The Importance Of Communicative Competence In Engineering Activity

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ABSTRACT
This paper highlights the importance of communicative competence in adapting information to the audience, coordinating teamwork, and substantiating decisions, and identifies directions for its development through professional situations.

KEYWORDS: Communicative competence, engineering activity, professional communication, technical information, collaboration, professional decision-making, reflection.

INTRODUCTION
Modern engineering is not limited solely to technical calculations. An engineer explains ideas, identifies customer needs, coordinates tasks with the team, provides safety instructions, and prepares documentation. Therefore, the transformation of technical knowledge into practical results depends on its clear, logical, and context-appropriate expression.
D. Hymes introduced communicative competence into academic discourse as the ability to know the rules of language and to use them appropriately in a particular social situation. [1]
M. Canale and M. Swain explained it through the unity of grammatical, sociolinguistic, and strategic knowledge. In engineering communication, this implies the need to convey the same technical content in forms appropriate to different audiences. [2]
In engineering practice, communicative competence is not an auxiliary or secondary quality but a functional mechanism that transforms technical knowledge into professional outcomes. If a properly developed solution is not sufficiently substantiated, its advantages are not explained to stakeholders, or clear instructions are not provided to those responsible for implementation, its practical effectiveness decreases. Therefore, communicative training should not be considered separately from an engineer's professional competence but rather as an integral component of it.
First, communicative competence performs an information-communication function. An engineer selects the necessary information from a large volume of technical data, systematizes it, and presents it orally, in writing, or graphically while maintaining terminological accuracy. For example, information about a malfunction in a unit addressed to a service engineer should be based on technical diagnostic terminology, whereas an explanation provided to a farmer should be related to costs, productivity, and ease of use. Adapting information to the audience's level of knowledge and needs does not mean simplifying the content but presenting it in an understandable form without losing its essential meaning.
Second, it performs an interactive-coordinating function. Engineering projects usually require collaboration among different specialists, including designers, technologists, mechanics, economists, occupational safety specialists, and management representatives. Clarifying tasks

within a team, listening to opinions, reconciling opposing positions, and reaching a common decision are achieved through communicative actions. International requirements for engineering graduates also identify effective communication with different audiences and effective participation in a team whose members jointly provide leadership and create a collaborative environment as distinct learning outcomes. [3]

Third, communicative competence has a regulatory-management function. In the production process, unclear assignment of tasks, failure to define areas of responsibility, or lack of feedback may lead to technological errors and loss of time. A clear instruction includes the objective, sequence of actions, deadline, responsibility, and assessment criteria. For an agricultural engineer, this function is particularly important in planning seasonal work, preparing machinery for operation, organizing brigade activities, and coordinating technical maintenance.

Fourth, the conflict-management function serves to resolve professional disagreements without turning them into personal confrontation. A competent engineer separates the problem from the individual, identifies the interests of the parties, relies on facts, and seeks an acceptable agreement. Such communication strengthens team stability and facilitates the implementation of decisions.

Studies on engineering education regard communication, teamwork, problem-solving, and professional responsibility as important competencies of graduates. Comprehensive analyses also identify effective communication as a universal competence connecting engineering roles. Therefore, it should be an integrative outcome of linguistic, professional, and pedagogical-psychological training. [4;5]

In agricultural mechanization, an engineer communicates with farmers, machine operators, service personnel, agronomists, and managers. Their knowledge, interests, and ways of perceiving information differ. Therefore, explaining the essence of a technical solution to the relevant audience and organizing collaborative action are essential conditions for professional success.

Communicative competence develops through active communication experience within a professional context. A student should act as a subject who analyzes problems, asks questions, provides arguments, and defends decisions. The OECD “Education 2030” project also considers collaboration and responsible action in complex situations to be important. The European Union’s framework of key competences identifies understanding and expressing ideas and facts in oral and written forms as a fundamental outcome. [6;7]

The first direction is the integration of content with real engineering communication situations. Tasks such as preparing a request for technical service, providing safety instructions, explaining the efficiency of a unit to a farmer, or resolving a disagreement within a brigade transform technical knowledge into communicative action. The audience, purpose, and expected outcome of the situation should be clearly specified.

The second direction is the systematic use of active and collaborative methods. Case study develops the analysis of professional situations and decision-making; PBL develops the identification of missing information and the substantiation of solutions within a group; debate develops the comparison of the advantages and limitations of technical decisions; and collaborative learning develops role distribution, listening to a partner’s opinion, and collective responsibility.

The third direction is criterion-based assessment of communicative activity. Along with technical content, the logical coherence of ideas, terminological accuracy, argumentation, adaptation to the audience, listening, collaboration, non-verbal behaviour, and reflection are taken into account. The combination of teacher assessment, peer assessment, and self-assessment provides a more accurate indication of the student's developmental needs.

The fourth direction is to integrate lectures, seminars, independent study, and practical training around a common communicative objective. Theory is studied in lectures, situations are analyzed in seminars, technical texts or presentations are prepared during independent study, and real communication is observed and reflectively analyzed during practical training. Such continuity contributes to the transformation of skills into a stable professional quality.

Conclusion

Communicative competence is manifested in an engineer's activities in identifying problems, developing solutions, reaching agreement with the team, explaining decisions, and evaluating results. It manifests itself through the unity of five components and serves to transmit information, coordinate collaboration, resolve conflicts constructively, and facilitate reflection. Its development through real professional situations, case study, PBL, debate, collaborative learning, and criterion-based assessment prepares future engineers to discuss and substantiate technical solutions with different audiences and to implement them in practice.

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