

Manuscript

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**EDUCATIONAL CONDITIONS AND IMPLEMENTATION FORMS
OF INTERACTIVE FOREIGN LANGUAGE EDUCATION
FOR STUDENTS OF TECHNICAL UNIVERSITIES**

Specialty 13.00.08 – Theory and Methodology of Vocational Education

ABSTRACT of the Dissertation for the Degree of Doctor of Education

Tomsk – 2017

This dissertation was completed at the Department of Education and Methods of Primary Education, Tomsk State Pedagogical University (Federal State Budgetary Educational Institution of Higher Education).

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The dissertation defense will take place on December 22, 2017, at 2:00 p.m., at a meeting of Dissertation Council D 212.266.01 for the Degree of Doctor of Education, at Tomsk State Pedagogical University, 60 Kievskaya Street, Tomsk, Russia 634061, Conference Hall.

The dissertation is available in the scientific library of Tomsk State Pedagogical University, 66 Gertsina Street, Tomsk, Russia 634061, and online at <http://www.tspu.edu.ru>.

This abstract was distributed on October 22, 2017.

Scientific Secretary of the Dissertation Committee
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RESEARCH SUMMARY

Relevance of the Study

The relevance of this study derives from three main factors. First, higher education requires the mastery of foreign-language communicative competency, which has become an essential component of professional readiness for engineers working in an increasingly interactive professional environment. Second, several regulatory documents govern the preparation of undergraduate technical students, including the Federal State Educational Standard for higher professional education and the core curricula implemented at National Research Tomsk Polytechnic University. Third, university instructors continue to seek new approaches to foreign-language teaching, particularly for students in technical fields. Although this approach has been examined extensively from psychological and methodological perspectives, the educational conditions and implementation forms specific to technical universities—including the organization of different models of collaborative activity between instructors and students (authoritarian, leadership, and partnership)—have not, in our view, been sufficiently studied.

Accordingly, the following contradictions have emerged in the pedagogical theory and practice of organizing interactive foreign-language education at technical universities:

- a contradiction between contemporary requirements for students' mastery of foreign-language communicative competency and the limited research into how an interactive approach influences its development;
- a contradiction between students' interest in interactive teaching methods and instructors' limited readiness to apply such methods, which requires shifting the model of collaborative activity from an authoritarian model toward leadership and partnership models; and between the need for an interactive approach as an innovative direction in foreign-language teaching and the insufficient understanding of the educational conditions and implementation forms appropriate to technical universities.

These contradictions gave rise to the research problem addressed in this dissertation: the need to substantiate the educational conditions for, and forms of implementing, interactive foreign-language education at technical universities.

Purpose, Object, and Scope

The *purpose* of this research is to substantiate and verify the primary educational conditions and implementation forms of interactive foreign-language teaching for university students. The *object* of the research is interactive foreign-language (English) instruction for students at technical universities. The *scope* of the research is the implementation of educational (pedagogical) conditions and forms of interactive foreign-language (English) teaching at a

technical university.

Hypothesis

This research hypothesizes that the effective implementation of interactive foreign-language teaching at a technical university is achieved through:

- shifting the instructor's role from sole leader to a dual role as organizer and participant in collaborative educational activity with students;
- implementing training forms consistent with the leadership and partnership models of collaborative activity between instructor and students;
- developing students' positive motivation toward professional foreign-language activity; and
- restructuring the content of the academic discipline "Foreign Language" to align with an interactive education strategy.

Research Tasks

The study addressed four primary research tasks, discussed in turn below.

Task One. The first task was to analyze existing approaches and concepts that define interactive education, including the concepts of "interaction," "interactivity," "interactive education," and "interactive methods." This analysis enabled us to define interactive education as an educational process grounded in dialogue, communication, and speech events. Existing definitions, however, do not consistently account for the organization of collaborative activity or for the respective roles of instructor and students. Using the collaborative-activity pedagogy developed by Dr. Prozumentova as a methodological foundation, we define interactive education as a collaborative educational activity between instructor and students, in which students serve as significant and influential participants and the instructor occupies the dual role of organizer and participant. Interactive education is implemented through corresponding methods and forms. Interactive methods emphasize the organization of collaborative activity between instructor and students within leadership and partnership models, whereas active methods remain possible within an authoritarian model. Unlike interactive methods, interactive forms may be examined both in terms of the interaction between instructor and students (frontal, individual, or group) and as an organizational form of instruction. The structure of a training session is the external expression of the collaborative activity between instructor and students, carried out within a specific mode, space, and sequence.

Interactive Methods	Active Methods
Leadership & Partnership	Authoritarian
Constructive and Creative Activity	Reproductive and Performative Activity

Paired	Frontal
Group	

Task Two. The second task was to identify effective forms for organizing interactive foreign-language instruction, both within and outside the classroom. Faculty survey results are summarized below.

Positive Findings	Negative Findings
52% (30 respondents) – Interactive education is the most effective method of work.	32% (19 respondents) – Organizing students in sequential periods.
31% (18 respondents) – Students report enjoying classroom work.	26% (15 respondents) – Although interactive education is typically effective.
	17% (10 respondents) – Report that students do not particularly enjoy

Although instructors recognize numerous advantages of interactive education, only 41% of respondents reported giving sufficient attention to interactive methods and forms in their foreign-language classes; 26% apply them episodically, and 32% do not use them at all. Most instructors therefore hold neutral or negative attitudes toward interactive education, regarding it as a form of game or entertainment, and prefer an authoritarian model of collaborative activity, which limits opportunities for scholarly communication between instructor and students, as well as among students themselves.

Task Three. The third task was to substantiate the principal educational conditions for interactive foreign-language teaching among technical-university students, within the framework of collaborative pedagogical activity. Based on an analysis of theoretical sources, practical experience teaching foreign languages at Tomsk Polytechnic University, and questionnaire results, the following factors were identified as shaping the educational conditions for interactive education:

1. Changes in the role of foreign-language competency within the professional training of modern technical specialists;
2. Changes in the content and emphasis of foreign-language competency, particularly its strengthened social orientation;
3. The expanding role of active (interactive) teaching methods and their educational value in foreign-language mastery; and
4. University instructors' and students' attitudes toward active (interactive) teaching methods and forms.

Based on these factors, we identified the following pedagogical conditions for interactive learning:

1. Increasing students' engagement in educational and professional activity within the university learning process by strengthening their motivation for professional foreign-language activity;
2. Shifting the instructor's role from sole leader to the dual role of organizer and participant in collaborative educational activity with students;
3. Applying interactive methods and forms in the conduct of training sessions; and
4. Restructuring the content of the academic discipline "Foreign Language" to align with an interactive education strategy.

Implementing these conditions required first defining and approving the forms of interactive education—beginning with classroom activities, followed by the organization of students' independent work, and finally the design of broader educational events.

Task Four. The fourth task was to experimentally verify the effectiveness of the educational (pedagogical) conditions and interactive teaching forms within the leadership and partnership models of collaborative activity. This experimental work involved:

1. Developing and implementing interactive forms of foreign-language teaching, both within and outside the classroom (e-course, conference week), at a technical university;
2. Designing and conducting training sessions that embody the educational conditions of interactive education; and
3. Identifying resulting changes in student activity, motivation, and academic achievement, as well as changes in the instructor's role in the classroom.

Compared with traditional forms of foreign-language teaching—reading instruction, for example—interactive teaching transforms the relationship between instructor and student: the instructor becomes an organizer of student learning activity. This shift is driven by students' personal and professional motivation to develop foreign-language communication skills. Three stages were identified in the organization of a training session, reflecting the logic of collaborative activity:

Stage	Instructor's Role	Students' Role
Stage I: Immersion in both the topic and the collaborative activity	Organizer	Contractor
Stage II: Development of collaborative activity while consulting with the foreign language (textual and group work)	Consultant, Moderator	Participant (textual and group work)
Stage III: Reflection on text comprehension through dialogue	Consultant, Expert	Participant (pair work)

As shown above, each stage is characterized by a distinct role for both instructor and students as communication participants. This structure enables the full set of proposed educational conditions to be realized. For example, the condition of activating students' educational and

professional activity is achieved through the selection of discussion topics, the exchange of views, and the organization of group work. The condition of restructuring course content toward interactive education is achieved by emphasizing competencies such as the ability to comprehend written and spoken language, willingness to engage in group interaction, and the ability to locate, organize, and present information from source materials.

To support interactive independent student work, an e-course was developed that specifically incorporated a discussion-forum component, enabling open discussion of course topics. (The full e-course is available through the dissertation repository at <https://www.tspu.edu.ru/science/diss/dissertations>.) The structure and content of this e-course support the full set of educational conditions identified above: student engagement is strengthened through independent work, online discussion, peer commentary on forum posts and essays, access to supplementary online resources, and self- and peer-assessment. The instructor's role shifts to that of moderator, consultant, and organizer. The course content is restructured toward interactive education through the development not only of foreign-language skills but also of broader cultural competencies, including navigating information environments, conducting online discussions, exchanging opinions, and peer review.

Classroom training sessions and independent work were further supplemented by a "conference week"—an interactive educational event integrating in-class activity with students' independent work. This event was designed to foster student initiative, academic independence, and interest in public speaking in a foreign language. The conference week comprised three stages: preparatory, main, and evaluative-reflective, as summarized below.

Stage	Instructor's Role	Students' Role
Stage I – Preparatory: (a) selecting a presentation topic; (b) consultation; (c) independent student work	Consultant-Organizer	Co-Executive
Stage II – Main (Presentation): (a) organizational activities; (b) student public speaking; (c) collaborative discussion of presentations	Moderator	Participant (open discussion)
Stage III – Evaluative-Reflective: Assessing development of foreign-language communicative competency	Expert	Participant (reflection and evaluation)

Student surveys indicated a favorable response to this format: 97% of respondents cited the opportunity to establish a subjective position, 92% noted improved information-management skills, and 85% reported meaningful communication. As an interactive educational event, the conference week enabled the implementation of the full set of pedagogical conditions. The condition of activating students' educational and professional activity was achieved through students' choice of presentation topics, alignment with their personal interests within the

broader educational and cultural context, and independent work. The condition involving interactive methods was realized through joint discussion of presentations, student-generated questions, analysis of language errors, and completion of evaluation forms. The condition of restructuring course content toward interactive learning was achieved by emphasizing competencies such as everyday and social communication, professional and business communication, and sociocultural awareness.

Results of the Experimental Study

Diagnostic methods employed in the experimental study included an English progress test, a student questionnaire, and an assessment of the functional and semantic content of collaborative activity, along with the instructor's role in the classroom. The results are summarized below.

First, listening comprehension showed consistent positive gains from 2011 to 2014: Group I (2011–2012) improved by 2.5%; Group II (2012–2013) improved by 2.86%; and Group III (2013–2014) improved by 3.74%. A clear pattern emerged: the higher students' initial listening proficiency, the greater their overall gain. Statistical analysis using the Mann-Whitney test confirmed that the experimental group significantly outperformed the control group on the progress test.

Second, results from an unfinished-sentence questionnaire indicated that students valued not only subject-matter learning but also interactive skills, including communication, teamwork, public speaking, and dialogue. Ninety-three percent of participants (66 students) reported practical language application within this format; 81% (58 students) reported public-speaking practice; and 57% (41 students) reported gaining teamwork experience.

Third, a comparison of instructors' actual and preferred collaborative practices revealed that instructors in the experimental group, who implemented the interactive conditions and forms, predominantly engaged in leadership and partnership models of collaborative activity. Instructors in the control group, who rarely used interactive methods, more frequently relied on an authoritarian model. A substantial gap emerged within the control group between desired and actual use of leadership and partnership models: only 26% of control-group instructors reported frequently engaging in leadership-model behaviors, although 37% expressed a preference for doing so more often. A comparable gap appeared for partnership-model behaviors, used by 25% but preferred by 33%. No such gap appeared in the experimental group, where instructors frequently engaged in leadership (59%) and partnership (61%) behaviors and expressed only modest further interest in increasing these behaviors (21% and 24%, respectively).

Model of Collaborative Activity	Often Used (Exp.)	Often Used (Ctrl.)	Rarely Used (Exp.)	Rarely Used (Ctrl.)	Prefer More (Exp.)	Prefer More (Ctrl.)	Prefer Less (Exp.)	Prefer Less (Ctrl.)
Authoritarian	32%	82%	9%	0%	9%	2.5%	20%	5%
Leadership	59%	26%	4%	8.4%	21%	36.9%	2%	4%
Partnership	61%	25.2%	1.4%	10%	24%	32.7%	0%	4.2%

Statements for Defense

1. Modern vocational training aims to develop competencies that extend beyond narrow technical specialization to include students' broader professional self-development, including the mastery of foreign-language communicative competency. These goals can be achieved through interactive foreign-language instruction conducted as a collaborative educational activity between instructor and students.

2. Implementing interactive education requires establishing appropriate educational conditions—interrelated factors necessary for the effective development of students' general cultural and professional competencies, as well as professional and personal qualities such as readiness for self-development, cooperation, and social interaction.

3. Interactive education requires transforming both the functional and semantic content of collaborative activity and the instructor's role—from sole leader to the dual role of organizer and participant—while shifting students from passive recipients to active, engaged participants in collaborative activity. Accordingly, interactive education requires the coordinated use of authoritarian, leadership, and partnership models, implemented through forms such as structured training sessions, educational events, and e-learning courses.

4. Effective development of professional and personal motivation in interactive foreign-language education for technical fields is achieved through instructional materials that connect students to their future profession and to opportunities for self-realization and career growth. This is accomplished through implementation forms such as conference week, e-learning, and classroom practical training sessions.

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