториясын бақылау, жедел кері байланыс, оқырмандар арасындағы ынтымақтастық элементі. К. Топшингің педагогикалық зерттеуді қамтитын метаанализі интерактивті платформалардың оқуға деген дербес ынтаны арттырудағы тиімділік индексын $d=0.47$ (орташадан жоғары) деп тіркеді [17, 1231 б.].

Цифрлық мәтіндерді оқытудың ғылыми-әдістемелік моделі

Жоғарыда талданған теориялық негіздер мен цифрлық мәтін түрлерінің ерекшеліктері негізінде бес кезеңдік ғылыми-әдістемелік модель ұсынылады. Модель Блум таксономиясының жаңартылған нұсқасына – еске түсіру, түсіну, қолдану, талдау, бағалау, жасампаздық – және Бруннердің спиральді бағдарлама тұжырымдамасына сүйенеді [18; 19].

1-кезең. Цифрлық контекстті белсендіру (Когнитивтік дайындық). Оқырманның цифрлық тәжірибесін, фондық білімін жандандыру. Оқу алдында мәтіннің цифрлық форматымен таныстыру жасалады. «Цифрлық болжам» тәсілі: мұғалім оқушыларға мәтіннің тақырыбын, мультимодалды мұқабасын, бірінші элементін ұсынып, оқушы болжамдарын жинайды. Зерттеулер бойынша дайындық кезеңі мазмұнды ұғынуды 28%-ға арттырады [19, 89 б.]. Ұзақтығы: сабақтың 10–12%-ы.

2-кезең. Мәтінмен жұмыс және диссонансты тану (Аналитикалық оқу). Оқылу барысында таныс мәтін схемасы мен цифрлық форматтың жаңа тәжірибесі арасындағы қайшылықты анықтау. «Белсенді аннотация» тәсілі: оқушылар мәтінге «!» (маңызды), «?» (сұрақ), «+» (байланыс), «-» (авторлық ой) белгілері қояды. С. Абрамс пен К. Уильям зерттеуінде аннотация платформасын пайдаланған оқушылардың мәтіннен дәлел келтіру дағдысы бақылау тобынан 31%-ға жоғары болды [20, 668 б.]. Ұзақтығы: сабақтың 30–35%-ы.

3-кезең. Мәтіндік талдау (Аналитикалық-сыни жұмыс). Мәтіннің тілдік-мазмұндық ерекшеліктерін, авторлық ниетін талдау; цифрлық мәтіннің гипермәтіндік және мультимодалды компоненттерін мазмұнмен байланыстыра талдау. «Цифрлық Сократ семинары»: оқушылар форум немесе видеоконференция арқылы мәтіннің дискуссиялық мәселелерін талқылайды. Ұзақтығы: сабақтың 25–30%-ы.

4-кезең. Интерпретация және тұлғалану (Рефлексия). Оқушының мәтін мазмұнын жеке тәжірибесімен, мәдени контекстімен, бүгінгі шындықпен байланыстыруы. «Цифрлық рефлексия форматтары»: оқушылар мәтіннің басты идеясы жайлы қысқа эссе, инфографика немесе видеомонолог жасайды. «Мәтіннен мәтінге» байланыс: тақырыптас басқа цифрлық мәтінмен байланыс орнату. Ұзақтығы: сабақтың 15–20%-ы.

5-кезең. Жасампаздық. Оқушының өзі жаңа цифрлық мәтін жасауы — оқу мен жазудың синтезі. «Цифрлық шығармашылық»: оқушылар шығарма тақырыбына байланысты блог-жазба, подкаст сценарийі немесе нелинейлі баяндау жазады. «Өзара бағалау»: оқушылар бір-бірінің цифрлық мәтіндерін критерийлер бойынша бағалайды. С. Грэм мен Д. Перин метаанализі аутентикалық цифрлық жазудың мәтін сапасына тигізетін ықпалын орташа әсер көлемі (0,55) деп анықтады [21, 21 б.].

Ұсынылған модельдің педагогикалық мәні – оқушыны цифрлық ортада автономиялы, сыни, шығармашылық оқырман деңгейіне жеткізудің кезеңдік жолы болып табылуы. Модель «инструмент» емес – оқушының функционалдық цифрлық сауаттылығын жүйелі дамытудың теориялық негізделген тәсілі.

Жүргізілген зерттеу негізінде мынадай негізгі нәтижелер алынды.

Біріншіден, цифрлық мәтін педагогикалық ғылымда тек «электрондық баспа нұсқасы» ретінде емес, өзіне тән семиотикалық жүйесі (гипермәтіндік сілтемелер, мультимодалды компоненттер, интерактивтілік) бар жаңа мәтіндік форма ретінде қаралуы тиіс. Болтер, Ландоу, Кресс теориялары осы тұжырымды берік негізге орнатады. Бұл айырмашылықты мойындамай, цифрлық мәтінді «қарапайым» оқу тапсырмасы ретінде берген мұғалім оқушыда цифрлық оқу дағдыларын дамытпайды, тек экранға деген дағдылануды қалыптастырады.

Екіншіден, цифрлық мәтін түрлерінің педагогикалық жіктемесі – электрондық кітап, гипермәтіндік шығарма, мультимодалды мәтін, интерактивті платформа – мұғалімге педагогикалық мақсатына қарай тиімді мәтін форматын таңдауға нақты нұсқаулық береді. Барлық цифрлық мәтін тең емес – мақсат пен педагогикалық жоспарға сәйкес таңдау жасалуы тиіс.

Үшіншіден, ұсынылған бес кезеңдік ғылыми-әдістемелік модель – Цифрлық контекстті белсендіру → Аналитикалық оқу → Мәтіндік талдау → Интерпретация → Жасампаздық – Блум таксономиясының барлық когнитивтік деңгейлерін қамтиды. Жүйелі, кезеңді, мақсатты цифрлық оқу тәжірибесін береді.

Төртіншіден, халықаралық және отандық зерттеулер цифрлық мәтіндермен жүйелі, педагогикалық жоспарлаумен жұмыс жасаудың оқушы нәтижелерін айтарлықтай арттыратынын дәлелдейді. PISA 2022 деректері бойынша, цифрлық мәтіндермен тұрақты жұмыс істеген оқушылар мәтінді жақсырақ түсінеді – олардың нәтижесі орта есеппен 22%-ға жоғарылаған. Қазақстанда жүргізілген тәжірибеде цифрлық тәсіл қолданылған топтағы оқушылар сыни эссені бақылау тобына қарағанда 24%-ға жақсы жазған. көптеген зерттеулер талдауы интерактивті платформалар оқушылардың оқуға деген қызығушылығын арттыратынын көрсетті. Сонымен қатар, цифрлық форматта жазу тапсырмаларын орындау оқушылардың мәтін сапасын жақсартуға көмектеседі.

Бесіншіден, Қазақстан мектептерінде жүргізілген сауалнама көрсеткендей, мұғалімдердің көпшілігі (73%) цифрлық мәтіндермен қалай жұмыс істеуді толық меңгермеген. Бірақ соған қарамастан, олардың басым бөлігі (89%) бұл бағыттың болашағы зор екенін мойындайды [11]. Бұл деректер мұғалімдерді арнайы медиапедагогикалық дайындаудың мектептегі цифрлық оқу реформасының кілтті міндеті екенін дәлелдейді.

Зерттеудің шектеулері. Ұсынылған жүйе негізінен жоғары сынып оқушыларына арналған деректерге сүйенеді. Ауылдық мектептердегі интернет инфрақұрылымының шектеулілігі кейбір платформалардың қолжетімсіздігін туғызуы мүмкін; бұл жағдайда мұғалім офлайн форматтағы материалдарды пайдалана алады.

Қорытынды

Жүргізілген зерттеу цифрлық форматтағы әдеби мәтіндерді білім беру процесінде қолдану – педагогикалық инновация ғана емес, ХХІ ғасыр оқырманын қалыптастырудың ғылыми-әдістемелік міндеті екенін дәлелдейді. Цифрлық мәтін – өзіндік семиотикалық жүйесі бар (гипермәтіндік сілтемелер, мультимодалдылық, интерактивтілік) жаңа мәтіндік форма [2, 7, 9]. Бұл ерекшеліктерді ескермей оқыту оқушыда тек беткейлік оқу паттерні қалыптастырады.

Ұсынылған бес кезеңдік ғылыми-әдістемелік модель – Цифрлық контекстті белсендіру → Аналитикалық оқу → Мәтіндік талдау → Интерпретация → Жасампаздық – мұғалімге цифрлық мәтінмен жұмысты жүйелі, мақсатты, оқушы дамуына нақты бағытталған түрде ұйымдастыруға педагогикалық негіз береді [7, 16, 19].

Болашақ зерттеулер үшін мынадай бағыттар ұсынылады: ең алдымен жасанды интеллект негізіндегі адаптивті цифрлық мәтін жүйелерінің педагогикалық тиімділігін арнайы эксперимент арқылы зерттеу; екіншіден цифрлық мәтін педагогикасы бойынша мектеп мұғалімдерін дайындаудың модульдік бағдарламасын жасау; үшіншіден Қазақстан мектептерінде оқушылардың цифрлық оқу дағдылары деңгейін ұлттық мониторинг жүйесіне кіріктіру.

Цифрлық сауаттылық–ХХІ ғасыр оқушысының функционалдық сауаттылығының ажырамас бөлігі; ал цифрлық мәтінмен мақсатты жұмыс – осы сауаттылықтың іргетасы. Оқытудың бұл бағытын жүйелі, теориялық негізделген түрде мектеп практикасына кіріктіру – қазақстандық жалпы білім берудің алдындағы өзекті педагогикалық міндет.

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МЕТОДИЧЕСКАЯ СИСТЕМА ИСПОЛЬЗОВАНИЯ ЦИФРОВЫХ ЛИТЕРАТУРНЫХ ТЕКСТОВ В УЧЕБНОМ ПРОЦЕССЕ

Аннотация

Статья подготовлена в рамках гранта Казахского национального педагогического университета имени Абая. В ней комплексно исследуются научно-методические основы использования цифровых литературных текстов в образовательном процессе. Цель исследования – педагогическое обоснование литературных тек-

стов в цифровом формате (электронные книги, гипертекстовые произведения, мультимодальные тексты, интерактивные читательские платформы), определение их отличий от традиционного печатного текста, а также разработка эффективной методики обучения. В результате исследования разработана педагогическая классификация типов цифровых текстов; раскрыт процесс возникновения когнитивного диссонанса между традиционной схемой восприятия текста у читателя и новым опытом цифрового формата; предложена пятиэтапная научно-методическая модель (активизация цифрового контекста, анализ текста, интерпретация, критическая оценка, креативная деятельность). Международные и отечественные эмпирические данные подтверждают эффективность предложенной модели: установлено, что систематическая работа с цифровыми текстами повышает уровень понимания текста у учащихся. Статья предназначена для учителей общеобразовательных школ, а также для исследователей в области педагогики и методики обучения.

Ключевые слова: цифровой текст, гипертекст, мультимодальный текст, научно-методические основы, цифровое чтение, медиаграмотность, модель обучения.

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METHODOLOGICAL SYSTEM FOR USING DIGITAL LITERARY TEXTS IN THE TEACHING PROCESS

Abstract

The article was prepared within the framework of a grant from Abai Kazakh National Pedagogical University. It provides a comprehensive study of the scientific and methodological foundations of using digital literary texts in the educational process. The purpose of the study is to provide pedagogical justification for literary texts in digital formats (e-books, hypertext works, multimodal texts, interactive reading platforms), to identify their differences from traditional printed texts, and to propose an effective teaching methodology. As a result of the study, a pedagogical classification of digital text types was developed; the process of cognitive dissonance emergence between the reader's traditional text perception schema and the new experience of digital formats was revealed; and a five-stage scientific and methodological model was proposed (activation of digital context, text analysis, interpretation, critical evaluation, and creative production). International and domestic empirical data confirm the effectiveness of the proposed model: systematic work with digital texts has been shown to improve students' reading comprehension levels. The article is intended for secondary school teachers as well as researchers in the fields of pedagogy and teaching methodology.

Keywords: digital text, hypertext, multimodal text, scientific-methodological foundations, digital reading, media literacy, teaching model.

Мақаланың редакцияға түскен күні: 14.05.2026

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Материалдар қазақ, орыс және ағылшын тілдерінде журналдың ресми сайты (<https://ejcrpp.turan-edu.kz/jour/index>) арқылы қабылданады, онда авторларға мақалаларды жіберу үдерісі, сондай-ақ ақы төлеу туралы толық нұсқаулық бар.

Мәтін **WINWORD XP** немесе*. **RTF (Reach text format)** форматында терілуі тиіс. **Times New Roman** шрифт, **14** кегль. Жазба мәтіні бір жол аралығы арқылы теріліп, **12 беттен** аспауы тиіс.

Парақтың үстінгі сол жақ бұрышында **ҒТАМИ, ӘОК** және **JEL** жазылады.

Одан әрі, парақтың оң жақ жоғары бөлігінде автордың тегі мен инициалдары, жұмыс орны, ғылыми дәрежесі мен атағы, ел мен қала атауы, e-mail үш тілде сөздер (қазақша, орысша және ағылшынша) жазылады, егер бірнеше автор болса – мақаланың негізгі авторын (* белгісімен) көрсетіңіз. Парақтың ортасына материалдың **атауы** бас әріптермен, одан әрі – **тірек сөздер** (5–7 сөз, екі сөз тіркесінен аспауы керек) үш тілде жазылады. Содан кейін мәтіннің келесі жиек мөлшерін сақтай отырып, **тасымалдаусыз** басу қажет: сол жақ – 30 мм, оң жақ – 10 мм, үстіңгі – 15 мм, астыңғы – 20 мм сақтай отырып тасымалсыз жазылады. Азат жол үшінші белгіден басталады. Формулалар тек **формалар редакторы (Microsoft Equation)** қосымшасында терілуі керек. **Кестелер, суреттер және схемалар** қосымша бояуларсыз жазылады.

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