S. Burbekova

Candidate of Philological science, Chief Manager of Quality
Assurance Department
saule.burbekova@astanait.edu.kz, orcid.org/0000-0002-0624-6226
Astana IT University, Kazakhstan

FORMATION OF COMMUNICATIVE COMPETENCIES OF FUTURE IT SPECIALISTS

Abstract: The purpose of the study is aimed at performing a verification of the teaching conditions for effective communicative competence formation of the future IT professionals. Creating conditions of success, motivation enhancement, use of engaging group work, encouraging students' participation in project work are the key factors and conditions for effective communicative competence formation. Scientific literature analysis, «communicative competence» concept clarification; analysis of pedagogical conditions of IT students' communicative competence formation is discussed in details. Research methodology used is questionnaire, interview, quantitative and qualitative data analysis and processing of the results as well as analysis of class observation in AITU done within the IT students' communicative competencies research.

The national technological development strategy focuses both on the development of science-intensive technologies and technological cooperation and partnership. The need of society in IT specialists with a high personal and professional culture is determined by the need of a sufficient level of communicative competence to build professional relationships in workplace.

Keywords: communicative competencies, interaction, individual development, communication situations, interactive teaching methods.

Introduction

As modern market conditions are becoming more and more international technological chains connect more and more companies and countries of the world, requiring the expansion of communication competencies, cultural and teamwork skills, which ensures interaction in a team to solve professional problems, reasonably prove point of view, and choose a certain style of communication in various professional situations. A successful, competent, self-confident professional ready to communicate and independently make decisions, to be able to perceive all those changes that time brings is in high demand in modern IT sphere.

The formation of the communicative competence of future IT professionals requires new teaching methods based on their interaction, joint mastering of professional experience, discussion and development of solutions to professional problems. Innovative reformation of education in the IT sphere should be based on the application and development of advanced science-intensive technologies, engineering analysis, computer-aided design using modern visualization tools.

The ability of future IT professionals to communicate competently and effectively is a professional quality that ensures achieving success in professional field, solving professional

problems effectively, formulating their own judgments and giving arguments is the task of a modern university.

Related work

The number of researches has been done on the related topic in the works of domestic and foreign scientists. Scholars' research on the concept of «communicative competence» its professional features are analyzed in details. The term "communicative competence" was introduced into the scientific space by Gamperz & Hymes (1972) and considered as an ability that is formed in the process of interaction between the individual and the social environment. Spencer & Spencer (1993) are authors of a behavioural approach to the concept of "competence". Rickheit & Srohner (2008) discussed the practice of communicative competence improving. Diagnosis and development of communication competence was given a detailed analysis by Melnyk (2012). Besnier (2013) made a research on the language and communicative competence formation strategies. Koval, et al., (2018) observed communicative competences in enhancing regional competitiveness in the labor market, the essence and specifics of the public administration services and marketing system. Romanenko & Chaplay, (2016) discussed the professional communication in the global business context. Nikolayev (2003) describes different types of communicative competence such as sociocultural competence as the ability to act within this society; linguistic competence (speaking, listening, reading, writing skills); pragmatic competences to perceive, analyse, to build speech situations; discursive competence as the ability to control and structure speech according to the topic; functional competence as the ability to use all forms of speech utterances; interaction competence as the ability to social interaction offered in European Recommendations on Language Education in 2003. Keiner et al, (2014) in their research discussed the development of leadership skills, the great power of persuasion, self-confidence, responsibility, improvement of communicative skills, etc. The Association for Educational Communication and Technology (AECT) deals with curriculum development and the development of a systematic approach to learning and a wide range of educational technologies.

Problem

The issues of education in in modern conditions of IT field is due to the rapid development of scientific and technological progress, the formation of an innovative economy, the need for IT specialists, whose experience and competencies correspond to the time challenges. The student face with the challenge to be psychologically prepared for uncertainty, possible multiple transformations in the labor market, for the need to quickly master new competencies, constantly train and retrain.

Characterizing the use of interactive teaching methods in the process of forming students' communicative competence, it should mentioned that along with the positive aspects like independence, activity, student initiative, team work style, emphasis on activities and practice, opportunities for dialogue, interaction, eventfulness, creativity there are also negative sides (risks) in their application: emotional fatigue, a small amount of the studied material used for assimilation; time factor, the complexity of individual communication; shallow analysis of the studied problems by students.

Analysis of the results of IT students' communicative competence formation indicates that it is not sufficiently developed for future professional activity and individual development. They have a poor understanding of the communication culture, organizational and communication skills, experience difficulties in regulating their behavior, not fully strive to develop the qualities necessary for full-fledged communication (Bennett, et al., 2008) Students (especially junior students) feel constrained in the course of interpersonal interaction, public speaking, rarely

enter into a dialogue, as a rule, interaction with classmates is of a formulaic, formal nature "at the everyday level". Students with a low level of formation of communicative competence have weakly expressed motives and value orientations in professional communication. They find it difficult to master the tactics of communication in various communication situations. They are characterized by a low level of self-esteem ability. However, teachers' awareness of interactive teaching methods allows them to "mitigate" or avoid them, "enhancing" the educational process by combining them with other teaching methods.

At the same time, it turned out that interactive teaching methods (business and role-playing games, discussions, trainings, case methods, situation analysis, etc.) are still insufficiently used in the classroom (Aesaert, et. al., (2014). All this confirms the need to develop a methodology of communicative competence formation based on interactive teaching methods that ensure the success and self-development of future IT professionals.

Research methodology

Questionnaire, interview, quantitative and qualitative data analysis and analysis of class observation in AITU were done within the communicative competencies research of future IT professionals. Analysis of teaching strategies and effectiveness of teaching methods at the "English Language" program was done on the results of questionnaire and interview of program coordinator. The aim and objectives of the survey were to identify and define methods and strategies of teaching language; find the ratio of the methods and principles used, their effectiveness within the taught courses; analysis of the situation, identification of problems and ways to solve them.

The questionnaire consisted of 10 questions by categories: training program and teaching experience; methods and principles of teaching and learning (traditional, innovative); students' motivation and research component within the language course. The rate of participation was 90% of the total number of English program teaching staff with teaching experience

> 2 years – 2 people
> 5 years – 8 people
> 10 years – 4 people
> 20 years old – 4 people

The results on the traditional and innovative methods used are presented in Table 1.

Table 1. The results on the traditional and innovative methods

#	Traditional teaching methods and principles		Innovative teaching methods and principles	
1	Practical training	82.4%	Project learning (research project)	94.1%
2	Written assignments (essays, assignments to consolidate vocabulary and grammar)	82.4%	Independent study of students (developed tasks with assessment criteria)	94.1%
3	Test (written)	82.4%	Teamwork	88.2%
4	Compulsory reading list for the course	52.9%	Blended learning	70.6%
5			Educational games / business games / simulation	58.8%
6			Problem-based learning (cases / TRIZ, etc.)	29.4%
7			Leading Lectures	5.9%

Teaching facilities used in the classroom are represented in the following way:

- Audio-visual platforms or learning services (Flipgrid, Padlet, Quizlet, etc.) – 88.2%
- Websites (educational / scientific / analytical) – 82.4%
- Training products and software from Microsoft or other companies (Microsoft Forms, Classroom, Teams, etc.) – 82.4%
- Interactive whiteboard – 70.6%
- Software (software) – 58.8%
- Textbooks – 52.9%
- Flipcharts – 41.2%
- Films – 6.2%

Motivation of students' cognitive process are achieved via

- Student-centered (oriented) learning' (student-centered approach)
- Justifying the need for this knowledge in the future and its usefulness in a future career
- Interactive learning
- STT (Student Talking Time) group work
- Encouragement and social motives
- Educational games
- Regular support of students' interest based on their age and professional (IT) interests
- Selection of relevant materials, interesting content.
- Increasing curiosity and building confidence

The result of questionnaire reflects that research component on the course is also provided within the course of Academic and Professional English. Students are actively involved in different types of research activities: project work, writing essays, poster presentation and recording their own training video (tutorial). Students get acquainted with the stages of research work, research methods (questionnaires and interviews), data collection, they make presentations, do literature review, learn to analyze critically. They give analysis on quantitative data collection within research on various IT platforms. Students improve not only their skills in analysis, synthesis, information processing, but also all four types of speech activity by reading authentic academic articles in English and watching training videos and presentation skills in an academic style. Students are acquainted with literature review, citation and referencing in APA style.

Interview with program coordinator reflects that there is available teaching and learning assistance for teaching and learning professional development in the form of seminars with guest lecturers; seminars by Oxford Press trainers on the educational and methodological resources; access to Coursera courses provided by the university. The choice of methods takes into account the involvement, motivation of students in performing communicative competence during the learning process. The implementation of the competence-based approach in training IT students at AITU is carried out through the design of new educational materials in accordance with modern trends in science and job market; the use of interactive teaching methods that involve students in active work to solve specific professional and educational problems; design of new didactic tools based on integral teaching methods that allow to achieve planned results (cases, tasks, tests, electronic tools); mastering communicative competence.

On the results of the questionnaire, we may conclude that the principles and methods of teaching indicated in the questionnaire are widely used by the respondents. Teachers are aware and distinguish between traditional and innovative methods. The ratio of traditional/innovative methods is 40/60. There is a constant interaction between the teacher and the students through feedback, aimed at the development of professional, intellectual, behavioral skills and abilities. Teaching staff create a cognitive atmosphere as an important element of

learning, use transparent assessment systems, set clear and achievable goals and objectives of the course, define and assess the competencies of students for each course of the trimester. Motivation of students to learn (based on respondents' answers) are achieved via creating a cognitive environment and a personality-oriented approach (acquiring new knowledge, being an expert in any issue); professional and value competencies (the possibility of further employment for promising and interesting work); pragmatic interests (assessment, recognition of the group). Research component is frequently used in Academic and Professional English and meets the research requirements of first-year students.

The effectiveness of the teaching methods and conditions crated can be proven by the results of another survey on students' satisfaction conducted in December 2020.

92.5 % of respondents were satisfied with quality of instructors' teaching methods (including the instructors' manner of explaining the material)

93% of respondents were satisfied with the quality of the materials provided (including the quality of the slides, lectures notes, assignment requirements, books)

92.1% of respondents were satisfied with the quality of communication with instructors (including interactions in office hours)

91.4 % of respondents were satisfied with the overall quality of the course

Results of the survey reflects that this issue requires further study in order to obtain a more complete picture of the methodological aspect of the teaching staff work.

Discussion

The analysis of teaching methods demonstrated at the classes observed indicates that there is still a need to prepare students for cooperation with classmates, public speaking, and polemics. The analysis of observed classes also showed that in the educational process, interactive teaching methods master communicative competence. This is evidenced by both the answers to the questionnaires of teachers and students, which confirms the relevance of the study. It should be noted that both teachers and students in their answers are aware of the importance of the formation of communicative competence and the value of interactive teaching methods.

It should be mentioned that leading interactive approaches used in AITU for formation of students' personal and professional qualities are competence-based, project-based, multidisciplinary and practice-oriented. The implementation of the competence-based approach largely depends and results in development of the communicative competence of future IT specialists. Learning process in Academic and Professional English classroom is characterized by the presence of a complex of verbal and kinetic communication skills, cooperation and interaction, allowing to adequately assess and interpret educational and professional situations, make and execute effective decisions, constructively interact both on a professional and interpersonal communication. Students are taught to manage the communication process in conversation, dispute, interview, negotiations as an important professional quality of the future IT professionals.

Interactive teaching methods as one of the mostly frequently used teaching method at AITU, when students are involved in active cognitive and communicative activities to solve educational and professional tasks in a real atmosphere of active interaction, role play, dialogue and mastering new professional experience, interpersonal group interaction based on emotional involvement. Interactive teaching methods are characterized by an active position of students in cognitive activity when a student is not a learner (he is taught), but a learner (I am learning); independent (individual or group) search for a solution to the problem; creation of emotional tension; participants continuous interaction; changing the role of the teacher as an organizer, a consultant in solving problems; subject-subject relationship between participants'

interaction; reliance on students' personal experience. The teachers are aimed at creating conditions for the students' initiative. We can see that the functions of facilitation, managerial, organizer, consultant, interlocutor, organizer of subject-subject relations between the teacher and students are demonstrated by teacher when using interactive teaching methods.

The analysis made it possible to consider that the formation of communicative competence is effective if group, pair, individual work dominates among the forms of training, and interactive methods of teaching are based on the students' activity, their experience in business and role-playing, analysis of educational and professional situations. The choice of interactive teaching methods is due to the organization of group interaction in the classroom; the content of the educational material contains a problem which allows different points of view, becomes eventful for students; creates conditions when students' emotional, personal experiences are revealed and it is really important for the professionalism development. Based on the analysis of the communicative competence formation in future IT specialists, observed at English classes, we determine the classification of interactive teaching methods used: in educational activities (interactive methods of working with text, discussions, disputes); quasi-professional activities (business games, trainings, case method, project method, brainstorming, etc.); educational and professional: practice, diploma project design (brainstorming, project method, round table, discussion, etc.). As observation shows students who have developed communicative competencies demonstrate stable motivation for professional communication, proficient in communication tactics in various communication situation. They consciously approach to the solution of the assigned communicative task, are ready for self-assessment within communicative activity. Students with a high level of communicative competence are proficient in communication tactics, capable of acting in standard and non-standard situations. They consciously approach the solution of the set communicative task and ready for assessment and self-assessment.

Conclusion

It is productive communication that mediates between the individual and society. Competence-based approach becomes strategic in modern education and the dominant feature of modern IT education. Communicative competence creates conditions for social and professional realization, creative self-realization of each individual. The strategy for choosing interactive teaching methods in the Academic and Professional English classroom is carried out taking into account the teaching methods used to form communicative competence. An interactive approach as a qualitatively new interaction with students, provides them with self-determination, the choice of a solution during a joint problem discussion, the opportunity to implement large-scale technical projects in professional activity. The process of performing tasks is carried out on the basis of an opinion exchange, assessments, scientific approaches to problem solving. It could be recommended to conduct regular courses for teaching staff on the methods and principles of teaching in higher education and coaching sessions for novice teachers. This condition presupposes stimulation and advanced staff training. In this aspect, advanced training courses are carried out within the university seminars, trainings, workshops, open classes aimed at mastering the practical model of communicative competence formation by means of interactive teaching methods. This circumstance contributed to the development of an educational program for improving the teaching staff qualifications. The active participation of each student in solving an educational or professional problem contributes to the formation of an IT specialist's personality, open to new information, capable for long – life learning.

References

1. Aesaert, K., Van Nijlen, D., Vanderlinde, R., & van Braak, J. (2014). Direct measures of digital information processing and communication skills in primary education: Using item response theory for the development and validation of an ICT competence scale. *Computers & Education*, *76*, 168-181.
2. Bennett, S., Maton, K., & Kervin, L. (2008). The 'digital natives' debate: A critical review of the evidence. *British journal of educational technology*, *39*(5), 775-786.
3. Besnier, N. (2013). Language on the edge of the global: Communicative competence, agency, and the complexity of the local. *Language & Communication*, *33*(4), 463-471.
4. Gumperz, J. J., & Hymes, D. H. (1972). Directions in sociolinguistics: The ethnography of speaking (pp. 407-434).
5. Keiner, S., Lind, L., Toldy, K., Sarah, F., & Berger, D. (2014). *Guide facilitator. How to lead a group to make a joint decision?* M.: Izd. Dmitry Lazarev.
6. Koval, V., Polyezhayev, Y., & Bezkhlibna, A. (2018). Communicative competences in enhancing of regional competitiveness in the labour market. *Baltic Journal of Economic Studies*, *4*(5), 105-113.
7. Labunska, Sv., Petrova, M., Prokopishyna, O. (2017). Asset and cost management for innovation activity. *Economic Annals* – XXI, 165(5-6), 13-18.
8. Melnyk, E. (2012). Communicative competence as a factor for improving the professional activity of a teacher. *Scientific support of staff advanced training, 1*(10), 80-84.
9. Mendler, A.L. (2001). Connecting with students, association for supervision and curriculum development. *Alexandria, VA USA.*
10. Nikolayev, S. (ed.) (2003). European-wide Recommendations on Language Education: Study, Teaching, Evaluation.
11. Rickheit, G., & Srohner, H. (2008). The concept of communicative competence. *In The handbook of Communicative Competence.*
12. Romanenko, Y.O., & Chaplay, I.V. (2016). The essence and specifics of the services marketing system in the mechanisms of public administration. *Актуальні проблеми економіки*, (12), 81-89.