

Article

Using mobile learning to shape the national values of future teachers: An examination of practice

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Abstract: Comparative studies of national values are becoming increasingly important in the context of contemporary globalization processes. An essential condition for the shaping of national values in learners is the enrichment of pedagogical technology with components of digital technology. Both qualitative and quantitative approaches were used in the current study. The purpose of this research is to examine the efficacy of mobile learning in shaping the national values of prospective teachers. The experiment included 180 participants. Diagnostics of the levels of national values formation in the initial stage confirmed the assumption about the low formation of national values among teacher candidates and, consequently, the need for targeted work on their formation. This study demonstrates that significant advances in students' national values have occurred following the introduction and testing of mobile learning with experimental group (EG) participants to shape national values. The data from this study can serve as the basis for creating strategies for shaping the national values of learners in universities and as a methodological basis for adapting mobile learning for the shaping of national values.

Keywords: elementary education; mobile learning; national values; shaping; teacher candidates

1. Introduction

The sociocultural space of the 21st century is characterized by increased interest in the study of national values, their content and their dynamics (Gamage et al., 2021). This problem becomes particularly relevant in the context of globalization when the preservation of traditional values is both an essential basis for the state and one of the means of ensuring its stable, progressive development (Giménez and Tamajón, 2019). Researchers give personal autonomy a high place in the value hierarchy in the information society (Sahin, 2019; Yenen and Ulucan, 2021).

A person can and is capable of very flexibly building his relationships with people and immersing himself in different social communities and different cultural traditions. On the other hand, the intensive technological advancement of information technology has an impact on society, rapidly changing our living conditions, learning environment, and national values (Haleem et al., 2022; Yamin, 2019). The national values of student youth are in the process of formation, require some time to gain stability, and therefore are dependent on various external factors (Allen et al., 2018). Modern universities have ceased to be educational institutions in the traditional sense, in which students learn only the fundamentals of future professional activity. Students' national values are an important, system-forming aspect of their higher education experience (Afrina et al., 2021). The existing

traditional model of education with its priorities and values has come into conflict with the changing sociocultural situation in society and the world, as well as with the modern professional and educational values and values orientations of students (Abildina et al., 2024; Izat et al., 2025; Nurgaliyeva et al., 2024). The need to develop national values for future teachers stems from the fact that the success of their professional activities is strongly influenced by the extent to which their life guidelines and moral principles have been established (Nagima et al., 2022; Toker Gökçe, 2021).

Students experience difficulties in choosing value guidelines due to the worsening of social differentiation, uncertainty about life prospects, marginal position in society, and lack of work experience (Nurgaliyeva et al., 2023). Many students remain apolitical, exhibit bad habits, and lead unhealthy lifestyles. What values are truly valuable to today's young people? The solution to the issues is directly related to the strategy for the formation of national values among students and determining the need and importance of forming appropriate values among future teachers as an urgent problem. The most significant condition for shaping the national values of students is the enrichment of teaching with elements of digital technology (Holik et al., 2023; Voithofer and Nelson, 2021). With mobile devices now widely available, wireless technology enhances learning by easily delivering digital content to students. Students enjoy using mobile technologies for personal and educational purposes. Learning through mobile apps maintains high levels of student engagement and mutual collaboration compared to less technology-focused learning. However, current research does not provide a comprehensive theoretical justification for using mobile learning to shape teacher candidates' national values, and thus it has not been implemented in Kazakhstan's modern higher education space.

Thus, the national values development of teacher candidates is fraught with difficulties. The research issue represents the conflict between the need to develop teacher candidates' national values and the insufficient focus on developing national values in teacher candidates through mobile learning. These challenges can only be overcome through innovative research, the use of mobile learning, and the efficacy of this learning in stimulating the national values development of teacher candidates. However, the main question is whether mobile learning improves teacher candidates' national values. If so, how does this happen? Unfortunately, despite the importance of improving teacher candidates' national values, the existing literature has not sufficiently studied the issue of developing national values among teacher candidates based on mobile learning. In this research, we focus on investigating the efficacy of mobile learning in shaping the national values of prospective teachers and will also contribute to the formation of a harmonious and comprehensively developed personality. This study attempted to address the following research questions.

1.1. Questions for research

Q1: What is the impact of using mobile learning (hereafter referred to as ML) in shaping the national values (hereafter referred to as NV) of future teachers?

1.2. Objectives

The purpose of this research is to examine the efficacy of mobile learning in shaping the national values of prospective teachers.

This study intends to demonstrate how the use of mobile learning in the training of teacher candidates will improve their national values and will also contribute to the formation of a harmonious and comprehensively developed personality.

2. Review of the literature

The problem of values is one of the most important problems in modern scientific discourse. Individuals' life strategies are designed around values which determine the methods they use to achieve their goals (Schwartz and Cieciuch, 2022). The concept of a "value" in modern science lacks a clear definition (Coelho et al., 2024). Value theory raises several questions for researchers. How do values exist, materially or ideally? (Skimina et al., 2021; Tamar et al., 2021). Do they exist objectively, separate from people's consciousness, or subjectively, as a result of that consciousness? What is the mechanism by which the values exist? Many researchers attempted to address these issues as part of their theoretical understanding of the basic value problem (Gouveia, 2019; Passini, 2020). The German philosopher Kant insisted that value is a subjective phenomenon that has as its source a set of intellectual, psychological, and moral characteristics of the individual, manifested externally (Polak, 2023). However, it should be clarified that according to Kant, value refers to the subject of pure will, in other words, the transcendental subject, whose supra-empirical status ensures the universal validity of values. Values are principles not of what is, but of what should be. Kant understood the inadmissibility of confusing value with an object that is presented as valuable. The objectivity of value assessment for him lies not in the objectivity of natural things, but in the objectivity of the highest goals of human existence (Kaiser, 2024). There is no value in things and that we can only establish a certain level of value through our feelings. However, this does not imply that the values are purely subjective (Fisette, 2021). Values are the ultimate concept that encompasses everything imaginable. This recognition of the independent world of values emphasizes its objective nature, independent of the subject's evaluation activity, which is built on many factors, such as upbringing, habits, and taste (Moussa, 2023). The transcendental subject's theoretical value attribution must be distinguished from the individual's practical evaluation. The concept of two levels of value consideration is the most significant contribution to the development of value theory. The first is transcendental; it deals with absolute, ideal values; the second is dispositional, empirical; it is determined by the subject's position in relation to life's realities, his needs and activities, and his choices and preferences regarding the first level's ideals (Stickers, 2022). The values, in their essence, are similar to Plato's ideas and possess the qualities of genuine absolute principles. Values cannot be derived from anything, including the subject. In the real world, there are no such things as values; thus, people's actions are only evaluated using certain value criteria that exist in the subject's consciousness prior to and independently of any experience. The values themselves, objectively, remain essentially unchanged. However, value consciousness is shifting (Hartung, 2021).

Thus, with the revaluation of life, a new circle of ideal values emerges, which is especially evident when historical eras change. Most modern researchers recognize the fundamental divisions of values established in the classical period, namely the distinction between subjective and objective values, relative and absolute, transcendental and empirical. The national values themselves are considered a historically variable result of a value relationship realized in the act of evaluation. Unity was manifested in a common understanding of the conditionality of national (and, more broadly, ethnic) processes through socioeconomic development. Values are impossible without a subject. Since national values are one of the types of social value, all the characteristics of the latter should be extended to national values, and second, the specification of these values as a type of social value should be done by identifying the specifics of their subject, i.e., nation. National values serve as social and normative-cultural guiding principles for the behavior of people of the same ethnicity (Pinho et al., 2021; Zhang et al., 2023). Recognition of these values is based primarily on a person's essential interests as a representative of a specific ethnic group: survival, development, goal achievement, and ideals. Each nation is defined solely by its inherent combination and correlation of temperament, way of thinking, and worldview. Any nation's values include the uniqueness of its inner world and the stability of its internal structure, which organizes information received in a specific manner (Begum et al., 2022). These are, first and foremost, fundamental moral and ethical ideas and norms that focus on expressing one's own uniqueness, identity, character traits, customs, traditions, and way of life, the most basic human needs. National values shape a person's and citizen's life position, attitude toward society and the state, knowledge of his country's past, present, and future, and responsibility for the preservation and enhancement of national property.

3. Methods

3.1. Research design

Both qualitative and quantitative approaches seek to answer the same question. Various techniques are used concurrently with equal importance, and data analysis aims to combine or compare trends discovered with their assistance (Dawadi et al., 2021; McChesney and Aldridge, 2019). This example involved categorizing items based on a quantitative evaluation parameter to analyze verbal data on highly distinct and comparable objects independently. An integrated analysis of these two groups of data revealed the criteria used by the participants when making this or that assessment of similarity and revealed that the participants' strategies for describing similar and different objects differed.

3.2. Research sample formation

The study was carried out at Abai University (Kazakhstan). According to the purpose of the experiment, two groups were formed using random sampling: one was the control group ($n = 88$) (hereafter referred to as CG) and the other was the experimental group ($n = 92$) (hereafter referred to as EG). The experiment included 180 participants.

3.3. Measures

General sociometric indicators were collected including gender, age, course of study, level of preparation for the mobile learning and direction of study (see **Table 1**).

Table 1. General sociometric indicators of the participants.

Descriptive information about a respondent's		Quantity	Sample
Gender	Female	168	82.31%
	Male	12	17.69%
Age	20–25	120	60.76%
	25–30	52	30.13%
	30–35	8	9.11%
Study fields	“6B01303: Primary education with information and communication technologies”	180	100%
The university's name	Abai university	180	100%

3.4. Experimental procedure

The experiment involved the implementation of the following stages:

Stage I: Search. At this study stage, we had to identify the initial level of national values among the students. Ideas about indicators of participants' national values were obtained and students' needs and aspirations were identified.

Stage II is the main one. At this stage, the following tasks were solved: a) a discipline was chosen; b) a mobile learning model was selected; c) a set of educational and methodological materials was prepared for students and teachers.

The experiment was carried out with third-year students during the academic years 2022–2023. The research team consisted of instructors, teachers, hypertext and multimedia application developers, programmers, and designers who provided valuable methodological support for the experiment's development and implementation. Promotion of national values among EG participants was carried out within the framework of the discipline “Methodology Shaping of Prospective Teachers' National Values”, which third-year students' study in the second semester, according to the curriculum. Mobile learning was used in EG with the Kazakh language of instruction. The methodology of the mobile learning process includes structure, logical organization, construction principles, forms and methods of cognition, and methods and means of activity.

The standard CG training program was traditional. The same teachers taught classes in both the EG and the CG, ensuring that the objectives of the experiment were met and that the educational process was effectively managed.

In general, the formative experiment took place in three stages: Stage I (motivational), Stage II (procedure), and Stage III (consolidation). The characteristics of the content of the results of each stage will be presented later in the results.

Stage III is the final stage. After training was completed, the research findings were thoroughly reviewed and synthesized. Data are collected, analyzed, interpreted, and described.

During the study, we adhered to the following levels of national values of the teacher candidates:

Low level: The student lacks knowledge of basic national values; an emotional attitude toward values is insufficient; rejection of values; the student is not guided by basic values and frequently violates moral standards.

Average level: The student's comprehension of fundamental national values is limited; their emotional attitude toward values is not always appropriate; not all societal values are accepted; they are not always guided by them in their behavior and interactions with adults; they are friendly and capable of assisting others.

High level: The student has developed knowledge of basic national values; the emotional attitude toward reality is adequate; the student demonstrates positive emotions toward life values and is guided by them in behavior; and in relationships with those around him, the student is friendly and willing to cooperate and assist one another.

3.5. Description of the educational process

The study incorporated a structured curriculum designed to promote national values among teacher candidates. The process included the following key components:

- 1) Content Modules: Three modules focusing on national identity, ethical reasoning, and collaborative engagement.
- 2) Activities: A mix of lectures, interactive mobile exercises, peer collaboration, and reflective journaling.
- 3) Assessment: Pre- and post-intervention surveys, group presentations, and scenario-based evaluations to measure learning outcomes.

3.6. Research instrument

To collect information, we used: (1) a Questionnaire for assessing students' national values and attitudes toward them, (2) a Survey for determining students' attitudes toward the homeland, attachment to the homeland, traditions, and historical background, and (3) a technique for determining awareness among students of patriotic and civil ideals, legal norms, and national traditions.

In this study, we used the Likert scale (total rating method) to assess students' perceptions of national values in mobile learning.

As mentioned above, this technique involves the use of a scale that allows us to identify the attitude of the respondents toward the problem being studied, in which they express their agreement or disagreement with the proposed judgment. There are various modifications to measurement scales that include two to seven rating points.

3.7. Ethical compliance

Ethical issues were among the most important considerations in organizing educational research. The first requirement for participating in empirical research was the student's voluntary consent. Anonymity and confidentiality are two closely related concepts. Their implementation assumes that the toolkit contains no data that could be used to identify the respondent and that the information that he provides is

not disclosed to third parties. Respondents received alphanumeric identifiers that they could use instead of their names in all surveys and assessments.

3.8. Data analysis

The analysis of the data obtained in the diagnostic process of the state of formation of individual components of national identity was carried out according to the following algorithm: (1) the data were ranked and presented in the form of percentage distributions; (2) the resulting distributions were displayed graphically, and (3) the statistical significance in the experimental group was evaluated using the method of mathematical statistics of the Wilcoxon *W*-test.

4. Results

Table 2 shows the levels of national values among the students in EG and CG at the initial stage.

Table 2. Initial levels of national values of EG and CG (%).

Components	Levels	EG	CG
Information-knowledge	High	67 (77%)	61 (74%)
	Average	25 (23%)	27 (26%)
	Low	0 (0%)	0 (0%)
Value-oriented	High	11 (10%)	10 (9%)
	Average	57 (54%)	58 (52%)
	Low	24 (36%)	20 (39%)
Personal-activity	High	0 (0%)	0 (0%)
	Average	24 (25%)	22 (26%)
	Low	68 (75%)	66 (74%)
Evaluative-reflective	High	16 (18%)	17 (19%)
	Average	22 (23%)	20 (22%)
	Low	54 (59%)	51 (59%)

The histogram depicts the initial level of formation of national value among future teachers in EG and CG, as identified at the beginning (see **Figure 1**).

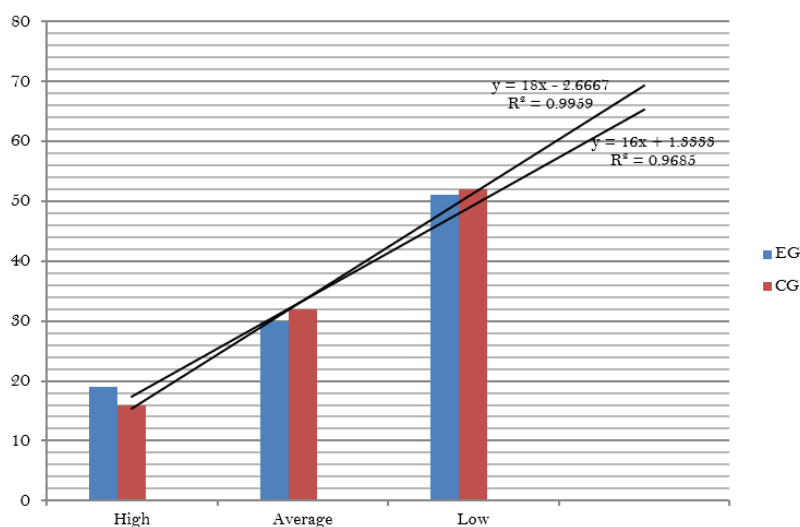


Figure 1. The initial level of national values among participants.

Diagnostics confirmed the assumption that teacher candidates have low levels of NV, indicating a need for targeted work on their development. The author’s concept was used to shape national values in the EG.

The promotion of national values among EG participants was carried out within the framework of the discipline “Methodology Shaping of Prospective Teachers’ National Values”, in which students’ study in the second semester, following the curriculum (see **Table 3**).

Table 3. The content of the discipline “methodology shaping of prospective teachers’ national values”.

Week/Date	Title of the topic (Lectures, practical classes, independent work of students)	Hours	Maximum score
Module 1. Theoretical approaches to organizing mobile learning.			
1	Lecture 1. Education 4.0: From e-learning to mobile learning (m Learning).	2	4
	Practical lesson 1: Formal, non-formal, and informal education. Open education. Gamification, big data, adaptive learning, mixed (Hybrid) learning (Models, learning experiences).	2	6
2	Lecture 2. Types of mobile devices, main characteristics of common mobile operating systems.	2	4
	Practical lesson 2. Mobile learning: opportunities (Advantages) and limitations (Problems and limitations). 2. Use of mobile technologies, creating content about smartphones, 5G.	2	6
	Students’ independent work 1. Study of domestic and foreign experience in raising children. Preparation of digital content on the topic: “Best practices to improve national education of children”.	1	5
3	Lecture 3. Applications of mobile learning in the study of national values.	2	4
	Practical lesson 3. Use platforms to create interactive books and textbooks, knowledge testing resources, and mobile digital laboratories. Create an e-book on the topic “national values in oral literature”.	2	6
4	Lecture 4. The historical basis for the development of ancient Kazakh traditions. Kazakh fairy tales and proverbs and their spiritual significance.	2	4
	Practical lesson 4. Preparation of content using digital resources on the topic “the spiritual world of Kazakhs”.	2	6
	Students’ independent work 2. Create podcasts on the topic of “Kazakh traditions and their spiritual content”.	1	5
5	Lecture 5. Mobile technologies in organizing project and research activities of students.	2	4
	Practical lesson 5. Preparation of content using digital resources on the topic “Kazakh folktales and their spiritual meaning”.	2	6

Table 3. (Continued).

Week/Date	Title of the topic (Lectures, practical classes, independent work of students)	Hours	Maximum score
6	Lecture 6. Methods and forms of using a mobile educational environment to teach the topic: "System of family values' and 'educating girls is the future of the nation".	2	4
	Practical lesson 6. Development of an assignment for students on the topic of national value using QR codes, augmented reality and geolocation. Preparation of content using digital resources on the topic "educating girls is the future of the nation".	2	6
	Students' independent work 3. Write an analytical essay on the topic: "Traditions and customs of the Kazakh people".	1	5
7	Lecture 7. Methods and forms of using a mobile educational environment in teaching on the topic: "Traditions and customs of Kazakh nomads".	2	4
	Practical lesson 7. Preparation of content using digital resources on the topic: "Traditions and customs of the Kazakh people".	2	6
	Students' independent work 4. Preparation of video content on Kazakh traditions and customs.	1	5
8	Lecture 8. Analysis of the theme of national values in children's works of poets and writers.	2	4
	Practical lesson 8. Survey of students to assess their knowledge and understanding of national values.	2	6
	Midterm		100

The discipline under consideration investigates national values from the ethnogenesis of the Kazakh people to the formation of modern society. The topics cover the ethnic problem, the place of the Kazakhs in history and the modern world, national spirituality, traditions, national identity, and national values. Much emphasis is placed on the spiritual and material achievements of the Kazakh people; issues concerning sacred historical sites and historical heritage are addressed; and content is generated using mobile technologies.

The level of NV shaping in the EG and CG was assessed using a set of the same diagnostic methods.

The results of the shaping of the components of NV before and after learning (see **Table 4** and **Figure 2**).

Table 4. Results of national values in EG and CG before and after the intervention.

Components	Group	Level					
		High		Average		Low	
		Before	After	Before	After	Before	After
Information-knowledge	EG	77%	91%	23%	9%	0%	0%
	CG	74%	78%	26%	20%	0%	0%
Value-oriented	EG	11%	51%	57%	47%	24%	0%
	CG	10%	45%	58%	46%	20%	7%
Personal-activity	EG	0%	13%	24%	42%	68%	44%
	CG	0%	5%	22%	25%	66%	70%
Evaluative-reflective	EG	16%	33%	22%	36%	54%	28%
	CG	17%	22%	20%	25%	51%	53%

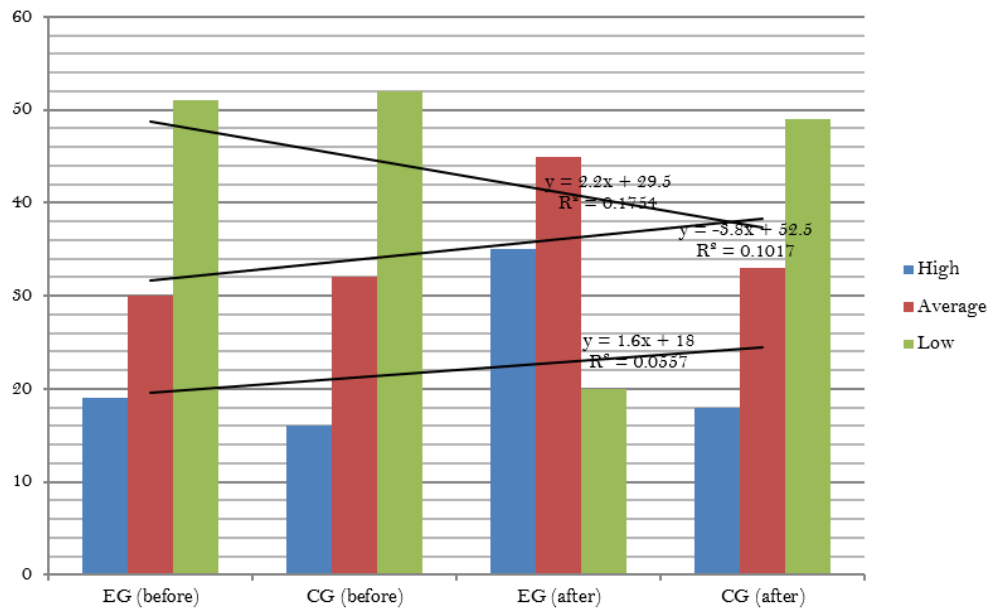


Figure 2. Comparison of results in EG and CG before and after the experiment.

The data obtained show that in the CG, no significant changes were identified in the levels of formation of the components of NV. The dynamics of the development of the four components were most pronounced in the EG. At a high level, the NV indicators were formed in 35% of the students in EG, which is 17% higher than in CG. The average level was recorded in 45% of the students in EG and 33% in CG. The low levels are 20% and 51%, respectively (the difference is 31%).

The dynamics of the levels of formation of national values are presented in **Figure 3**.

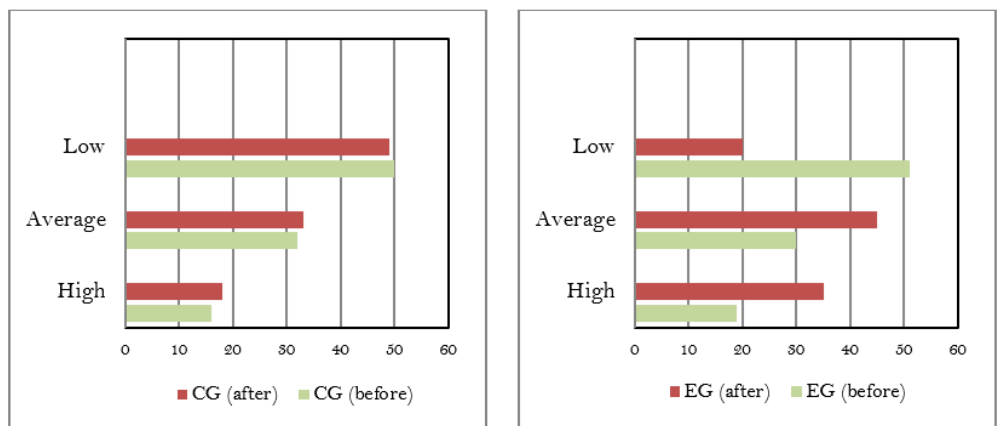


Figure 3. Dynamics of levels of formation of national values.

Certain dynamics of NV formation levels in EG can be traced using ML, which confirms the validity of the hypothesis proposed and the achievement of the research objective.

The results of forming all components of the national content values in EG before and after ML (see **Table 5**).

Table 5. Levels of formation of all components of national values in the experimental group.

Components	Level					
	High		Average		Low	
	Before	After	Before	After	Before	After
Information-knowledge	77%	91%	23%	9%	0%	0%
Value-oriented	11%	51%	57%	47%	24%	0%
Personal-activity	0%	13%	24%	42%	68%	44%
Evaluative-reflective	16%	33%	22%	36%	54%	28%

Referring to **Table 4**, we use the Wilcoxon *W*-test for related samples. It allowed us to establish not only the direction of changes in the components of national values, but also their expression.

Null hypothesis H0: The intensity of the shifts in the obtained results in a larger direction does not exceed the intensity of the shifts in a smaller direction.

Alternative hypothesis H1: The intensity of the shifts in the obtained results in a larger direction exceeds the intensity of the shifts in a smaller direction.

If the empirical value of the Wilcoxon *W* test is greater than the critical value corresponding to $W > 0.05$, then H0 is accepted and H1 is rejected. If the empirical value of the criterion is equal to the critical value corresponding to $W \leq 0.01$, then H0 is rejected and H1 is accepted.

The lower the *W* value, the more reliable the differences. The empirical value of the Wilcoxon *W*-test is calculated using the formula:

$$W = \sum R = \frac{n \times n + 1}{2}$$

where *R* is the rank value of the shifts and *n* is the number of participants in the EG. To calculate *R*, it is necessary to subtract the points obtained in the determination experiment from the sum of the points obtained in the control experiment.

We obtain $W = 3$. For a given number of respondents: $p \leq 0.01 = 397$, $p \leq 0.05 = 466$. The empirical value obtained, $W = 3$, is in the zone of significance. Therefore, the alternative hypothesis H1 is accepted and the null hypothesis H0 is rejected. The result obtained indicates the effectiveness of mobile learning and the methodology of its application.

5. Discussion

This study aims to study the efficacy of ML in shaping the NV of prospective teachers. Diagnostics at the beginning confirmed the assumption about the low level of national values among teacher candidates, indicating the need for targeted development efforts (Berg et al., 2023).

To solve the set tasks of the complex shaping of components of the future teacher's national value, an optimal combination of traditional and innovative forms and methods of pedagogical influence was used (Alam and Mohanty, 2023; Van Leeuwen and Janssen, 2019). The optimal combination of traditional and innovative mobile learning forms and methods aided students' consistent progression from the

reproductive to productive stages of mastering national values (Gao et al., 2021; Rahayu et al., 2022). Therefore, a set of interactive mobile learning methods involving the active use of mobile devices was introduced into the educational process of the EG participants. The changes made to the mobile learning pedagogical system focused on the training content, means, methods, and forms of the technological subsystem (Ahmadian Yazdi et al., 2022; Yang et al., 2022). In the mobile learning information and educational environment, knowledge was presented in a visualized electronic form, and students perceived this knowledge, developed skills, and developed skills through an independent, interactive mode of working with electronic educational material and interactive information interaction (Akgun and Greenhow, 2022). The interactivity allowed the student to interact both between the student and the educational material, as well as the interactive interaction of the students with each other. In the mobile learning process, self-regulation is carried out on the part of the student through independent acquisition of knowledge, self-organization, and self-government (Nikolopoulou, 2023; Zhang and Yu, 2022). New forms of events were implemented (seminars and discussions on innovative technologies introduced into the educational process of mobile learning; organizing Internet conferences; mastering webinar tools for text, audio, and video communication; using presentation materials; holding master classes for innovative teachers in mobile learning systems). Therefore, the advantage of organizing the mobile learning process for students using a well-founded algorithm for the formation of national values compared to traditional learning has been revealed (Khasawneh and Khasawneh, 2023; Okai-Ugbaje et al., 2022; Talan, 2020). Certain dynamics of national value formation are traced in the experimental group using mobile learning, confirming the validity of the hypothesis proposed and the achievement of the research goal. The findings also point to potential areas for deeper investigation. While the majority of participants reported an increased awareness of national identity, variations in individual responses suggest that the effectiveness of mobile learning might depend on factors such as prior exposure to digital tools, personal interest in cultural topics, and differing levels of baseline understanding of national values.

5.1. Challenges and limitations of mobile learning implementation

While the findings highlight the benefits of mobile learning, several challenges must be acknowledged:

(1) **Device Inequality:** Not all participants had equal access to mobile devices, which may have influenced the outcomes. Addressing this requires institutional support, such as loan programs or subsidies for students in need.

(2) **Internet Connectivity:** Limited connectivity posed barriers to seamless participation. Future interventions should consider integrating offline mobile learning modules that can be pre-downloaded and used without internet access.

(3) **Digital Literacy:** Varying levels of comfort and skill with digital tools among participants highlight the need for targeted training sessions to ensure all students can fully engage with the technology.

(4) Teacher candidates may have entered the program with differing levels of awareness and commitment to national values, which could skew the results.

(5) Variations in access to mobile devices or internet connectivity might have influenced the degree of engagement and learning outcomes among participants.

(6) The effectiveness of mobile learning might be partially attributed to the instructional approach rather than the technology itself, requiring further exploration to isolate these effects.

(7) The study primarily assesses immediate post-intervention outcomes. A longitudinal study could provide insights into whether these observed gains in national values are sustained over time.

Future research should explore these challenges in greater depth, focusing on scalable and sustainable solutions to ensure the equitable implementation of mobile learning.

5.2. Recommendations and practical framework for educators

(1) Develop Value-Based Mobile Learning Content

1) Create and curate culturally rich, interactive modules that highlight national identity, ethical quandaries, and social responsibility.

2) Use multimedia content, such as videos, case studies, and quizzes, to engage students in critical thinking about national identity and values.

(2) Promote collaborative learning activities.

1) Incorporate group discussions, collaborative projects, and peer reviews into mobile learning platforms.

2) Utilize tools like forums and shared digital workspaces to encourage dialogue on real-world issues related to national values.

(3) Embed reflective practices.

1) Introduce reflective exercises to help students connect theoretical knowledge with personal experiences.

2) Use mobile apps that support journaling or self-assessment to encourage reflection on how national values influence their teaching practices.

6. Conclusions

This study aims to study the efficacy of mobile learning in shaping national values from prospective teachers. Diagnostics at the beginning confirmed the assumption of the low level of NV among teacher candidates, indicating the need for targeted development efforts. The promotion of national values among the participants in the EG was carried out within the framework of the discipline “Methodology Shaping of Prospective Teachers’ National Values”. The use of an optimal combination of traditional and innovative pedagogical forms and methods helped students consistently transition from the reproductive to productive stages of learning national values. A set of interactive mobile learning methods that involve the active use of mobile devices was introduced into the educational process for EG participants. The changes made to the mobile learning pedagogical system focused on the content, means, methods and forms of the training of the technological subsystem. The interaction allowed the student to interact both between the student and the

educational material, as well as the interactive interaction of the students with each other. New forms of events were implemented (seminars and discussions on innovative technologies introduced into the educational process of mobile learning; organizing Internet conferences; mastering webinar tools for text, audio, and video communication; using presentation materials; holding master classes for innovative teachers in mobile learning systems). Therefore, the advantage of organizing the mobile learning process for students using a well-founded algorithm for the formation of national values compared to traditional learning has been revealed.

However, this research also opens avenues for future exploration. To deepen understanding and expand the impact of these findings, several directions are recommended:

(1) Longitudinal Studies: Investigate the long-term effects of mobile learning on the sustained development of national values in teacher candidates and their subsequent influence on students in classroom settings.

(2) Cross-Cultural Comparisons: Conduct comparative studies across different cultural and educational contexts to understand how mobile learning can be adapted to diverse national and regional values.

(3) Integration of Emerging Technologies: Explore how technologies like artificial intelligence, augmented reality, and gamification can further enhance the engagement and effectiveness of mobile learning platforms in promoting national values.

By addressing these areas, future studies can build on the foundation laid by this research, creating a more comprehensive understanding of how mobile learning can shape not only national values but also a harmonious and well-rounded teacher workforce.

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