THE EFFECTIVENESS OF DIGITAL TECHNOLOGIES IN THE FORMATION OF ENGLISH LANGUAGE COMMUNICATIVE COMPETENCE IN INTEGRATED LEARNING

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ABSTRACT

This article was devoted to the study of the formation of communicative competence in the process of communication in English in teaching organic chemistry. In the research work, the components of communicative competence were determined, and effective platforms of the education system were used for its formation. Considering various path of forming foreign language communicative competence, attention was paid to the principles that enable the implementation of the digital education system and digital platforms that contribute to the formation of communicative competence. The process of formation and development of communicative competence is the main part of the requirements for learning English. In the article the possibilities and features of platforms in the education system are considered. Applying the proposed platforms, a set of tasks on the affair of organic chemistry was compiled. A set of exercises was tested during the experiment, and the results of the analysis were described. According to the results of the experiment, the formation of students' ability to communicate voluntarily in English within the framework of educational content indicates the boffo implementation of digital educational platforms. In addition, the use of various platforms in the educational system is an effective way to form language communicative competence. The use of digital technologies in the educational process has a great impact on the content of the lesson, because submitting a task through the platform supports: to rationally use time, assists students to perceive educational material with interest and form language competence, opening up new opportunities for both the teacher and the student.

Keywords: *C*ommunicative Competence, Digital Technology, Education System, Platform, Study Material

ENTEGRE ÖĞRENMEDE İNGİLİZCENİN İLETİŞİMSEL YETERLİLİĞİNİN OLUŞUMUNDA DİJİTAL TEKNOLOJİLERİN ETKİNLİĞİ

ÖZET

Bu makale, organik kimya öğretiminde ingilizce iletişim sürecinde iletişimsel yeterliliğin oluşumu çalışmasına ayrılmıştır. Araştırma çalışmasında iletişimsel yeterliliğin bileşenleri belirlenmiş ve oluşumu için eğitim sisteminin etkili platformları kullanılmıştır. Yabancı dilde iletişimsel yeterliliğin oluşmasında çeşitli yollar göz önünde bulundurularak, dijital eğitim sisteminin uygulanmasını sağlayan ilkelere ve iletişimsel yeterliliğin oluşmasına katkıda bulunan dijital platformlara dikkat edilmiştir. İletişimsel yeterliliğin oluşumu ve gelişim süreci, İngilizce öğrenme gereksinimlerinin ana parçasıdır. Makale, eğitim sistemindeki platformların olanaklarını ve özelliklerini tartışıyor. Önerilen platformlar kullanılarak, organik kimyada bir dizi alıştırma derlendi. Deney sırasında, bir dizi egzersiz test edildi ve analizin sonuçları açıklandı. Deneyin sonuçlarına göre, eğitim içeriği çerçevesinde öğrencilerin İngilizce keyfi iletişim kurma yeteneğinin oluşması, dijital eğitim platformlarının yüksek kalitede uygulandığını göstermektedir. Ayrıca eğitim sisteminde çeşitli platformların kullanılması, dil iletişimsel yeterliliğinin oluşturulmasında etkili bir yoldur. Eğitim sürecinde dijital teknolojilerin kullanılması dersin içeriği üzerinde büyük bir etkiye sahiptir, çünkü platform desteği aracılığıyla bir ödevin sunulması öğrencilere şu konularda yardımcı olur: zamanı rasyonel kullanma, eğitim materyalini ilgiyle algılama ve dil yeterliliği oluşturma, yeni fırsatlar açma hem öğretmen hem de öğrenci için.

Anahtar Kelimeler: İletişimsel Yeterlilik, Dijital Teknoloji, Eğitim Sistemi, Platform, Çalışma Materyali

INTRODUCTION

Global changes in the political and economic life of society in the 21st century create demand for learning a foreign language as a means of intercultural communication. A modern person is forced to live and work in a multilingual space, where communication, including intercultural and international communication, portray an significant role. In addition, public awareness is becoming an grave factor. The ability to receive and share information is one of the most important requirements for the success of a modern person. That is why it is necessary to learn a foreign language so as to become aware of world information and communicate deliberately with other countries in the professional field. It should be noted that the main language of international relations in politics, business and science is English (Borunova, E.B, 2010). Thus, the formation of the ability to communicate in English and work with information in several languages, that is, the increase in the foreign language communicative competence of future teachers was defined as significance of scientific work.

According to the conclusion of Sinichkin A.A. (2020), students shall not only learn to understand what they read and hear, write various texts, not only that learn to speak and understand a foreign language. The language activity of students contributes to the assimilation of language material. The more intensive language activity of students, the stronger and deeper its acquisition, therefore it is required to evolve and form it comprehensively.

Digital platforms in the education system were considered as a decisive tool in the formation of english language professional and communicative competence. Point is, case is that the fact that the platforms used in the educational process have a large scope and capabilities. It includes electronic textbooks, diaries and gadgets. According to V.E. Evdokimova and O.A. Kirillov (2022), digital educational platforms are an indispensable tool for organizing the learning process and predicting educational outcome, working correctly with the essential materials, viewing drawbacks and achievements, testing students' knowledge in the formation of professional English communicative competence. Thanks to the platforms in the learning process, the teacher has more more possibilities to enhance the quality of teaching. These include: timely amendments to the materials submitted to students; It is said that the arrangement of such sets in different formats: documents, pictures, presentations, video and audio recordings in one system assist to reduce paperwork.

The purpose of scientific work: the formation of foreign language communicative competence, taking into account the content of organic chemistry and the significance of the subject in integrated teaching; the application of digital educational platforms as an auxiliary apparatus for the formation of language communicative competence; drafting a set of listening, writing, reading, speaking tasks, aimed at increasing vocabulary and expand communication mastery during study a obedient in English; testing during the experiment.

MATERIALS AND METHODS

Barmenkova O. E. (1993) describes employ of video lessons for the development of communicative competence in his work. It is challenging to acquire English communicative competence without being in the country of the studied language. Therefore, considerable task of the teacher is to create real and imaginary communication situations in the foreign language class utilize various working methods. For this purpose, authentic materials, comprising videos are essential. In addition, the use of video **serve** to establish various aspects of mental activity of students, primarily attention and memory (Barmenkova, O.I, 1993).

One of the main goals of teaching foreign languages is communicative competence, first used by M. N. Vyatutnev to express a person's aptitudes to communicate in work or study while satisfying their intellectual require. In addition, the proficiency and readiness to implement foreign language interpersonal and intercultural communication is understood. Initially, this term was used in the methodology of teaching foreign languages, and then was adopted by representatives of other spheres of science (Vyatyutnev, M.N., 1977).

Workers in the field of education, who often face difficulties in education, have both communicative. This is due to the fact that most students have a low level of development of knowledge and skills in oral communication in terms of language competence. The most frequently considered issues include:- the inability to clearly systematize and compose a sentence of thought in the educational process;-the inability to explain their knowledge in the classroom to a colleague during communication, the lack of self-esteem formed in the context of this subject; - the inability to express their thoughts on paper; -lack of assimilation of lecture material due to the inability to understand what the teacher said during the lecture, decreased interest in the lesson, etc. Therefore, it is necessary to define and develop a system of organizational and pedagogical conditions that allow gradually developing and controlling the communicative qualities of our students throughout the educational process, forming their personal communicative experience and stimulating its further development (Jablin, F.M.and Sias, P.M., 2001).

Kanal and Swain (1980) have proposed a model of communicative competence that is widely accepted amid researchers. This mature in the field of communicative competence proceed to this day. Kanal and Swain believe in the importance of sociolinguistic work, which they emphasize in their model of communicative competence. Their model centers on the cooperation between- grammatical competence and sociolinguistic competence and they come to the conclusion that learning another language without the use of grammar affects language competence. Moreover, according to the Kanal and Swain a Canadian can acquire an adequate level of sociolinguistic competence only by flourish English language competence. However, without a minimum level of English grammar, effective communication is unlikely.

The culture of interaction in language communication and communicative competence is a pedagogical phenomenon based on a system of humanistic values and feelings. It is associated with concepts such as communicative competence, communication skills, etc. If we take the concept of relationship culture with a broad definition in the communicative competence, then this is the activity of an inner spiritual and moral personality in building communication, seeing and evaluating its position in interpersonal relations, full mastery of a normative set of verbal and nonverbal skills. Thus, cultures in communicative competence are linguistic and mutual communication, a set of elements of demand and motivation – as well as personalized, reflexive, depicted as practically effective elements (Lapinski & Orbe 2007; Spitzberg 2000).

Most researchers focus on the concept of "communicative competence" (the concept of communicative competence) of the American linguist D. Himes in the formation of professional English communicative competence. It has something to do with the fact that, according to D. Himes, the essence of communicative competence is an internal understanding of the situational relevance of the language. In the formation of English communicative competence associated with palmy work in a specific foreign language situation, D. Himes refers grammatical, sociolinguistic, discursive and strategic components of competence to communicative competence, as shown in **Table 1** (Hymes, D, 1972).

Table 1: Components of Communicative Competence

№	Grammar competence	Sociolinguistic competence	Strategic competence	Discursive competence
1	this competence includes knowledge of lexical items, rules of morphology, syntax, grammar and phonology. This knowledge is similar to the linguistic competence of D. Haims and is considered as a part of communicative competence, because they are based on the accurate identification and expression of the language basic system and the literal meaning of the statement.	this component of communicative competence consists of socio-cultural rules of language use. This knowledge is essential for interpreting and producing statements in social contexts. Knowledge of social rules is necessary to make and understand statements appropriate to the context in which the language is used.	this component consists of verbal and non-verbal communication strategies that can be used for the communication failures compensation. These communication disorders may arise from insufficient linguistic or sociolinguistic competence.	component that represents the ability to combine language structures and language functions into a coherent text.

In our country, in language education, the use of communicatively oriented methods and forms that contribute to the formation of a multicultural and multilingual personality capable of intercultural communication, a dialogue of cultures, and the constant improvement of a foreign language in new ways was not used. Frequently, students with a sufficiently high level of foreign language proficiency, unfortunately, are not always ready or able to use this knowledge in practice, that is, in oral communication. At the moment, the components of the English professional communicative competence are found in the works of many foreign researchers, and in the course of studying such components, the components of the English communicative competence of chemistry students were identified **Figure 1.**
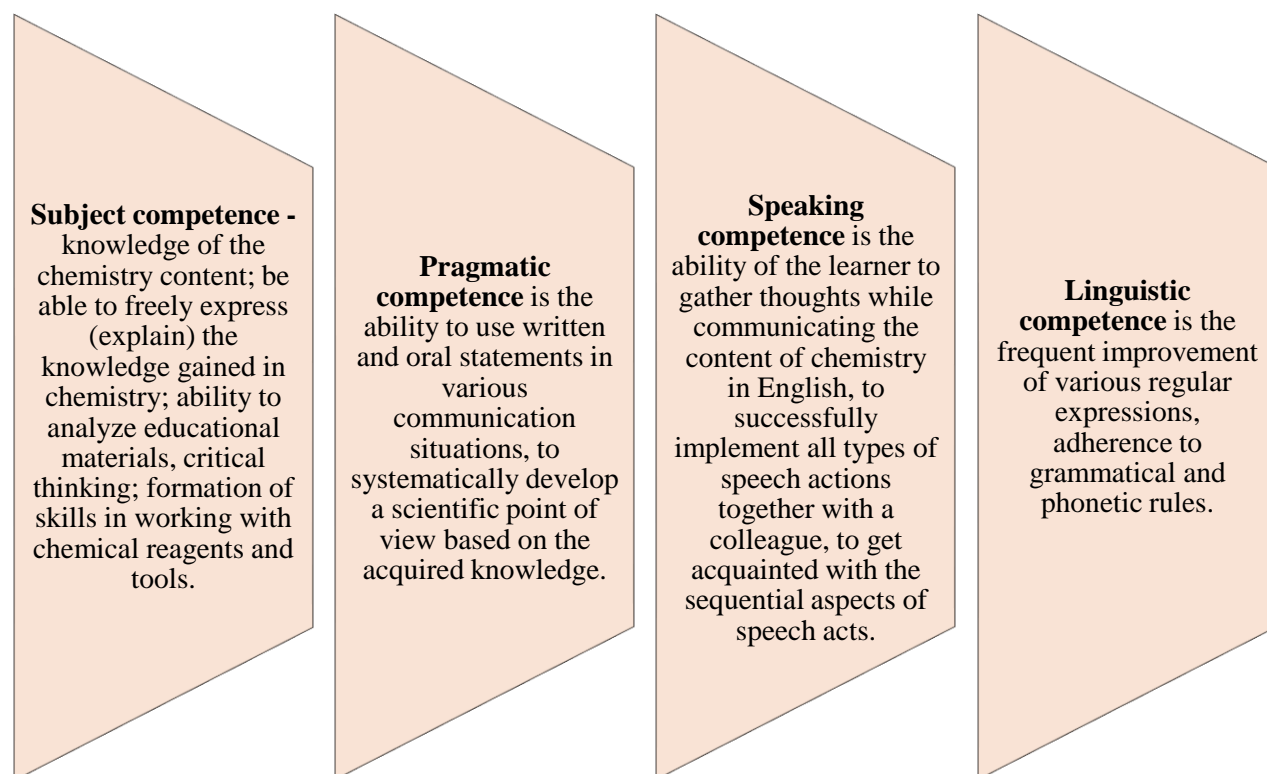
Subject competence - knowledge of the chemistry content; be able to freely express (explain) the knowledge gained in chemistry; ability to analyze educational materials, critical thinking; formation of skills in working with chemical reagents and tools.

Pragmatic competence is the ability to use written and oral statements in various communication situations, to systematically develop a scientific point of view based on the acquired knowledge.

Speaking competence is the ability of the learner to gather thoughts while communicating the content of chemistry in English, to successfully implement all types of speech actions together with a colleague, to get acquainted with the sequential aspects of speech acts.

Linguistic competence is the frequent improvement of various regular expressions, adherence to grammatical and phonetic rules.

Figure 1: Components of English Communicative Competence

The education system is always an evolving process. In the development - of the education system, it is equipped with modern technologies and supplemented with methods. At this stage, the role of digital education is essential. In the digital education system, the lack of paper work, the availability of knowledge, employ the platform to engage the learner, use the task in a compact form, and perform several tasks in a short time make the work of teachers easier.

Digital educational platforms: /www.liveworksheets.com, https://quizlet.com/ru, https://www.triventy.com/, https://www.socrative.com/, https://www.flippity.net/, https://www.classtime.com/ru/, https://learningapps.org/, https://ru.padlet.com/, https://www.zipgrade.com, wordwall.net›ru/, tarsiamaker.co.uk and others.

Wordwall is a universal educational resource that solves one of the topmost tasks of the educational process - increasing student motivation! With this resource, you can organize differentiated and individualized learning, taking into account the capabilities of each child, advantage of different types of exercises, for example, embodied or interactive.

You can work in two directions on the Wordwall platform. In their midst: exploit print and interactive whiteboard.

Features of the Wordwall platform:

-Interactive tasks can be performed using any device with a web interface, on a tablet, computer, phone, as well as on an interactive whiteboard. The assignment can be opened in the classroom for the entire class, or by the students themselves on their devices.

-Print jobs can be downloaded or printed in PDF format. They can be used interactively or as support material for self-paced learning activities.

Using the Tarsiamaker platform, you can assemble stems in several cycles, corners from several parts. When completing the task, by placing the answer under the question, a circle, triangle, quadrilateral or pentagon shape will appear. After compiling the questions with the succour of the Internet, you can print them on different colored paper and increase the interest of students (The Teacher Experience, 2020).

Liveworksheets is one of the modern education platforms. Allows to perform tasks with a traditional sheet on the platform or print them as doc, pdf, jpg. With the help of the platform, students complete the task, check answers in time and receive an assessment It is also possible to redo the task and work on the error.

Through these considered platforms, a set of tasks aimed at the formation of professional communicative competence in English on the discipline "Organic chemistry" was compiled.

The platforms used in training were selected based on the specifics of the tasks. In order to increase communicative competence, tasks related to speaking, writing, listening and reading were prepared for the comprehensive development of the English language. This is because for meaningful communication, whether in the classroom or at home, you first learn to listen, then speak appropriately, and then learn to read and write.

During the experiment, a set of speaking tasks was carried out using the tarsiamaker platform. For example: Organic Chemistry titles and questions are given in English. In order to increase students' vocabulary, it is requisite to match the questions with their answers. Through this, students pay attention to the pronunciation of organic names while working on their English translation **Figure 2.** In addition, tasks prepared for the purpose of forming speaking skills can be offered on the basis of this platform.
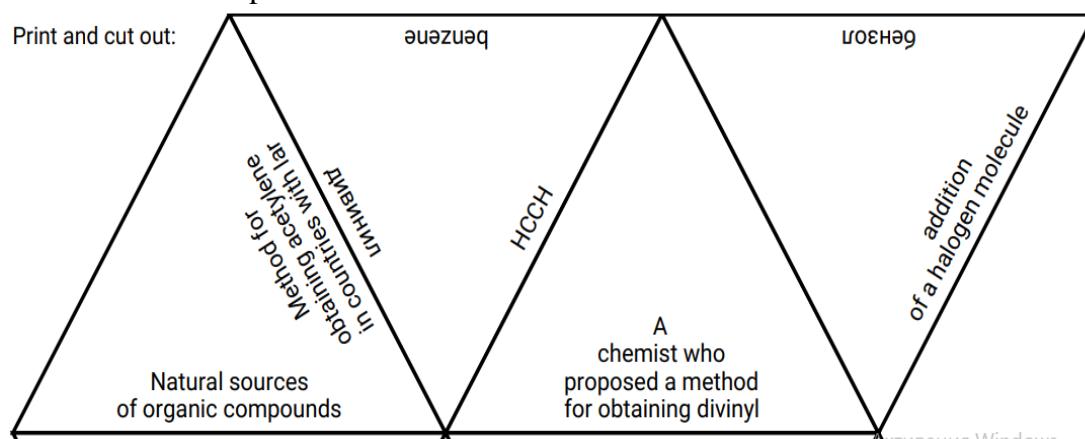

Figure 2: Task on the Tarsiamaker.co.uk platform

An anagram task on the wordwall.net›ru platform was implemented to develop the writing skills. As can be seen from the figure 3, the task focuses on the correct "writing" and "pronunciation" of 20 words, using time efficiently. It gives the result with a score by following the correct spelling **Figure 3.**
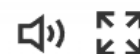
Figure 3: Completing an anagram task on the wordwall.net platform ›ru

https://wordwall.net/ru/resource/54052176/organic-chemistry

Completing the tasks shown above on the wordwall.net›ru and Tarsiamaker.co.uk platforms was easy. The next stage is focused on the transition from simple to complex tasks. Accordingly, after writing the equations of organic chemistry reactions, a comparison is carried out through the Liveworksheets platform, and as a result, correctly completed answers are displayed. The main goal of the task is to master the content of the inhabitant and the ability to correctly name and in **Figure 4** explain chemical reactions and concepts in English.
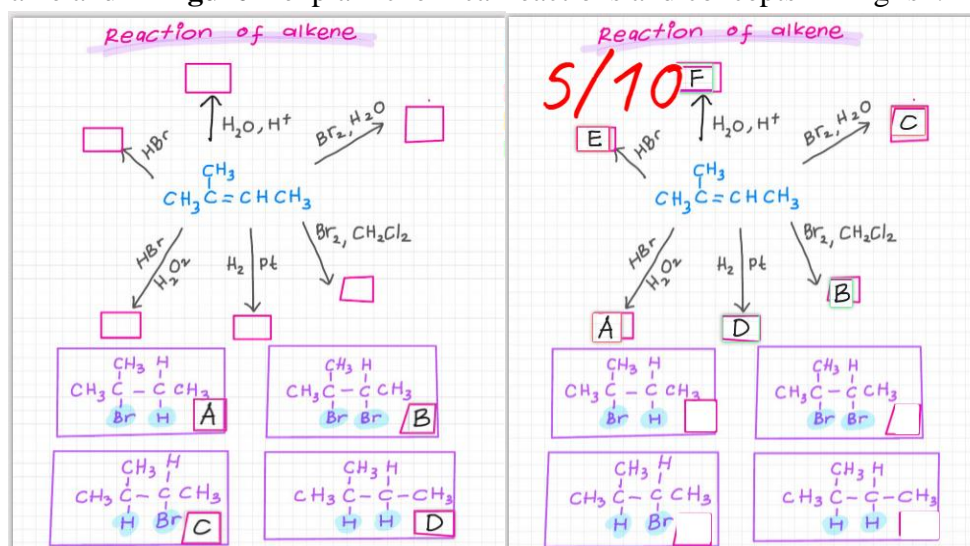
Figure 4: Alkene Reactions (liveworksheets.com)

While basic knowledge in the field of organic chemistry is the correct writing of reaction equations, the formation of language competence is based on communication. Through this, activities such as conducting the learning process, explaining the lesson, and providing feedback occur. In the next stage, listening tasks are performed to form a language competence. The video explanation of the "structure of organic molecules" is provided in English through the khanacademy.org platform in **figure 5.**

Figure 5: Work with video on the khanacademy.org platform

https://www.khanacademy.org/science/organic-chemistry/bond-line-structures-alkanes-cycloalkanes/naming-alkanes/v/representing-structures-of-organic-molecules

In order to improve -cultivate the "listening" skills of students, a conversation is conducted in English in the context of video content by answering prepared questions. Students should be able to briefly and accurately express their thoughts, clarify statements, discuss, answer interlocutor's questions. Thus, not only the listening level increases, but also speech abilities develop.

As shown in **Figure 6,** when performing a task aimed at the reading development-expansion, a definition of organic compounds in English is given. Each student reads the compounds definition received on the platform and pronounces the given information correctly or incorrectly according to their understanding. The correctness or fallacy of this definition will be determined by colleagues.
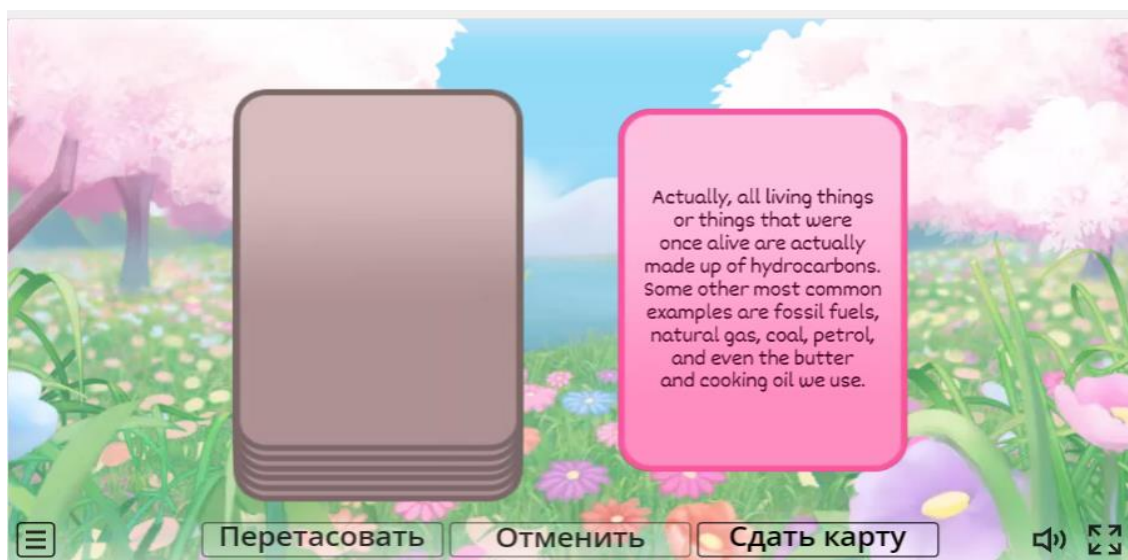
Figure 6: Working With Text on The Wordwall.net›ru Platform

Link to the task on the platform wordwall.net›en: organic chemistry - Случайные карты (wordwall.net)

EXPERIMENTAL WORK

2nd year students of the South Kazakhstan State Pedagogical University Faculty of Natural Sciences, Department of Chemistry, 6B01507 - "Chemistry-Biology Teacher Training" educational program were taken for the experimental study as a place for teaching the subject of organic chemistry in English. There are 30 students in the group. All students participating in the experiment will have the same material, technical and methodological support.

The following criteria are recommended for teaching organic chemistry in English through digital educational platforms.

- ✓ Determination of the level of student readiness to conduct the educational process;
- ✓ Effective use of digital resources in the process of organic chemistry lesson;
- ✓ Correctly compose and write down the tasks;
- ✓ Correct translation of organic chemistry terms into English;
- ✓ Work effectively in a team, sharing the thoughts of team members;
- ✓ Monitoring the effectiveness of the training program;

During the experiment, the skills that should be learned as a result of using a set of exercises on the discipline "Organic Chemistry" include:

- mastering the English language, initiating and communicating in that language;

- asking and answering questions

- conduct a conversation in English according to the content, express one's thoughts briefly and accurately;

- clarification of the interlocutor's position and statements;

- listen, hear and understand what the interlocutor wants to say;

- providing feedback, conveying to the partner what he heard and understood;

- balance the emotional tension in conversation, discussion;

- - interpretation with non-verbal signals (point of view, facial expressions, gestures, postures, mind).

According to the Quase experiment, a pre-test and a post-test were conducted to determine the development level of the subject content and foreign language communicative competence of the group. The main criteria for passing the test have been determined. The criteria include: speaking skills, reading skills, listening skills, writing skills and preservation of subject content. According to all the criteria defined above, the Evaluation System considered as 1-30% - low, 31-70% - average, and 71-100% - high.

According to the results of Ppretest, as can be seen from the **Figure 7**, the results can be rated as average.
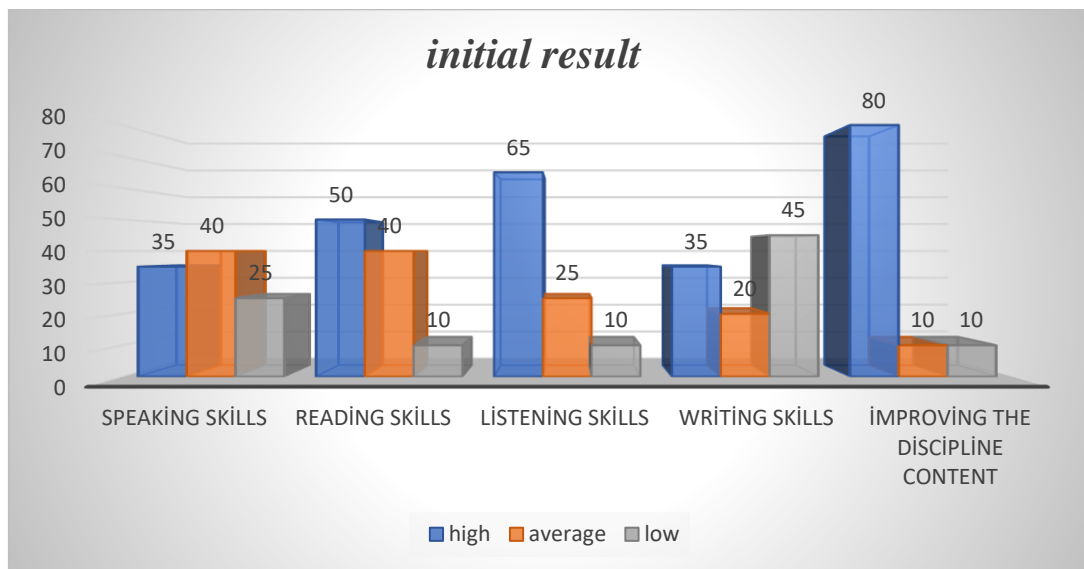

Figure 7: Primary outcome of learners in an experimental study

The further research process will be carried out in the 4th semester according to the indicator of the result of this test. Having identified the obstacles encountered during the test, the problem arose of considering ways to develop students' language skills. In solving the problem that has arisen - as a result of the development of technologies that are widely used in modern education, the platforms described above were obtained. It can be notice that the effectiveness of the platforms developed for the education system is growing day by day.

In the experimental study, the skills acquired as a result of exercises performed by students took place in the process of communication, conducted a conversation within the framework of the topic, briefly and accurately expressed their thoughts, clarified statements.

A posttest was taken and the results were given in the conclusion of the study. From **figure 8,** it can be observed that there was a development process compared to the initial result. In the

initial result, speaking was 35%, and according to the final result, 40% was added and it was raised to a higher level. In addition, the development of other criteria, foreign language communicative competence and the improvement of subject content had a clear priority in the final result.
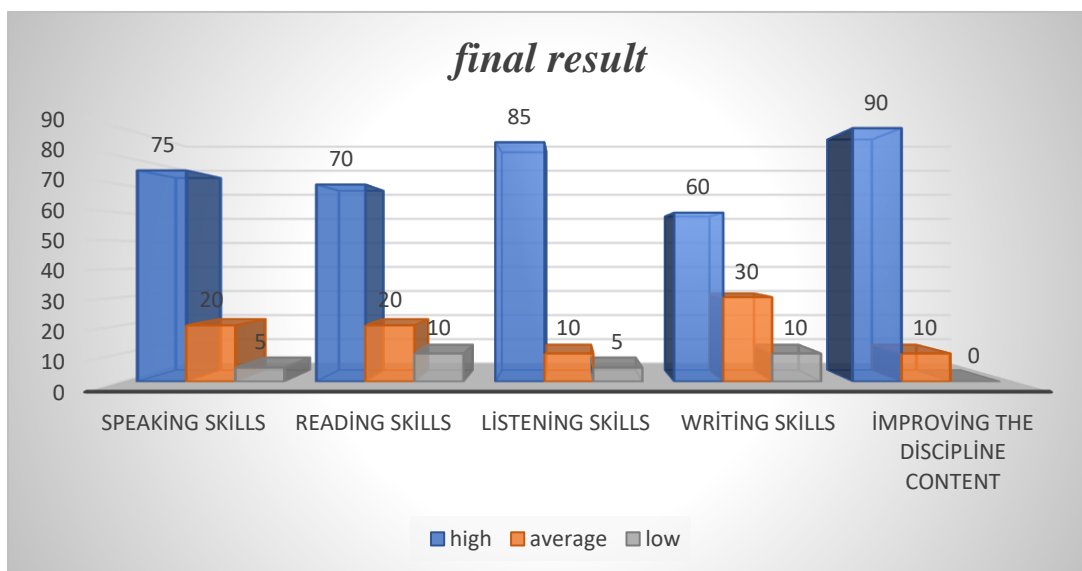

Figure 8: The Final Result of the Students in The Experimental Study

Thus, the effectiveness of digital platforms in the education system and the availability of opportunities for use arouses students' interest and opens the way for the formation of knowledge skills in improving the content of organic chemistry and English-language communicative competence.

CONCLUSION

One of the actual problems in the education system is the development of the future generation as an intellectual person and the acquisition of multilingual knowledge. The formation of English communicative competence is reflected in the expansion of students' knowledge, enrichment of the content aspect of communication in a foreign language, the process of personal development, self-education and improvement, increasing their learning motivation. As a result of the development and improvement of the educational process, methods and technologies are created in new directions in accordance with modern requirements. This gives an opportunity to use a competency-based form of training and modern methods of organization. In this regard, we will focus on experimental research work:

The place of study of the experiment was the 2nd year students of the Natural Sciences Faculty at the South Kazakhstan State Pedagogical University, the Department of Chemistry, the educational program 6B01507–"Training of a chemistry-biology teacher". The expected skills

related to improving the English language communicative skills in teaching organic chemistry in the 3rd semester of the academic year were average level. Based on the average level, platforms were used in the 4th semester in the educational process as an auxiliary tool for improving knowledge of organic chemistry and communicative competence. During the experimental study, exercises on the discipline "Organic Chemistry" gave a positive result, the expected skills were formed. During the practice, students were able to create an environment for effective communication between students by asking and answering questions in English. Thus, the experimental research work has successfully implemented tasks in the platform in teaching organic chemistry.

In conclusion, experimental studies have shown the effectiveness of digital technologies in the formation of the English language communicative competence in content-language integrated learning.

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