

WELLNESS COMPETENCE OF FUTURE TEACHERS: STRATEGIES FOR ENGAGING AND MOTIVATING PRIMARY SCHOOL STUDENTS IN PHYSICAL ACTIVITY

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Abstract. The article is devoted to the pressing issue of professional training of future teachers to engage and motivate primary school students for physical activity through innovative methods and forms. The study provides theoretical substantiation of the essence of the teacher's wellness competence as an integrative formation grounded in the concept of holistic well-being (wellness), and analyses certain components of their professional readiness to engage students in physical activity. The authors consider this competence not only as the ability to design one's own healthy lifestyle and maintain physical well-being, but also as the ability to effectively apply these strategies to foster students' value-based attitudes toward their health (physical, mental, spiritual, and social). As part of the research and experimental work, a survey of Ukrainian undergraduate students (future teachers) was conducted, which revealed their level of interest in this issue and their professional focus on activities with primary school students aimed at stimulating their motor activity. The scientific novelty of the study lies in the fact that, using methods of mathematical statistics (Pearson's χ^2 test, Cramer's V coefficient), the nature of the relationship between socio-demographic factors and professional orientations of future teachers in the field of physical activity was identified for the first time. It was established that the territorial affiliation of future teachers has a statistically significant but weak influence on the formation of their professional goals, which actualises the need for universal methodological strategies. The authors proposed pedagogical cases aimed at developing future teachers' wellness competence and their readiness to motivate students to engage in regular physical activity. Emphasis is placed on the use of Digital Health Pedagogy, gamification, integration of movement into neuropedagogy, and differentiation of the educational process based on interests through the implementation of elective variable modules in professional teacher training.

Keywords: future teachers, wellness competence, motivation, primary school students, gaming activity, physical activity, professional training.

1. INTRODUCTION

In the context of the global transformations of the 21st century, the health status of the child population has become one of the most significant challenges for the educational system. Modern primary schools operate under conditions of rapid digitalisation, which leads to a critical decline in the physical activity of primary school students – a phenomenon known as “digital sedentary behaviour.” Physical inactivity in childhood not only provokes a range of somatic diseases but also negatively impacts cognitive development, mental health (Kratt, 2018), emotional stability, and general learning

ability.

According to the Sustainable Development Strategy and global WHO recommendations, the formation of a health culture must begin from the first years of school life. In this process, the primary school teacher plays a key role, acting not only as a transmitter of knowledge but also as an architect of a health-preserving environment. However, traditional methods of physical education often prove insufficient for the generation of “Digital Natives,” necessitating the development and implementation of innovative strategies to engage students in an active lifestyle (Mental Health Action Plan 2013-2030).

The issue of professional training for future educators in health-promoting activities has been highlighted by many domestic and foreign scholars. In particular, aspects of Wellness / Wellbeing Competence (Engelsen, 2022), methods for integrating physical exercises into the educational process (Kinder et al., 2020), and psychological mechanisms for motivating children toward sports and socio-emotional learning (Denham, 2006; Ciucci et al., 2024), including through physical activity, have been investigated. Specifically, competence in the field of well-being is the ability to promote not only one’s own well-being but, above all, the well-being of specific others, grounded in empathy, emotional awareness, flexible perspective-taking, and metacognition (Engelsen, 2022).

In the line of professional teacher training (Boiko & Machynska, 2022; Popa, 2026), studies regarding the social and psychological benefits of physical education and sports for adults (Eime et al., 2013) are valuable in the context of a positive attitude toward one’s health (Fraser-Thomas et al., 2005), the development of cognitive abilities and metacognition in physical education classes (Chatzipanteli et al., 2016), the impact of physical activity on cognitive functions and academic performance in children and adolescents (García-Hermoso et al., 2021; Solas-Martínez et al., 2025), and others.

Some scholars emphasise psycho-emotional resilience and professional burnout among teachers (Carpenter, 2023), as physical activity helps effectively adapt to stress and maintain internal balance – that is, to support the mental well-being of educators and students (Black, 2024). For Ukrainian educators, this quality is extremely important, as it directly affects the ability to overcome crisis situations, maintain social connections, and function under conditions of constant danger during wartime (Budnyk et al., 2025).

These and other studies provide the grounds for our research to orient toward the interpretation of the future teacher’s wellness competence as an integrative formation that synthesises the teacher’s personal health culture and their professional ability to transmit it to students, motivating them to engage in physical activity. This concept is based on holistic wellness and manifests in the educator’s ability to consciously design their own healthy lifestyle and to effectively apply innovative strategies to foster students’ value-based attitudes toward their health (physical, mental, spiritual, and social).

At the same time, despite the presence of extensive research (Bartholomew & Jowers, 2011; Education, 2010; Engelsen, 2022; Martin & Murtagh, 2017; Telama et al., 1997; Tyagi & Mehta, 2024; Solas-Martínez et al., 2025), the strategic aspect of teacher training – namely the ability to design long-term scenarios for engaging students in physical activity during extracurricular time and under conditions of their digital addiction – requires further reimagining.

The purpose of the article is: (1) to provide a theoretical substantiation of the essence of the problem of developing the wellness competence of future primary school teachers; (2) to analyze certain components of their professional readiness regarding the engagement of students in physical activity, specifically assessing the statistical significance of dependencies between associative characteristics and the correlation between them; (3) on this basis, to determine methodological cases for the professional training of future educators to work with students on motivating them for physical education as a component of their wellness competence.

2. RESEARCH METHODS

The study employed the following methods: (a) *theoretical methods* (analysis, synthesis,

generalization) – to analyze the current state of the problem in pedagogical science; b) *student survey* (future teachers) – to identify their attitudes toward physical activity as a component of wellness competence; (c) *statistical evaluation* of the significance of the dependency between categorical variables was conducted using Pearson's χ^2 test, and the assessment of the correlation between variables was carried out using the Cramer's V coefficient of association.

2.1. Instruments and Procedures

The study involved a survey of university students majoring in "Primary Education" at Vasyl Stefanyk Carpathian National University and Ivan Franko National University of Lviv (Ukraine). A total of 297 individuals participated in the anonymous survey. The sample consisted of fourth-year undergraduate students from both full-time and part-time study programs. Participation in the survey was voluntary; the questionnaire was distributed through closed student group chats on social media. Respondents were informed about the purpose of the study.

The questionnaire was developed by the article's authors. The survey was conducted during October – November 2025. Among the respondents, 280 individuals (94.3%) were women, and 16 (5.4%) were men. This gender distribution is typical for pedagogical specialities in Ukrainian universities, where the vast majority of students are female. The sample also varied by the permanent place of residence of the future educators: 130 individuals (43.8%) resided in rural areas, while 167 (56.2%) lived in cities. This characteristic was used to formulate the research hypothesis and determine relevant correlations between various indicators.

2.2. Research Hypotheses

We have formulated the Null Hypothesis (H_0) and Alternative Hypothesis (H_1) to guide the research.

1. *Regarding the place of residence and the physical activity of students (future teachers):*

H_0 : The permanent place of residence of future teachers is not related to the level of their personal physical activity.

H_1 : There is a statistically significant dependency between the place of residence of future teachers (urban/rural) and the level of their physical activity.

2. *Regarding the place of residence and professional goals in the field of physical activity as a component of wellness competence:*

H_0 : The professional goals of future teachers in the field of wellness competence for their future school activities do not depend on their permanent place of residence.

H_1 : The permanent place of residence of future teachers significantly influences the formation of their professional goals regarding future work with students in the field of physical activity and the development of wellness competence.

3. *Regarding the place of residence and intrinsic motivation for pedagogical activity with students aimed at engaging them in physical activity:*

H_0 : The level of intrinsic motivation for working with children is the same for students regardless of their place of residence.

H_1 : There is a statistically significant correlation between the students' place of residence and their intrinsic motivation for pedagogical activity, particularly in the field of engaging students in physical activity.

3. RESULTS AND DISCUSSION

The Eight Dimensions of Wellness model, first proposed in 1976, is the lifework of Dr Bill Hettler. His contributions through the National Wellness Institute in the U.S. have been instrumental in shaping how we understand integrated health promotion today (Hood College, n.d.) (Fig. 1). Specifically, *physical wellness* encompasses physical activity and a healthy lifestyle. This concept is highly relevant to

our study, as future educators are committed to fostering their students' health and well-being; to achieve this, they must be proficient in the core aspects of health preservation.

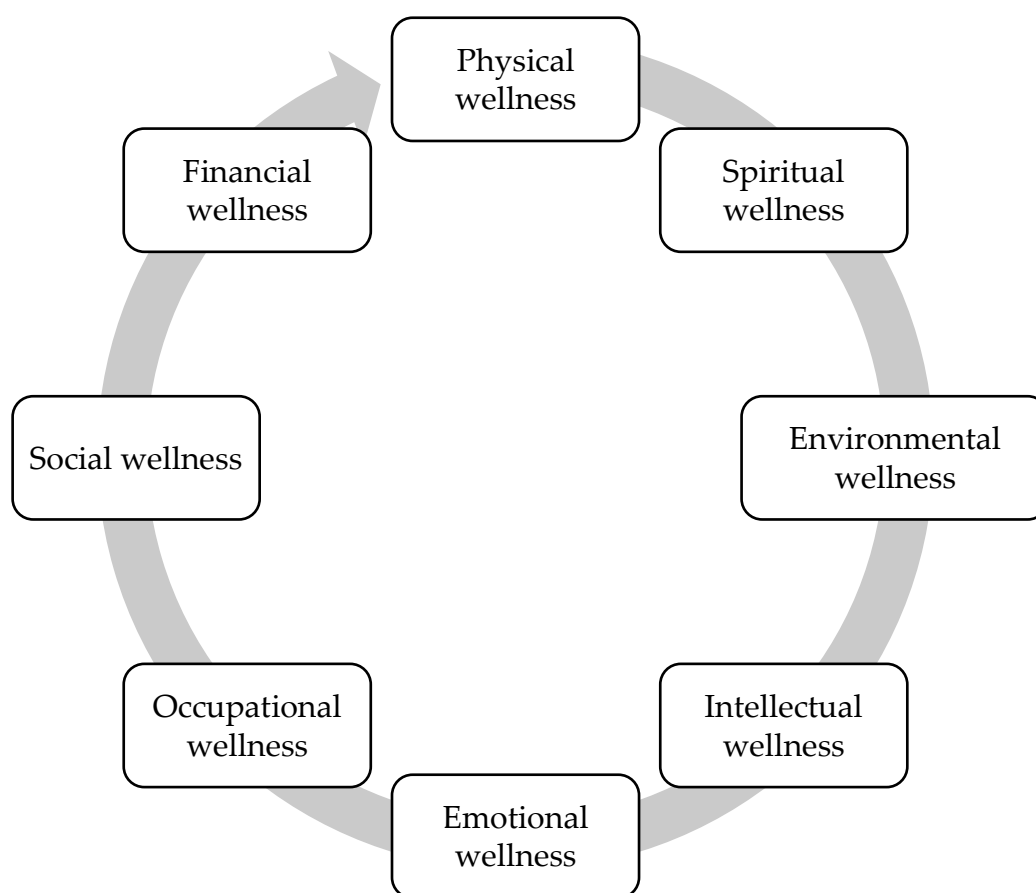


Fig. 1. The Eight Dimensions of Wellness Model by Dr Bill Hettler

Source: Created by the authors based on (Hood College, n.d.)

Thus, within the scope of our experimental research, we examine physical well-being as a key component of future teachers' wellness competence, which directly correlates with their readiness to motivate primary school students toward a healthy lifestyle.

3.1. Results of the Experimental Work

In the process of studying the role of the future teacher in shaping students' habits of physical activity and their wellness competence in this area, we assessed the statistical significance of dependencies among associative characteristics and their correlations. Specifically, we investigated the relationships between the following characteristics (Tabs. 1-3):

- Students' permanent place of residence and their personal physical activity;
- Students' permanent place of residence and their professional goals in the field of students' physical education;
- Students' permanent place of residence and their intrinsic motivation and interest in working with children.

For instance, the responses of future teachers to the question "What professional goals do you set for yourself in the field of physical education for primary school students?" (Fig. 2), which are also presented in Table 2, are noteworthy.

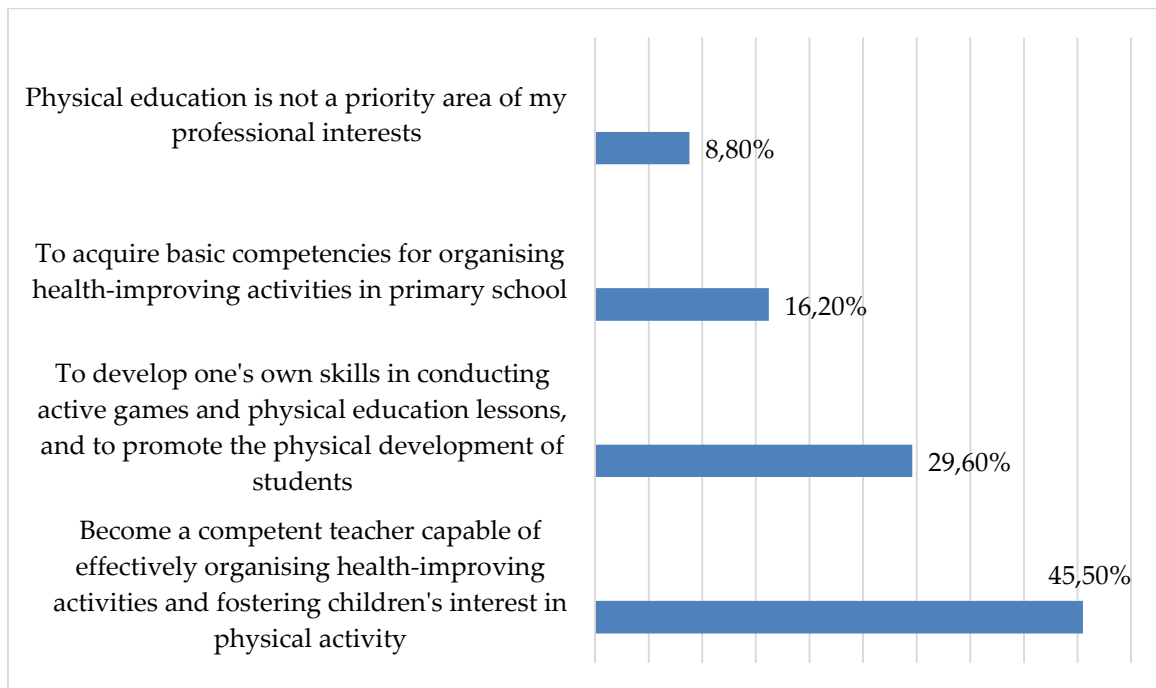


Fig. 2. Future educators' professional goals in the field of physical education for primary school students (according to self-assessment)

Source: Developed by the authors

To calculate the empirical value of Pearson's χ^2 test for each case of assessing the statistical significance of the dependency between categorical variables, contingency tables (crosstabulations) were first constructed, and the theoretical (expected) frequencies were calculated.

Tab. 1

Relationship between students' permanent place of residence and their physical activity

Place of residence / Physical activity	Yes, regularly	Sometimes	No	Total (n)
Urban	36	110	21	167
Rural	22	84	24	130
Total (n)	58	194	45	297

Source: Developed by the authors

Tab. 2

Relationship between students' permanent place of residence and their professional goals in the field of students' physical education

Place of residence / Professional goals	Become a competent teacher capable of effectively organising health-improving activities and fostering children's interest in physical activity	To develop one's own skills in conducting active games and physical education lessons, and to promote the physical development of students	To acquire basic competencies for organising health-improving activities in primary school	Physical education is not a priority area of my professional interests	Total (n)
Urban	68	47	31	21	167
Rural	67	41	17	5	130

Total (n)	135	88	48	26	297
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Source: Developed by the authors

Tab. 3

Relationship between the place of residence and intrinsic motivation for working with children

Place of residence / Intrinsic motivation	Very high	Moderate	Low	Absent	Total (n)
Urban	52	102	9	4	167
Rural	39	84	6	1	130
Total (n)	91	186	15	5	297

Source: Developed by the authors

Tab. 4

Results of theoretical (expected) frequency calculations for each case

Variable pair: Students' permanent place of residence – Physical activity

32.61	109.08	25.30
25.39	84.92	19.70

Variable pair: Students' permanent place of residence – Professional goals in the field of students' physical education

26.99	49.48	75.91	14.62
21.01	38.52	59.09	11.38

Variable pair: Place of permanent residence – internal motivation to work with children

51.17	104.59	8.43	2.81
39.83	81.41	6.57	2.19

Source: Developed by the authors

Pearson's χ^2 test statistic was calculated by the formula:

$$\chi^2 = \sum \frac{(O_i - E_i)^2}{E_i}$$

χ^2 : Pearson's chi-squared test statistic;

O_i : Observed frequency, E_i - Expected frequency;

Σ : Summation sign.

Results of calculations of the empirical value of Pearson's χ^2 criterion for each case:

Students' permanent place of residence – Physical activity:

$$\chi_e^2 = 2.49$$

Students' permanent place of residence – Professional goals in the field of students' physical education:

$$\chi_e^2 = 9.89$$

Place of permanent residence – internal motivation to work with children:

$$\chi_e^2 = 1.41$$

The correlation between variables was assessed using Cramer's V coefficient of mutual connectivity:

$$V = \sqrt{\frac{\chi^2}{n \cdot (k - 1)}}$$

The results of calculating Kramer's V coefficient of interdependence for each case are as follows:

a) students' place of permanent residence – physical activity: $V = 0.064$;

b) students' place of permanent residence – professional goals in the field of physical education of pupils: $V = 0.129$;

c) place of permanent residence – internal motivation in working with children: $V = 0.049$.

Thus, based on the results of the experimental research, we reach the following conclusions.

Based on the results of comparing the calculated empirical values of the χ^2 criterion with its critical value for the statistical significance level $\alpha=0.05$ (for the corresponding number of degrees of freedom $df = (k - 1)(n-1)$, where k, n – the number of rows and columns of the table of feature connectivity) and using J. Cohen's interpretation to assess the strength of the relationship, it can be stated that:

1. No significant relationship was found between the place of permanent residence of future teachers and their physical activity as a component of wellness competence from the given data set ($\chi^2 = 2.49$, $p < 0.05$; $df = 2$) and their place of permanent residence and their internal motivation and interest in working with children in this field ($\chi^2 = 1.41$, $p < 0.05$; $df = 3$). The differences in the frequency distributions are probabilistic and cannot be interpreted as statistically significant. The relationships between these characteristics can be classified as 'very weak' (the values of the Cramer's criterion for these comparisons are $V=0.064$ and $V=0.049$, respectively). The results indicate that the characteristics studied are independent within this sample.

2. At the same time, we have recorded a statistically significant associative relationship between the place of permanent residence of future teachers and their professional goals in the field of physical education of students ($\chi^2 = 9.89$, $p < 0.05$; $df = 3$). The relationship between these characteristics (according to J. Cohen's interpretation) can be classified as 'weak,' since the value of the Cramer's criterion for this comparison is $V = 0.129$. This indicates that place of residence is an important but not the only factor in shaping students' professional goals and their physical activity as a component of general wellness competence.

Thus, according to this study, the null hypotheses were confirmed, and the alternative hypotheses were rejected for the following indicators: a) no statistically significant relationship was found between the place of permanent residence of students and their physical activity; b) the relationship between place of residence and interest in working with children was also found to be statistically insignificant. This indicates that the future teachers' place of permanent residence (urban or rural) is not a significant factor in determining their level of physical activity or their internal motivation to teach in this field.

Therefore, a statistically significant association was found between place of residence and students' professional goals in physical education. With regard to this indicator, the null hypothesis was rejected in favour of the alternative: the place of permanent residence has a certain influence on the formation of professional orientations of future specialists in the field of physical education, in particular, on the development of their wellness competence. However, this factor only has an effect in combination with other determinants.

Research Limitations

Despite the significance of the findings, several limitations of this study should be acknowledged:

1. The sample of the *pilot study* is limited to future teachers from two higher education institutions in cities in western Ukraine (Lviv and Ivano-Frankivsk). Although respondents from rural and urban areas participated in the survey, the data obtained cannot be fully extrapolated to the entire student population of Ukraine, particularly in the eastern or southern regions, where the socio-cultural context

and access to sports infrastructure may differ due to military action.

2. The use of self-reported data always carries a risk of subjectivity, so some indicators of students' physical activity may be overstated.

3. The study is *cross-sectional*, which allows us to record the readiness of future teachers to promote a healthy lifestyle among students only at a specific point in time. Therefore, it is not possible to track the actual change in their professional readiness, for example, in their direct work with students at school.

The next stages of the research will include expanding the geography of the survey and involving future educators from other specialities for a comparative analysis of their wellness competence levels.

3.2. Navigator of Professional Actions for Future Educators

Based on the results of the experimental research, we outline several methodological aspects that can serve as key markers in the professional training of future primary school teachers. To achieve this, it is necessary to address the following questions.

What actions can a teacher take within the school environment to motivate students' physical activity?

Preparing future teachers to work in a digital society requires a transition from the role of a 'standards controller' to that of a motivational mentor and an active environment designer. The primary tasks of an educator in addressing issues of physical inactivity (hypodynamia), digital addiction, and engaging students in physical activity are as follows:

1. Transforming digital devices from 'enemies' into 'allies' by integrating them into the physical education process. This involves using fitness applications and trackers to monitor steps or heart rate during lessons and extracurricular activities. Furthermore, gamified techniques can be implemented, such as QR-code quests in the schoolyard that require physical movement to progress through difficulty levels. These methods also aid in identifying social-emotional well-being during crisis situations (Ciucci et al., 2024; Kotyk & Budnyk, 2025). Additionally, *exergaming* stimulates activity and movement through screen-based interaction via video games (e.g., *Just Dance* battles) (Lobo & Winsler, 2006).

2. Fostering intrinsic motivation for physical education in students instead of relying on external coercion, it is essential to identify non-standardised personal 'triggers' for activity. This implies: providing children with the autonomy to choose their type of activity (e.g., instead of "everyone runs," offering a choice between a dynamic game, dancing, or a relay race); shifting the focus from formal assessment in physical education lessons to the "Joy of Movement," ensuring students derive pleasure and maximum positive emotions from physical exercises or active games (Finn & McInnis, 2014).

3. Implementation of the "Active Classroom" concept, which aims to overcome the challenge of prolonged sedentary behaviour during academic lessons. To achieve this, it is crucial for future teachers to be prepared to conduct engaging, dynamic breaks – short (2–3 minute) 'energisers' or brain breaks integrated into subject learning (e.g., 'math jumps') (McMullen et al., 2014). The teacher should act as an initiator in creating a 'movement ecosystem' both within and outside the school through collaboration with parents (Erwin et al., 2012). A common practice is to propose family challenges (e.g., "Active Weekends") that help children detach from screens at home. In this context, it is essential to explain to parents the correlation between physical movement and a child's cognitive success (brain development through movement), as well as the necessity of physical activity for strengthening health and overall well-being (Mazur et al., 2018).

4. Psychological and pedagogical support and overcoming the 'fear of failure', as students may sometimes feel embarrassed to participate in physical exercises or active games if their perceived skill level is low. Therefore, it is paramount to employ a methodology for creating a 'success situation' – supporting the student's efforts rather than just their achievements. In a digital world, illusions often arise where playing virtual games feels 'easier' than participating in physical ones. Furthermore, inclusivity plays a central role; this involves developing pedagogical strategies that are accessible to children with diverse physical abilities, ensuring that no student feels 'out of the game.'

What are the key areas for developing the wellness competence of future primary school teachers?

The preparation of future teachers to stimulate students' physical activity and implement relevant innovations in higher education must be not only theoretical but also practice-oriented. It should be based on the formation of wellness competence – the ability not only to teach health preservation but also to serve as a role model and a facilitator of an active lifestyle.

Primarily, this involves a shift in the educational paradigm at the university level: moving from theory to the “Health-Locus of Control.” This means the future teacher must undergo an internal transformation to understand the significance and necessity of systematic physical activity. Developing self-management discipline is vital for this purpose. This is supported by health culture courses where higher education students maintain activity logs, use trackers, and analyse their physical and mental states. Ultimately, if a teacher does not value their own physical activity or lacks interest in a healthy lifestyle, they will be unable to motivate a child (Norris et al., 2020). Studying Self-Determination Theory (SDT) helps foster positive motivation in students and provides guidance on transitioning a child's experience from external coercion (“I must run”) to an internal need (“I enjoy this feeling”) (Kinder, 2020).

A current strategy for addressing these tasks is Digital Health Pedagogy, which focuses on using digital platforms and tools to motivate children to engage in physical activity. In teacher training, it is advisable to incorporate Mobile Learning courses to teach the use of platforms (e.g., *GoNoodle*, *Kahoot!*). These can be utilised to create active quests not only during physical education lessons but also in extracurricular settings. To motivate ‘Generation Alpha’ to maintain physical and mental health, teachers also need skills in recording short video instructions for warm-ups or challenges on TikTok/Instagram that resonate with contemporary primary school-aged children.

Furthermore, teacher methodological training involves integrating physical movement into non-cognitive subjects, specifically through the lens of neuropedagogy (neuroeducation). Both university students pursuing teaching degrees and school pupils must understand how physical exercise activates the prefrontal cortex, the area of the brain responsible for executive functions and learning. At the very least, a future teacher should be aware that five minutes of movement before a mathematics lesson significantly enhances concentration. Research indicates that even 15-20 minutes of mental exercises per day improves attention span and cognitive processing speed (Exercises to improve memory and concentration, n.d.).

Another vital area of professional training is the design of an active educational environment in primary schools (Vujičić, 2020). Consequently, university courses should include laboratory work and training sessions on ergonomics (e.g., ‘How to design a classroom to allow children to move freely?’, ‘How to set up an active recreation corner?’) (Tyagi & Mehta, 2024). Systematic workshops should also focus on modelling pedagogical scenarios and developing projects such as “Active Spaces in School or Outdoors,” where every square meter of the school environment stimulates action through interactive walls, creative floor markings, and similar features (Norris et al., 2020).

In this regard, it is also beneficial to practice simulation-based learning, working with so-called ‘challenging cases,’ such as: “A child refuses to move due to fear of ridicule” or “How to involve a student with Special Educational Needs (SEN) in general activities?” Additionally, business games and role-playing scenarios for students can be highly effective in helping them develop strategies to ‘detach’ from their gadgets.

4. CONCLUSIONS

The results of the study showed that the place of residence of a university student has some influence on his or her pedagogical goals in the field of physical education (although this influence is weak), since it was assumed that rural residents are more interested in physical activity. Therefore, professional training methods at the university should not be radically different for ‘urban’ and ‘rural’

students, i.e., the territorial factor is not decisive for the formation of their wellness competence. We contend that the strategies for preparing higher education students in this regard should focus on the teacher's adaptability to the existing material and technical resources, while also accounting for other variables (such as personal sporting background, the quality of higher education, or current media trends).

Furthermore, it is advisable to implement methodological differentiation of the educational process based on students' interests. For instance, students from rural areas may lean more toward team sports, while urban students might prefer fitness technologies. This suggests introducing elective modules (e.g., gamification, outdoor activities) tailored to the needs of a specific community rather than relying solely on students' prior life experiences. Consequently, the practical significance of this research lies in an individual-oriented model for developing future teachers' wellness competence, including the creation of unified methodological cases for engaging primary school students in physical activity.

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Проц Марта, Кирста Наталія, Табака Ольга, Довбенко Світлана, Байдюк Любов, Мачинська Наталія. Wellness-компетентність майбутніх учителів: стратегії залучення і мотивації учнів початкової школи до фізичної активності. *Журнал Прикарпатського університету імені Василя Стефаника*, 13 (1) (2026), 86-98.

Стаття присвячена актуальній проблемі професійної підготовки майбутніх педагогів до залучення та мотивації учнів початкової школи до фізичної активності за допомогою інноваційних методів і форм. У дослідженні здійснено теоретичне обґрунтування сутності wellness-компетентності вчителів як інтегративного утворення, що ґрунтується на концепції цілісного благополуччя (wellness), а також аналіз деяких складників їхньої професійної готовності щодо зацікавлення учнів руховою активністю. Автори розглядають цю компетентність не лише як здатність проектувати власний здоровий спосіб життя і фізичний добробут, а й ефективно застосовувати ці стратегії для формування в учнів ціннісного ставлення до свого здоров'я (фізичного, психічного, духовного і соціального). У межах дослідно-експериментальної роботи проведено опитування українських студентів бакалаврату (майбутніх педагогів), яке дозволило виявити рівень їхньої зацікавленості цією проблематикою та професійну спрямованість на діяльність з молодшими школярами у напрямі стимулювання їхньої рухової активності. Наукова новизна дослідження полягає в тому, що за допомогою методів математичної статистики (критерій χ^2 Пірсона, коефіцієнт V Крамера) вперше виявлено характер зв'язку між соціально-демографічними чинниками та професійними орієнтирами майбутніх учителів у сфері фізичної активності. Встановлено, що територіальна приналежність майбутніх педагогів має статистично значущий, проте слабкий вплив на формування їхніх професійних цілей, що актуалізує потребу в універсальних методичних стратегіях. Запропоновано авторські педагогічні кейси, спрямовані на розвиток wellness-компетентності майбутніх учителів і готовність до мотивації учнів до регулярної рухової активності. Наголошено на застосуванні у професійній підготовці вчителів *Digital Health Pedagogy*, гейміфікації, інтегрування руху у нейропедагогіку, диференціації освітнього процесу за інтересами шляхом впровадження варіативних модулів за вибором тощо.

Ключові слова: майбутні вчителі, wellness-компетентність, мотивація, учні початкової школи, ігрова діяльність, фізична активність, професійна підготовка.