## Journal of History Culture and Art Research (ISSN: 2147-0626)

Tarih Kültür ve Sanat Araştırmaları Dergisi Vol. 9, No. 3, September 2020

DOI: 10.7596/taksad.v9i3.2719

**Citation:** Maksymenko, N., Bei, I., Khimchuk, L., & Vovchok, Y (2020). Formation of Communicative Culture of Students by Means of Project Teaching in Higher Educational Establishments. *Journal of History Culture and Art Research*, *9*(3), 267-276. doi:http://dx.doi.org/10.7596/taksad.v9i3.2719

# Formation of Communicative Culture of Students by Means of Project Teaching in Higher Educational Establishments

Nataliia Maksymenko<sup>1</sup>, Iryna Bei<sup>2</sup>, Liliana Khimchuk<sup>3</sup>, Yaroslav Vovchok<sup>4</sup>

## **Abstract**

The article is devoted to the problem of forming the communicative culture of future teachers in the process of project teaching in higher educational establishments. Methodological approaches to the definition of the concept of "communicative culture" are analyzed, its qualitative characteristics are determined and examples of discussions in the scientific environment on the characteristics of this phenomenon are given. The authors claim that the component of communicative culture is communicative competence, which in the educational process of higher education largely determines the quality of training of future teachers for future professional activities. The article gives the hypothesis that project activities may be one of the effective means of forming both communicative culture and communicative competence, which at the present stage of training graduate students is considered the most effective and rational in domestic and foreign pedagogy. In order to test the hypothesis, the results of the diagnostic stage of the experimental study conducted during the training of future foreign language teachers in higher educational establishments are demonstrated. The analysis of the results of the experiment allowed us to conclude that project teaching is defined by both students and teachers as one of the effective means of forming the communicative culture of future graduate students. Its significance is determined by the fact that it allows students to thoroughly analyze scientific information, use a creative approach to learning materials, promote the formation of skills to listen to others, respect alternative opinions, model and solve cognitive, life and social situations.

**Keywords:** Communicative Culture, Project Teaching, Communicative Competence, Diagnostics, Future Teachers, Higher Educational Establishments.

<sup>&</sup>lt;sup>1</sup> Associate Professor of the Department of Professional Methods and Technologies of Primary Education at Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine. ORCID: 0000-0002-6041-6783 E-mail: natalijamaksimenko@gmail.com

<sup>&</sup>lt;sup>2</sup> Postgraduate Student of the Department of Theory and Methods of Preschool and Special Education at Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine. ORCID: 0000-0002-9308-3305 E-mail: irinabei@gmail.com

<sup>&</sup>lt;sup>3</sup> Associate Professor of the Department of Professional Methods and Technologies of Primary Education at Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine. ORCID: 0000-0002-9243-3131 E-mail: khimchuk.liliana@gmail.com

<sup>&</sup>lt;sup>4</sup> Associate Professor of the Foreign Languages Department at Vasyl Stefanyk National Precarpathian University, Ivano-Frankivsk, Ukraine. ORCID: 0000-0001-8542-3026. Corresponding author: vovyaroslav@gmail.com

### Introduction

At the present stage of development of pedagogical thought in the scientific environment, there is increased attention to the problems of the development of individual potential in the participants of educational process. In this regard, society sets certain requirements for the training of future teachers in higher educational institutions. Such specialists must have a set of skills and abilities that are a priority for their social and professional self-determination. These may include: flexibility of thinking, professional mobility, search activity, communication culture, readiness for self-education, and self-development.

Among these qualities, the "communicative culture" of future teachers is one of the main among scientists because its formation largely depends on how in their professional activity pedagogists will be able to teach, regulate, encourage, or limit the behavior of subjects of the educational process. However, the study of the work of higher educational institutions, the analysis of philosophical, psychological, pedagogical, and linguistic literature shows that there are some difficulties in solving this problem. Thus, scientific research has not yet developed a clear interpretation of the concept of "communicative culture". In addition, the authors differently define its essential characteristics, ways of implementation in the educational process in higher educational institutions; outline the reasons for barriers to its formation in the student environment. Among the issues that are not fully developed are the means of forming this phenomenon in the process of preparing future teachers for professional activities.

In our opinion, one of the effective means of forming students' communicative culture can be project activities of participants in the educational process, which at the present stage of training for secondary education is considered the most effective and rational in both domestic and foreign pedagogy. Hence, the uncertainty of this problem in psychological and pedagogical theory, its lack of development in the work of higher educational establishments has led to the choice of research topic.

## **Literature Review**

The problem of forming the communicative culture of future teachers has always been the subject of research of many domestic and foreign scientists. It is presented in the scientific achievements of such scientists as A. Anosov, L. Varga, I. Voloshanska, S. Honcharenko, A. Dobrovolska, T. Komar, S. Musatov, O. Ovcharuk, L. Rudenko, M. Chepil, etc., who regard it as a component of the professional culture of a teacher. These scholars consider the communicative culture as a systemic component of the educational process, as part of the ethics of the teacher, and as an integration of two components that interact and, consequently, enrich each other.

The analysis of the definition of "communicative culture" showed that the main component in the analyzed phrase is the concept of "culture". It is considered by scientists from different perspectives and is interpreted as: a set of values, and as a level of development of society, and as perfection, education, upbringing, and so on.

The definition by S. Goncharenko appeals to us, who understands culture as the sphere of "the spiritual life of society, which covers first of all the system of upbringing, education, spiritual creativity (especially artistic)." It also includes "institutions and organizations that ensure the functioning of this system: schools, universities, clubs, museums, theaters, creative unions, societies, etc." At the same time, according to the teacher, culture should be understood as "the level of education, upbringing of people, as well as the level of mastery of a field of knowledge or activity" (Goncharenko, 1997).

Regarding the second component of this definition - "communicative", in psychological and pedagogical aspects, it means the need of the individual who can perform several functions - biological,

social, personal, and personality-reflexive. At the same time, according to S. Musatov, "communicativeness" should show the ability to include universal problems and identify itself with humanity (Musatov, 2012).

Due to the ambiguity of the interpretation of the components of this phenomenon, the very definition of "communicative culture" is considered differently. L. Rudenko believes that this culture is a means to create the inner world of the individual, its richness of content, and is a reflection of human orientation to culture. To culturological elements, he includes: emotional culture (or culture of feelings), culture of thinking, and culture of speech (Rudenko, 2012).

The opinion expressed by L. Varga is important in this context, who considers communicative culture as a complex dynamic personal formation that corresponds to the socially determined level of personality development and reflects its readiness for communicative activity (Varga, 2015).

A. Anosova interprets communicative culture as certain achievements in self-education, intrinsic values of the individual, communicative knowledge, emotions, communication qualities of the individual, providing interaction with the outside world, and focusing on generally accepted norms (Anosova, 2013).

The analysis of the scientific literature on the problem gave us grounds to consider communicative culture in various ways, taking into account these psychological and pedagogical characteristics: as a complex dynamic formation that reflects the readiness for communicative activities and as certain achievements of the individual to interact with the outside world.

## Methodology

The research methodology consists of the main approaches to the process of formation of communicative culture by means of project teaching in higher educational institutions. We define the activity approach as the main one, the importance of which is manifested in the fact that it is based on the use of a set of material and spiritual resources of the participants of the educational process. It is characterized by the integrity and interconnection of the components of the process of training future teachers for project activities. In addition, we apply a culturological approach, the implementation of which is based on the introduction of the principle of cultural conformity. This approach involves the combination and interaction of special, cultural, and psychological-pedagogical factors that determine the patterns of development of the student's personality. The next approach is axiological. Its implementation allows to determine the value principles of project activities: moral, aesthetic, cognitive. The main feature of the approach is the focus on self-development and self-realization of the student's personality. The personally oriented approach is important in the aspect of research. It contributes to a conflict-free and secure environment based on the principles of parity that takes into account the individual characteristics of future teachers (Komar, 2013).

The main methods used during the experimental study were: analysis of educational and methodological documentation, which determines the main directions of work of higher education institutions; testing and surveying of students - future foreign language teachers; conversations with foreign language teachers both at the Faculty of Pedagogy and at the Faculty of Foreign Languages. At the same time, students were offered to perform analytical and constructive tasks in order to identify the level of formation of communicative competence. The implementation of these methods allowed us to determine the level of readiness of future foreign language teachers for project activities in educational institutions.

## Purpose of the Present Study

In the present study, we aim to develop and demonstrate the ways of formation of the communicative culture of students in the process of project training in higher educational institutions of Ukraine.

## Discussion

Scientists argue that the functioning of this phenomenon is impossible without the formation of such an important feature in the individual as communicative competence, which is a leading factor in effective communication and determines the success and competitiveness of the individual in a particular activity.

Different approaches to the definition of this concept indicate its complexity and lack of research. Some scientists view communicative competence as an integrated learning goal, others as a component of linguistic or foreign language competence. The third group of scientists argues that communicative competence is a person's ability to communicate as a complex multicomponent activity, the nature of which is influenced by various factors.

Let's consider the process of formation of this competence as a component of communicative culture in higher educational establishments on the example of its formation in future teachers of foreign languages. According to O. Ovcharuk's scientific concept, the communicative competence of future teachers involves the presence of two main groups of skills:

- personal- communicative (ability to establish contact with interlocutors, to keep a conversation going, build it in different styles and genres, to interest students in mastering the subject, etc.);
- professional-communicative (involves knowledge of didactic and linguistic terminology; implementation of educational communication through language; the ability to produce educational text, edit their own and other people's speech, detect and correct errors in other people's speech, etc.) (Ovcharuk, 2004).

Given the above, there is a need to consider the communicative competence of future foreign language teachers as a multifunctional system that is formed in the process of their professional training in higher educational institutions, and is a means of pedagogical activity in different conditions.

It is important to take into account the fact that the subject "foreign language" has a unique feature, which is associated with the communication process: communication is not only a means but also a goal of learning. The analysis of the problem of communicative competence formation in future teachers as a component of communicative culture has allowed us to make assumptions that innovative teaching methods can serve as an effective means of its development, among which project training takes a prominent place.

In the professional pedagogical literature, this concept is identified with the definitions of "educational project", "project method", "design methods" and is interpreted differently by scientists. Thus, T. Komar argues that the "project method" should be considered in broad and narrow meanings: first, as a pedagogical phenomenon, which is characterized by its own history of formation, the development of the peculiarities of its functioning; secondly, as a pedagogical category that has certain characteristics that specify the content, purpose and features of application (Komar, 2013).

Instead, M. Chepil interprets the project method as a didactic tool aimed at activating the cognitive activity of students, the formation of their creative thinking, and the development of their

personal traits. The scientist believes that this method is defined by such concepts as independence, activity, and efficiency (Chepil, 2012).

In the work with students, the project method can be used as an individual or group work for different periods of time, as well as with the use of modern means of information technology including computer and telecommunications.

One of the conditions for these tasks is compliance with the principle of cooperation, which provides equal relations between the teacher and students and is implemented through ways of organizing the interaction of participants in the educational process in higher educational establishments. The organization of cooperation involves the use of various means: joint projection of the purpose of the activity; creating a situation of free choice; use of educational dialogue and role-play; participation in the analysis of lesson results; selection of educational material, including didactic, and projects (educational projects). The ways to implement this interaction have already been the subject of our study, which is presented in the publication (Bei, 2018).

Scientists and practitioners identify the following basic requirements for the use of the project method:

- 1. The presence of a significant problem that requires integrated knowledge, research to solve it.
  - 2. Practical, theoretical, cognitive significance of the expected results.
  - 3. Independent (individual, pair, group) activity.
  - 4. Setting the ultimate goals of joint and individual projects.
  - 5. Defining basic knowledge in various fields required to work on the project.
  - 6. Structuring the content of the project (indicating stage results).
- 7. Use of research methods: definition of the problem, research tasks arising from the hypothesis of their solution, discussion of research methods, registration of final results, analysis of data, summarizing, adjustment, conclusions (use of "brainstorming" method in joint research, "round table", statistical methods, creative reports, review, etc.).
- 8. The results of completed projects must be material, i.e designed in a certain way (video, album, abstract, computer newspaper, almanac, Web-page, etc.).

In this context, A. Dobrovolska's opinion is important to us, who says that, in comparison with other methods, project training has a number of advantages, namely:

- absence of ready-to-go and unambiguous solutions;
- mastering not only knowledge, but also practical skills to apply this knowledge in order to solve problem (project) tasks;
  - development of future specialists' skills of self-education and self-control;
  - increase in information culture;
  - development of skills to search, process, present information;
- opportunity to share the gained experience of solving the problem (project) task with other subjects of the educational process;
- interdisciplinary integration, which leads to an understanding of the need for interdisciplinary links in the learning process (Dobrovolska, 2018).

I. Volshanska states that project tasks promote individualization in learning a foreign language, improve skills of interpersonal communication culture and cooperation, allow students to independently organize and control the learning process, freely express their thoughts, feelings, take responsibility for work done and achievements in education (Voloshanska, 2018).

### **Results**

The analysis of the theoretical part of the study allowed us to develop a program of experimental work, the first stage of which was to determine the real state of the problem in the practice of higher educational establishments. It was determined in the process of conducting a diagnostic experiment on the basis of the Faculty of Pedagogy and Foreign Languages Department of Vasyl Stefanyk Precarpathian National University. The experiment involved 150 students and 15 foreign language teachers.

The objectives of this stage of the study were:

- 1. Research the level of formation of communicative competence of students future teachers of foreign languages in the educational process of higher educational institutions.
- 2. Analyze the main difficulties in the formation of communicative competence in the process of teaching such disciplines as "Practical foreign language course", "Methods of teaching a foreign language in primary school" and "Methods of teaching a foreign language in secondary school", which are experienced by students and teachers of these faculties.
- 3. Identify ways to increase the level of communicative competence of senior students in the process of teaching a practical foreign language course.

In order to perform certain tasks the following steps were carried out:

- analysis of educational and methodical documentation (syllabus of the practical course of a foreign language, syllabus of methods of teaching a foreign language in primary school and educational programs of foreign language teachers of the Pedagogical Faculty);
  - testing and questionnaires of students future foreign language teachers;
- conversations with foreign language teachers both at the Faculty of Pedagogy and Foreign Languages Department.

In addition, students were asked to perform analytical and constructive tasks in order to identify the level of formation of communicative competence.

The analysis of the programs of the practical foreign language course was carried out in order to determine how they:

- 1. Deal with significant problems that require integrated knowledge to solve them.
- 2. Provide opportunities for independent project activities of students (individual, pair, group).
- 3. Allow to structure the content of the project (indicating the stage results).
- 4. Can be perspective to design the results of completed projects (a video, album, abstract, computer newspaper, almanac, Web-page, etc.).

During the analysis, the attention was paid to the place of the problem of communicative competence formation of students in the given Programs, what the goals and objectives of this work are, what opportunities of educational material are embedded in them to carry out work on the formation of competence. The study showed that the Program of the Practical English Language Course states that this course provides a comprehensive approach to the implementation of

communicative, educational and developmental goals in the process of practical mastery of a foreign language, and the ultimate goal of this course is to provide sufficient fluency, normatively correct and functionally adequate mastery of all types of language activity in a foreign language (listening, speaking, reading, writing).

It was important in the aspect of our research to determine the basic skills and abilities that future foreign language teachers should master upon the completion of the bachelor's degree.

The program of the Practical English Language Course stated that future teachers have to:

- have a monologue and dialogic speech in informal and formal communication situations;
- systematically read the original fiction and socio-political literature, as well as texts on household topics of different functional aspects;
- be efficient at writing skills, adhere to spelling and punctuation rules, including in written translations.

According to our assumption, the following conversational topics will contribute to the formation of these skills:

- Career and personality development. Career in the 21st century. Teaching practice and difficulties of a teaching career.
- Health is the greatest human asset. Smoking and youth. How to get rid of bad habits? Britain's and Ukraine's health care systems.
  - The Way Americans Communicate. America and Americans.
  - Britain and the British. British character and lifestyle.
  - Ukraine and Ukrainians. Ukrainian hospitality is an integral trait of Ukrainian character.
  - Art in a modern person's life. Contemporary entertainment.

Thus, the analysis showed that the Program of the Practical English Language Course provides sufficient opportunities for the communicative competence formation of future teachers, and the proposed conversational topics for communication can be used to improve certain competencies in the educational work of higher educational institutions. Similar work was done on the analysis of German and French language programs at the Faculty of Philology of the Precarpathian University.

The study of syllabi of the disciplines "Practical foreign language course", "Methods of teaching a foreign language in primary school" allowed us to identify educational material that can be used to implement in the educational process experimental teaching methods aimed at forming communicative competence of future foreign language teachers.

The next stage of our experimental work was to determine the level of students' motivation for future professional activities. This aspect was especially important because it is known that one of the pedagogical conditions for the formation of communicative competence of future teachers is the formation of positive motivation both to study and to work in schools in the future.

We conducted testing, the purpose of which was to establish the strength of motivation to achieve goals, success. The students were asked to answer the questions: are they satisfied with the level of their professional training and ability to self-realization and self-improvement; whether the level of their professional training meets the requirements of society; whether they are ready to overcome difficulties in organizing professional activities, whether they are satisfied with the knowledge gained during training on the introduction of innovative technologies, etc. The answers to

the questionnaire showed different attitudes of future graduate students to this problem, but it should be noted that a significant number of respondents (68%) did not show the expected high level of motivation.

An important stage of the experimental study was to determine the effectiveness of professional communicative competence formation of future foreign language teachers in the study of professional disciplines.

This work was based on the statement that the effectiveness of professional training of students for a particular activity depends on their interest in studying those subjects that provide preparation for this activity. Given this thesis, we considered it appropriate to find out the attitude of students to the disciplines they studied and to determine the degree of satisfaction with the acquired knowledge. In order to achieve this goal, future graduate students were asked to complete a specially- designed questionnaire. The analysis of the questionnaire results showed that the highest indicator was reached by the content component of professional communicative competence in future foreign language teachers in the process of studying professional disciplines. This means that the theoretical material is more accessible to students because they have demonstrated the ability to process educational literature: to highlight the main points in the text, to systematize, generalize, to find cause-and-effect relationships. Most students are properly acquainted with the theoretical aspects of professional disciplines, understand the essence of the concept of "communicative competence", clearly define ways to use different forms, methods and means of forming this phenomenon. The answers to the questionnaire showed that on average 70% of students expressed a desire to get more information about the introduction of innovative technologies in the educational process of both primary and secondary schools. At the same time, they expressed interest in such technologies as projecting, creating a situation of success, game learning technologies, etc. However, the students noted that they lack knowledge related to the linguistic and socio-cultural components of communicative competence. They admitted that they had problems with language and speech competence because they were not fully prepared for verbal interaction in certain non-standard situations and could not make the right decisions. This indicates an insufficient level of development of students' communicative competence.

In addition to this work with students, we also conducted a survey of foreign language teachers (the survey included 15 teachers). They were asked to answer the following questions: what methods of forming communication skills they use in class; whether they use interactive learning methods or use project activities. The results of the survey showed that 26% of teachers believe that the formation of communicative competence of students depends on systematic work in the classroom; 32.6% - claim that it is formed during the introduction of productive methods in the educational process; 41.4% - insist on the importance of both the first and second features, as well as constant persistent activity.

The survey made it possible to find out that the most appropriate means of developing communication skills, according to teachers, are project technologies - 54.4%; 25% of respondents believe that these skills can be formed by increasing the number of performed tasks, and only 20.6% of teachers point to the importance of visualization, technical means of learning in the formation of communication skills.

Thus, the analysis of the real state of the problem of communicative competence formation of future foreign language teachers in the educational process of higher educational institutions allowed us to conclude that the syllabi of these courses contain material that is significant in terms of research and creativity, need integrated knowledge to search for their solutions. In addition, they provide opportunities for independent (individual, pair, group) activities of students, as well as for joint or individual projects, allow structuring the content of the project (indicating the stage results). The analysis showed that the topics of the proposed sections provide an opportunity to use research

methods: problem definition, research objectives arising from the hypothesis of their solution, discussion of research methods, forecasting final results, analysis of data, summarizing, drawing conclusions.

The study showed that most students are properly acquainted with the theoretical aspects of professional disciplines, understand the essence of the concepts "communicative competence", "communicative culture", clearly define ways to use different forms, methods and means of forming these phenomena. The answers to the questionnaire showed that on average 70% of students expressed a desire to get more information about the introduction of innovative technologies in the educational process of both primary and secondary schools. At the same time, they expressed interest in such technologies as projecting, creating a situation of success, game learning technologies, etc.

During the survey of foreign language teachers, it was found out that, in their opinion, the process of preparing future foreign language teachers for professional activities needs correction and improvement, and methods of teaching these disciplines can be enriched with the latest innovative technologies, including projecting techniques, which will contribute to the formation of students' communicative competence.

### Conclusion

The study of the problem of future teachers' communicative culture formation and its component - communicative competence- by means of project activity allowed us to draw a conclusion about the importance of project teaching in the educational process of higher educational institutions. The study of the theoretical aspect of the problem showed that professional communicative competence is an applied area of pedagogy as a scientific field of knowledge about the regularities of teaching and education, and is a set of pedagogical norms and rules that determine the specifics of professional communicative behavior of future foreign language teachers.

Carrying out the diagnostic stage of the experiment in the practice of higher educational establishments allowed us to conclude that one of the effective means of forming a communicative culture is project technologies, the importance of which is pointed out by scientists, teachers, and students - future foreign language teachers (as the survey showed).

It was determined that project teaching is a pedagogical system that has a set of interconnected tools and processes necessary to create an organized and purposeful pedagogical influence on the formation of the student's personality. The project activity itself is today one of the most promising components of the educational process because it creates conditions for creative self-development and self-realization of students, forms all necessary life competencies, which were defined as basic in the XXI century by the European Council: multicultural, communicative, informational, political, social. Its significance for human activity is manifested in the ability to use research methods: to collect the necessary information, analyze it from different points of view, make hypotheses, draw conclusions.

Determining the real state of the problem in the practice of higher educational institutions allowed us to conclude that the level of communicative competence as a component of communicative culture of future foreign language teachers, which was identified during the diagnostic stage of the experiment, corresponds to "sufficient" and in some cases "average" or "low" levels of the proposed classification.

The main reason for this situation, in our opinion, is:

insufficient use of innovative learning technologies in practical foreign language classes;

■ absence of appropriate guidelines for the introduction of project technologies in the educational process of higher educational institutions.

In this regard, we suggested that the involvement of students in project work will contribute to the formation of such communication skills as: work in a team; share responsibility; analyze the results of their own activities; feel like a member of the team; form skills of analytical view of information.

Thus, we believe that project teaching in higher educational establishments provides an opportunity to thoroughly analyze educational information, apply a creative approach to learning, promote the formation of skills to listen to others, respect alternative opinions, model and solve cognitive, life and social situations.

The next stage of the study involves testing the hypothesis through the introduction of methods of forming the communicative culture of the future teacher in higher educational institutions. Accordingly, a number of activities are going to be planned to master the skills of students to build constructive relationships in the group, determine their place in it, avoid conflicts, resolve them, seek compromises, seek dialogue, find common solutions and develop project skills.

#### References

Anosova, A. (2013). Formation of communicative culture of high school students by means of telecommunication projects in out-of-school educational institutions. Theoretical and methodological problems of education of children and students, 17(1), 42-52.

Bei, I. (2018). Parity dialogue as a factor of subject-subject interaction in the process of communication between a teacher and a student of the Faculty of Foreign Languages. Educational space of Ukraine, 14, 135-141.

Chepil, M. (2012). Pedagogical technologies: a textbook. Kyiv.

Dobrovolska, A. (2018). Project method: formation of IT competence of future specialists. Physical and Mathematical Education, 1(15), 35-47.

Goncharenko, S. (1997). Ukrainian pedagogical dictionary. Kyiv.

Komar, T. (2013). Methodology of project activity: theoretical aspect. Collection of scientific works of the Khmelnytsky Institute of Social Technologies of the University "Ukraine", 2(8), 102-107.

Musatov, S. (2012). Communicative dimension in personality psychology. Psychology and Personality, 2, 18-33.

Ovcharuk, O. (2004). Competence approach in modern education: world experience and Ukrainian perspectives. Kyiv.

Rudenko, L. (2012). Structural components of communicative culture of hospitality industry specialists. Pedagogical Sciences, 3(56), 49-55.

Varga, L. (2015). Development of communicative culture of future teachers in the process of interactive learning. Bulletin of Cherkasy University. Series "Pedagogical Sciences", 32(365), 31-35.

Voloshanska, I. (2018). Contents and specificity of project method in studying foreign languages. Young Scientist, 3.1 (55.1), 19-22.