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MOTIVATIONAL DYNAMICS IN DIGITAL FOREIGN LANGUAGE COMMUNICATIVE COMPETENCE DEVELOPMENT OF PRE-SERVICE SCIENCE TEACHERS

Annotation. *The study is about the low level of English proficiency among students in Kazakhstan and the need to develop foreign language communicative competence in a digital learning environment within the framework of the trilingual education policy. The research focuses on motivational dynamics among first-year pre-service science teachers engaged in digital foreign language learning. A two-stage survey was conducted among 84 students at South Kazakhstan Pedagogical University named after O. Zhanibekov in September and November 2024 using a 17-item Likert-scale questionnaire. An integral motivation index was calculated based on mean values. To further examine motivational dynamics, correlation analysis was applied to explore the relationship between motivation levels before and after the digital Foreign Language course using Pearson's and Spearman's correlation coefficients. The research was conducted within a digital foreign language course that combined online speech simulators with tasks reflecting the professional needs of pre-service science teachers. The analysis points to a generally high and slightly increasing level of motivation, with the integral motivation index rising from 5.0 to 5.2. Students demonstrated increased awareness of the professional value of English and higher self-assessed language proficiency. The absence of a statistically significant correlation between pre- and post-course motivation suggests a leveling effect associated with digital instructional practices. The findings suggest the role of digital tools, practice-oriented instruction, and the combination of intrinsic and instrumental motivation in supporting motivational stability and strengthening digital foreign language communicative competence development among pre-service science teachers.*

Keywords: *motivation, foreign communicative competence, pre-service teachers, higher education, English learning.*

Introduction

In the Republic of Kazakhstan, the development of the state language (Kazakh) continues, and the trilingual education course, that is, the study of Russian and English, starting from the school curriculum, continues to be implemented. This resolution

is contained in the Concept for the development of language policy in the Republic of Kazakhstan for 2023-2029 [1]. The need to study a foreign language is determined by the geographical location of the state and its development, as well as the desire to exert influence in the global economic environment. Knowledge and appropriate use of English facilitates the exchange of experiences between different ethnic groups. However, knowledge of English in Kazakhstan remains low both among university graduates and at other levels of education. In 2025, Kazakhstan ranked 103rd out of 116 countries worldwide in English proficiency [2]. Low language proficiency indicates gaps, primarily in the educational sphere. Students entering pedagogical specialties do not fully understand the degree of necessity of proficiency in English and the ability to use it for future teaching of specialized subjects. Proficiency in a foreign language also facilitates international professional internships, successful research, and participation in international conferences and student exchange programs. Therefore, one of the goals of a pedagogical university at the initial stage of training is not simply to teach, but to activate awareness and identify students as future specialists in their field [3].

The content of foreign language communicative competence (FLCC) was examined in detail by Baigulina et al. [4] and Sagnayeva [5], who emphasized its relevance for students of natural sciences. Kapysheva et al. [6] noted that in the context of global integration and professional demands, the development of FLCC among university students has become a strategic educational priority. Fakhrutdinova, Yarmakeev, and Fakhrutdinov [7] emphasize interactive learning as an effective approach to developing FLCC in solving communicative problems during the learning process. They consider FLCC as a personal quality of a student that collectively supports both professional and personal development. It is also based on linguistic, discursive, sociolinguistic, sociocultural, and socio-personal components, with an emphasis on communication, cooperation, and tolerance.

During the four-year bachelor degree program, the readiness of students for professional activity develops gradually. Readiness to study a foreign language, from the point of view of pedagogical sciences, lies in the factor of professional activity [8]. The phenomenon of motivation in the study of foreign languages (FL) as an object of pedagogical research was considered by Amanov [9], Babich et al. [10], Nuriyeva [11]. Readiness to study a FL is conditioned by the conscious understanding of his or her motives and a positive attitude toward the culture and traditions of the country of the language being studied. Understanding the demand for using a FL in a future profession is an additional incentive for its study.

Unlike studies limited to a single measurement, this research examines short-term motivational dynamics within a digitally supported FL course for pre-service science teachers. It integrates theoretical perspectives on motivation with an analysis of survey data collected from first-year natural science students using a Likert scale and an

integrated motivation index. It allows for the identification of trends and the development of pedagogical recommendations.

Theoretical analysis of motivation in foreign language teaching relies on several approaches describing both internal and external sources of motivation for learning a FL. Motivation for professional activity can be the starting point for the formation of a professional teacher identity [12]. Japanese colleagues place primary emphasis on pragmatic motivation. They define it as formed under the influence of globalization and economic factors [13]. A number of scholars have pointed to a multiplier effect, when external motivation “compensates” for the lack of internal motivation. Here, a combination of internal and external motivations is most effective for academic performance [14]. In Krasnikov’s view, motivation is a central factor influencing student academic performance [15]. Emphasizing behavioral motivation, there is a direct link between diligence (efforts applied) and the level of stimulation. Motivation here should be considered instrumental (extrinsic) in nature: that is, it is worth studying to avoid losses (e.g., expulsion, low grades) and to gain benefits (perhaps good or excellent grades, increased scholarships, recognition, etc.). This theoretical framework allowed us to design the questionnaire for our study and interpret the results, taking into account the multi-level structure of motivation.

Nezhenets [16] highlights the key role of both intrinsic and extrinsic motivation in the development of foreign language communicative skills (speaking, listening comprehension, and intercultural communication). These findings align with contemporary educational approaches that regard motivation as a central factor in the formation of linguistic competence.

A study by Zadorozhna and Datskiv [17] found high levels of instrumental (learning for practical benefit) motivation among students. In their work, the authors offer recommendations based on positive psychology, including the use of technology, maintaining student engagement, providing role models, and employing motivational strategies.

According to Antonenko [18], student motivation is the starting point for effective learning, especially in the field of language education. The author examined the conditions for developing student motivation in the development of language learning, as well as a diagnostic model of motivation as one of the conditions for learning.

The study’s aim is to identify and conduct a comparative analysis of the motivational attitudes of future science teachers toward learning foreign languages and developing FL curricula. This study was based on a two-stage survey of first-year students, conducted two months apart.

The object of the study is the process of professional training of future teachers of natural sciences (6B015), and the subject of the study is the dynamics of motivation for

learning a foreign language and the formation of FLCC in the conditions of the initial stage of training in the specialty.

Based on the objective, the research questions were:

RQ1: What are the characteristics and short-term changes in motivation toward learning English among future science teachers?

RQ2: How do students' motivations for learning English change after completing the implemented course using digital learning tools?

Materials and methods

This study is a quantitative empirical investigation based on survey methodology with two measurements at different points in time. Although data was collected in 2024, the research examines stable characteristics of student motivation and the development of foreign language learning within the framework of trilingual education policy in Kazakhstan. It remains relevant in the current educational context. The use of a Likert scale, the calculation of mean values, and a typology of motivation levels indicate a descriptive-analytical approach. The collected data allow for interpretation based on the primary objective of the study, which is to measure and analyze the motivation of science students to learn foreign languages.

In parallel with the survey, a pedagogical experiment was conducted, described in the article “Developing Foreign Language Communicative Competence in Future Science Teachers Using Online Speech Simulators: The Kazakhstan Experience” [19]. For the experiment, 84 first-year students were divided into a control and experimental group of 42 students each. Both groups were administered a test to determine their level of communicative competence in the foreign language before and after completing the introduced foreign language course. The results allowed us to evaluate the impact of digital tools (online speech simulators) on the development of communicative competence in a foreign language. In this article, we also documented changes in motivational characteristics following the pedagogical intervention.

The survey, like the experiment mentioned above, was conducted among students of the South Kazakhstan Pedagogical University named after O. Zhanibekov, Shymkent. Pre-service teachers were studying in the following educational programs of the first semester: Chemistry, Physics, Biology, Physics-Informatics, Chemistry-Biology and Mathematics-Physics. The survey on the topic “Motivation of future teachers of natural sciences to study a foreign language and develop foreign language communicative competence” included 25 questions and was conducted in two stages: at the initial stage of training in September 2024 and again in November 2024, upon completion of the discipline according to the approved syllabus “Foreign language”. Of the 84 valid questionnaires, the largest share of respondents were students in Biology 29.8% (26 students), followed by students majoring

in Chemistry 25% and Mathematics-Physics 16.7%. A detailed distribution of participants by training area is presented in Figure 1.

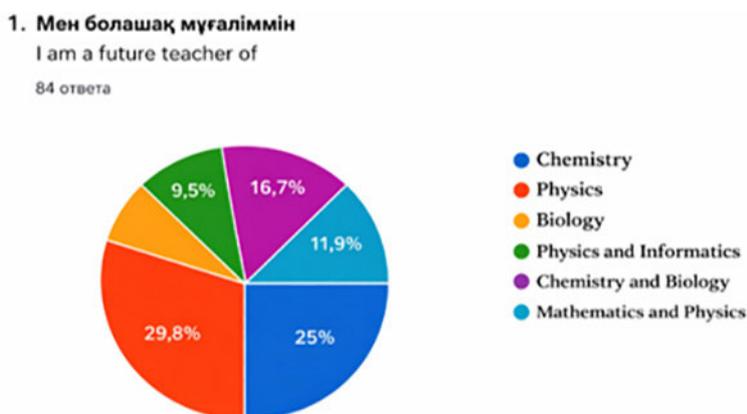


Figure 1 – Distribution of pre-service science teachers by specialization

To process the survey data, we calculated the mean score for each questionnaire item using a six-point Likert scale (Table 1 – Distribution of scores based on answer options). This indicator allowed an objective assessment of the expression degree of motivational attitudes on individual aspects of foreign language learning. Average values provided an opportunity to compare assessments on different parameters, identify the most and least significant motivational factors for students, and conduct a comparative analysis of the results of two surveys.

Table 1 – Distribution of scores based on answer options

Response	Score
Strongly Disagree	1
Disagree	2
Slightly Disagree	3
Slightly Agree	4
Agree	5
Strongly Agree	6

In addition, based on the average values for the 17 statements submitted by the students, an integral motivation indicator was determined, reflecting the overall level of interest in learning English by students. This made it possible to classify motivation and track its dynamics:

Low level – 1.0 to 2.9

Moderate level – 3.0 to 4.4

High level – 4.5 to 6.0

To further examine the relationship between motivational indicators were used correlation analysis. The integral motivation index obtained before the start of the Foreign Language course and after its completion was analyzed using Pearson's correlation coefficient. Given the ordinal nature of Likert-scale data, Spearman's rank correlation coefficient was also applied. The statistical analysis was performed using SPSS Statistics 28.

Results and discussion

A positive shift was observed between the first and second surveys in response to the statement “Did you know that teaching physics, chemistry, and biology in English in schools is highly valued by employers?”. In the first survey, 75 out of 84 respondents (89.3%) answered affirmatively. In the second survey, this number increased to 82 (97.6%), indicating a notable rise in awareness. This improvement may reflect the influence of classroom discussions that helped students better understand how English is used in current educational settings (Figure 2 – Awareness of the value of teaching science subjects in English: pre- and post-survey results).

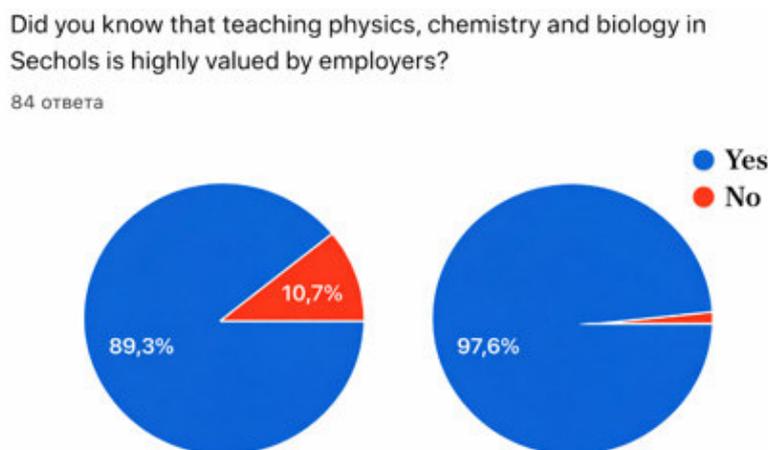


Figure 2 – Awareness of the value of teaching science subjects in English:
pre- and post-survey results

At both the first and second surveys, students were asked to independently assess their level of English knowledge before the start of the course and after two months of studying the “Foreign Language” discipline (Figure 3 – Comparative scale of assessing knowledge of respondents).

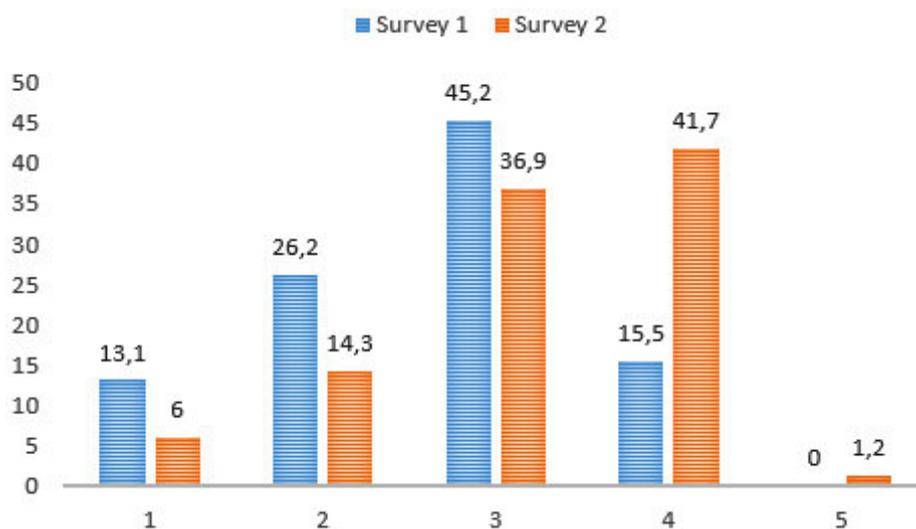


Figure 3 – Comparative scale of assessing knowledge

According to the results of the first survey, none of the respondents rated their knowledge as the highest on a five-point scale. The largest number of students about 38 people indicated level “3” (satisfactory). According to the results of the second survey, the number of such students decreased to 31. At the same time, positive dynamics are observed: the number of students who rated their knowledge as level “4” (good) increased by 26.2%, which may indicate effective assimilation of the educational material during the course.

To analyze the data obtained, the formula for the average score on the Likert scale (from 1 to 6) was used:

$$\text{Mean Score} = \frac{\sum_{i=1}^n (i \cdot \text{number of responses}_i)}{\text{total number of respondents}}$$

where:

- i – the Likert scale value (from 1 to 6);
- number of responses _{i} – the number of respondents who selected each response option i ;
- total number of respondents (the sum of all responses to the given statement).

The use of this formula allowed us to move from qualitative to quantitative assessments, providing a standardized comparison of attitudes for each of the 17 statements. This made it possible to objectively identify those aspects of learning English that are of greatest interest, value or difficulty to students (Table 2 – Results of the first and second surveys).

Table 2 – Results of the first and second surveys

№	Statement	Mean (Survey 1)	Mean (Survey 2)	Change
1	I would like to learn several foreign languages.	5.5	5.4	-0.1
2	Learning a foreign language is useful and interesting.	5.6	5.6	0
3	I do not consider my English lessons a waste of time.	3.8	4.4	+0.6
4	I enjoy learning a foreign language.	4.5	5	+0.5
5	I need to learn English for my future career.	5.2	5.5	+0.3
6	Learning English is one of the goals I set for myself in life.	5.2	5.4	+0.2
7	I like the English language.	5.3	5.3	0
8	Every educated person should know English.	4.8	5	+0.2
9	I prefer spending time on English rather than on other subjects or activities.	3.2	4	+0.8
10	I do not postpone doing my English homework.	4.4	4.7	+0.3
11	I would like to learn English to the extent that speaking it feels as natural as speaking my native language.	5.5	5.5	0
12	My desire to learn English is now stronger than ever.	5.5	5.5	0
13	I clearly understand why I need to learn English.	5.5	5.5	0
14	I do not feel like I am wasting time when studying English.	4.7	5.1	+0.4
15	A person who knows foreign languages deserves respect.	5.2	5.3	+0.1
16	I understand how important it is to practice speaking English as much as possible.	5.5	5.6	+0.1
17	I would like to speak English more fluently.	5.7	5.8	+0.1
	Total	85.1	88.6	+3.5

The analysis of the results of two Likert scale surveys shows a generally positive attitude of students towards learning English. The average scores for 17 statements range from 3.2 to 5.6. It indicates varying degrees of involvement and motivation. Nine statements show an increase in the average score, six have a decrease, and two have remained unchanged. This shows a moderate but noticeable change in students' perception of the subject. The greatest increase was noted in the statement "I do not consider my English lessons a waste of time" (+0.6) and "I need to learn English for my future career" (+0.3), indicating an increase in internal and external motivation. It is especially important that the desire for fluency in the language is associated not only with utilitarian value, but also with personal goals and self-realization. At the same time, statements about the benefits and interest in learning a foreign language, as well as about strong and conscious

motivation (“Now my desire to learn English is stronger than ever”) received consistently high ratings.

However, a slight decline was observed for the statement “I would like to learn several foreign languages” (–0.1). This change suggests that, during the first semester, students tended to concentrate on immediate academic tasks rather than broader language-learning goals. At the same time, indicators related to homework completion showed positive dynamics, despite the increased workload typical of the first year.

In conclusion, students maintain a stable interest in English as a tool for career and personal growth. However, the survey results also indicate the need to improve the content and format of classes to maintain and strengthen learning motivation. It is especially important to take into account personal goals and strive for more practice-oriented learning by students.

The average scores obtained as a result of processing allowed us not only to track changes over time (between the first and second surveys), but also to calculate the Integral Motivation Index. To do this, we calculated the average value obtained by summing up all the average scores for 17 statements and dividing by their number. The calculations were carried out separately for the data from the first and second surveys, which allowed for a comparative analysis.

In the first survey, the sum of the mean scores for all statements was 85.1, thus the integral motivation index is calculated as:

$$\frac{85.1}{17} \approx 5.0$$

In the second survey, the sum of the mean scores was 88.6, therefore the integral index is:

$$\frac{88.6}{17} \approx 5.2$$

where:

- 17 is the total number of statements related to motivation;
- the sum of mean scores represents the total of average ratings given to each statement by respondents;
- the integral index reflects the overall level of motivation among participants, calculated as the average of the mean scores.

Both values correspond to a high level of motivation (from 4.5 to 6.0). A slight increase in the integral indicator in the second survey may indicate a strengthening of the motivational attitudes, which may be associated with a positive perception of the educational process, awareness of the importance of the English language, or the influence of external and internal factors. Thus, the integral indicator serves as an important indicator of the general direction of motivation and allows us to judge not only the level

of interest of students, but also the effectiveness of pedagogical influences implemented between the first and second surveys.

For additional analysis of the relationship between motivational indicators, a correlation analysis was conducted between the integral motivation index measured before and after completion of the Foreign Language course, incorporating digital speech simulators. The results of Pearson's correlation revealed no statistically significant association between the two measures ($r = 0.027$, $p = 0.805$, $N = 84$). Similar findings were obtained using Spearman's rank correlation coefficient ($\rho = -0.100$, $p = 0.365$). These results indicate that students' initial level of motivation did not have a substantial influence on their motivational outcomes after completing the course, which may suggest a general equalizing effect of the educational process on students' motivation.

This result suggests that the instructional design of the digital course may have contributed to reducing initial differences in students' motivation levels. In other words, students entered the course with different motivational profiles. These differences became less salient over time. This points to the course functioning as a balancing factor, supporting motivation development regardless of students' initial attitudes toward learning English.

The study revealed a generally high and slightly increasing level of motivation among first-year students of natural sciences to study English and develop FLCC. The integral motivation indicator rose from 85.1 to 88.6, with most statements showing either stable and positive dynamics. The strongest gains were observed in statements reflecting both internal motivation ("I enjoy learning a foreign language") and external motivation ("I need to learn English for my future career"). The increase in awareness about the value of English in professional contexts, from 89.3% to 97.6% demonstrates that students increasingly recognize the pragmatic importance of FLCC.

Concerning RQ2, the results demonstrate that students' motivation for learning English changed after completing the course integrating digital learning tools. The identified changes in motivation were, in fact, the result of a targeted pedagogical intervention. It was implemented through a syllabus update for the "Foreign Language" course. This intervention included a new teacher, curriculum revision, and the integration of digital learning tools into the educational process. Learning materials were structured by difficulty and located on the Tilda website with a link to YouTube teaching videos. Feedback was provided through the online learning platform and Telegram messages. We also attribute the improved attitude toward foreign language acquisition to the gradual adaptation to the university and its educational format. Students developed a clearer understanding of the structure of the English language and the academic requirements of the course. This led to a reassessment of their attitudes toward learning English (before and after the intervention). Furthermore, successful experience with online speech simulators provided opportunities to develop language skills [19]. In our opinion,

all of these factors contributed to increased self-confidence, a greater awareness of the professional significance of English, and, consequently, positive changes in both intrinsic and instrumental motivation.

The results support existing theoretical perspectives that emphasize the multifaceted nature of motivation for learning a foreign language [13]. The combination of intrinsic pleasure and pragmatics corresponds to a dual motivational model and confirms earlier results mentioned in the introductory section of the article [12; 16]. This concerns the effectiveness of combining intrinsic and instrumental motivation in learning a foreign language.

The increase in self-assessment of students in their language competence achievements after the course indicates that pedagogical interventions, including the use of online simulators [19], can positively influence not only the development of skills but also motivational attitudes.

From a pedagogical perspective, the results highlight the importance of integrating career-focused and personally relevant content into foreign language instruction. Providing clear connections between English and future teaching careers of students in STEM fields increases their instrumental motivation. A variety of interactive learning formats can enhance internal engagement. Furthermore, reinforcing the value of communication and intercultural competence (core components of FLCC) can enhance student appreciation of English beyond its general purpose.

To maintain and strengthen motivation, it is best to use differentiated learning strategies. These take into account background knowledge of students, interests, and career goals. The use of digital tools and authentic communication scenarios, as demonstrated in the experimental group, can be key in this regard.

The study is limited by its relatively short observation period: two months between the two surveys. This can be considered a limitation: although it allowed us to obtain initial data on motivation dynamics, it does not reflect long-term trends or deeper changes in the development of FLCC. Furthermore, the study was conducted at a single university in southern Kazakhstan, which may limit the generalizability of the results. Self-reported motivation and proficiency, while useful, may be affected by subjective bias and social desirability.

Future studies could extend the period of monitoring the motivational component and utilize mixed methods, such as surveys with qualitative interviews or focus groups. They could also look beyond a single university and compare regional higher education institutions.

Conclusion

This study demonstrates that first-year students majoring in natural sciences show a generally high level of motivation to learn a foreign language and to develop communica-

tive competence. The survey data show positive changes in motivational attitudes, particularly in students' awareness of the role of English in their future professional activities. Also, in their aspiration to achieve greater language fluency. The observed increase in the overall motivation index suggests that the instructional approach used in the course, including online speech simulators, had a supportive effect on students' motivation.

The stability of students' motivational attitudes provides a favorable context for the gradual development of foreign language communicative competence in a digitally supported learning environment.

At the same time, the analysis revealed that changes across individual motivational indicators were not uniform. Some aspects of engagement increased more noticeably than others, which points to differences in how students respond to various elements of the learning process. This shows the importance of carefully designing learning tasks and balancing students' efforts between English and discipline-specific subjects, especially in the first year of study.

From the perspective of teacher education, the results suggest that foreign language instruction for future STEM teachers benefits from a differentiated and student-oriented approach. Organizing learning activities that combine professional relevance, interactive formats, and clear learning goals can support students' intrinsic motivation and contribute to the gradual development of foreign language communicative competence as part of their overall professional preparation.

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Contribution of the authors:

D. Antontseva – was responsible for the theoretical foundation of the study. She conducted a comprehensive review of the literature on foreign language communicative competence, students' motivation and trilingual education policy in Kazakhstan. She formulated the research problem, objectives and hypotheses, developed the conceptual framework of the study and designed the survey instrument. She also contributed to the interpretation of the results and the overall scientific editing of the manuscript.

F. Artykbayeva – coordinated the empirical stage of the research. She organized and conducted the two-stage survey among pre-service natural science teachers, ensured ethical compliance during data collection and managed communication with the participating academic departments. She contributed to data collection, systematization of empirical materials and the drafting of the Methods and Results sections of the manuscript.

A. Dauletova – was responsible for data processing and statistical analysis. She calculated the integral motivation index, analyzed quantitative indicators, prepared tables and figures and interpreted the statistical results. She also participated in the formulation of practical recommendations and in the final revision of the manuscript.

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Болашақ жаратылыстану пәндері мұғалімдерінің цифрлық білім беру ортасында шет тілдік коммуникативтік құзыреттілігін дамытудағы мотивациялық динамика

Аннотация. Осы зерттеу Қазақстан студенттері арасында ағылшын тілін меңгеру деңгейінің төмендігі мәселесіне және үштілді білім беру саясаты аясында цифрлық білім беру ортасында шет тілдік коммуникативтік құзыреттілікті дамыту қажеттілігіне арналған. Цифрлық технологияларды пайдалана отырып шет тілін меңгеріп жүрген жаратылыстану бағытындағы бірінші курс болашақ мұғалімдерінің мотивациялық динамикасы зерттеудің негізгі нысаны болды. 2024 жылдың қыркүйек және қараша айларында О. Жәнібеков атындағы Оңтүстік Қазақстан педагогикалық университетінің 84 студенті арасында Лайкерт шкаласына негізделген сауалнама арқылы екі кезеңдік зерттеу жүргізілді. Орташа мәндер негізінде интегралды мотивациялық индекс есептелді. Мотивациялық динамиканы тереңірек талдау мақсатында «Шет тілі» цифрлық курсы бастауға дейін және аяқтағаннан кейінгі мотивация деңгейлері арасындағы өзара байланысты анықтауға мүмкіндік беретін корреляциялық талдау қолданылды. Статистикалық өңдеу барысында Пирсон корреляция коэффициенті және Спирменнің рангілік корреляция коэффициенті пайдаланылды. Алынған нәтижелер мотивация деңгейінің жоғары және біршама өсім көрсеткенін дәлелдейді: интегралды мотивациялық индекс 5,0-ден 5,2-ге дейін артты. Студенттер ағылшын тілінің кәсіби маңызын тереңірек түсінгенін және тілдік құзыреттілікті өзіндік бағалаудың өскенін көрсетті. Сонымен қатар үй тапсырмаларын орындауға байланысты мотивацияның аздап төмендеу үрдісі байқалды. Курсты бастауға дейінгі және аяқтағаннан кейінгі мотивация көрсеткіштері арасында статистикалық мәнді корреляцияның болмауы цифрлық білім беру тәжірибесінің әсерінен мотивацияның белгілі бір деңгейде теңестірілгенін көрсетуі мүмкін. Зерттеу нәтижелері болашақ

жаратылыстану пәндері мұғалімдерінің тұрақты мотивациясын қолдау және цифрлық шет тілдік коммуникативтік құзыреттілігін дамыту үшін цифрлық құралдардың, практикалық бағытталған оқытудың, сондай-ақ ішкі және инструменталдық мотивацияны ұштастырудың маңыздылығын айқындайды.

Кілтті сөздер: мотивация, шетел коммуникативтік құзыреттілік, болашақ мұғалімдер, жоғары білім, ағылшын тілін үйрену.

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Мотивационная динамика развития иноязычной коммуникативной компетенции будущих учителей естественно-научных дисциплин в цифровой образовательной среде

Аннотация. Настоящее исследование посвящено проблеме низкого уровня владения английским языком среди студентов Казахстана и необходимости развития иноязычной коммуникативной компетенции (FLCC) в цифровой образовательной среде в рамках политики трехязычного образования. Динамика мотивации у будущих учителей естественно-научных дисциплин первого курса, обучающихся иностранному языку с использованием цифровых технологий, явилась ключевым интересом данного исследования. Двухэтапное анкетирование было проведено среди 84 студентов Южно-Казахстанского педагогического университета имени О. Жанибекова в сентябре и ноябре 2024 года с использованием опросника на основе шкалы Лайкерта. Средние значения раскрыли интегральный мотивационный индекс. Для более детального анализа мотивационной динамики был применён корреляционный анализ, позволивший выявить взаимосвязь между уровнями мотивации до и после завершения цифрового курса «Иностранный язык». В статистической обработке данных использовались коэффициенты корреляции Пирсона и ранговой корреляции Спирмена. Полученные результаты свидетельствуют о высоком и незначительно возрастающем уровне мотивации, при этом значение интегрального мотивационного индекса увеличилось с 5,0 до 5,2. Студенты продемонстрировали более высокую осознанность профессиональной значимости английского языка и рост самооценки языковой компетентности. В тоже время была зафиксирована небольшая тенденция к снижению мотивации, связанной с выполнением домашних заданий. Отсутствие статистически значимой корреляции между показателями мотивации до и после курса может указывать на эффект выравнивания мотивации под влиянием цифровых образовательных практик. Результаты исследования подчёркивают значимость цифровых инструментов, практико-ориентированного обучения и сочетания внутренней и инструментальной мотивации для поддержания устойчивой мотивации и развития цифровой иноязычной коммуникативной компетенции у будущих учителей естественно-научных дисциплин.

Ключевые слова: мотивация, иноязычная коммуникативная компетенция, будущие учителя, высшее образование, изучение английского языка.

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