

## LINGVOPROFESSIONAL COMPETENCE OF ENGINEER

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**Key words and phrases:** competitive products; foreign language; future engineers; labor market; lingvoprofessional competence.

**Abstract:** The presentation focuses on recent shifts in the foreign language learning paradigm and reviews intellectual realignments of future engineers that follow from these shifts. It then takes a fresh look at the role that foreign language (English) can play in the formation of lingvoprofessional competence.

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The latest engineer's trends increasingly find them involved in the international arena as they practice their profession. Engineering education, to adequately prepare new graduates for a career in practice in the increasingly international arena, needs to have several dimensions which have not typically been included for past generations of engineering students, including foreign language proficiency, cultural background development, international business concepts, and international technical issues. This paper explores needs and current efforts in lingvoprofessional competence.

Engineers involved in the design of products find that they must consider a variety of user needs as they develop products for multi-national markets. They also find that materials and components must be sought on a world-wide basis as they are to develop competitive products which are both of high quality and cost effective.

That is why universities must have a serious attitude about their role in preparing students to contribute productively in the labor market. In this process obviously they should not abandon theoretical training, since application of results is impossible without preliminary research. But universities should develop courses meeting the expectations of students, employers and society. Furthermore, they should give particular attention to the field of foreign language (predominantly English), which is vitally important for economic reforms.

In this era of international markets and free-trade groupings, engineers also often have the opportunity to practice directly in countries other than their own. Joint ventures across national boundaries, major technical corporations with international operations, and contracts for technical projects to be carried out in foreign venues are typical in today's engineering practice.

To adequately prepare new graduates for a career in this increasingly international arena, engineering education needs to have several dimensions which have not typically been included for past generations of engineering graduates. These include:

- Foreign language proficiency (written and spoken fluency in at least one foreign language, preferably two).
- Cultural background development (education concerning the culture of peoples in regions of the world where the engineer may practice).

- International business issues (competitiveness, free market developments, multi-national companies, etc).
- Technical issues (measurement systems, standards and codes, environmental constraints, etc).

These components must be integrated into the education of engineers in ways which do not dilute the traditional mathematics, science, and engineering studies which provide the technical base for a long career in engineering practice.

Foreign language study is a key component to broadening the perspective of an engineering student to international issues. Knowledge of other languages increases intellectual abilities and provides a window of understanding to other customs and cultures. It is clear that mastering at least one foreign language is a primary requirement for the career of the engineer or other professional involved in international practice.

We think it must be English as a global language. Because businesses and media have experienced globalization and re-localization. The last few decades have seen a growth in the role of English around the world as the lingua franca for economic and scientific exchange. There is a balance shift between first language speakers and the second language speakers. Increasing numbers of people around the world turn to English as a requirement of international communication. But the growing prominence of regional and local varieties of English has several implications for English teaching in the 21<sup>st</sup> century. First, English teachers will need to reconceptualize how they conceive of the link between language and culture. Why is it that our students learn in their English classes to talk about the British parliament but not about our local government institutions? Why do they learn to talk about British media and cultural artifacts, but not about Russian forms of media and cultural expression?

Culture remains an integral part of language learning, but our approach toward culture must become multi-faceted, taking into account the diverse cultures of the many people who speak English around the world. There is no single formula for how to handle issues of culture in teaching. Teachers will need to vary their approach depending on the particular audiences being taught and their purposes in learning English. The growing role of different varieties of English will also necessitate a new respect for bi-dialectism and multi-dialectism, again taking into account the needs of the learners. Russian university students hoping to pass the TOEFL will need and want to study standard American English.

This will impact the way we think about syntactical, lexical, and phonetic standards and the great importance teachers place on use of "correct" language. In the 21<sup>st</sup> century, speakers of English may increasingly need to diverge from what they have been taught is correct in order to make themselves understood to converse from around the world.

In the 21<sup>st</sup> century there will be a growing basis for learners around the world to view English as their own language of additional communication, rather than as a foreign language controlled by the "Other". Teachers would do well to exploit this situation by creating opportunities for communication based on the values, cultural norms, and needs of learners, rather than on the syllabi and texts developed in England and the United States. Newspapers, radio, and television are becoming increasingly more international in their coverage of events and comments. It is quite logical, therefore, to strive to provide high education which reflects this important change in the need and use of English language.

It is also important for English language educators to come to grips with the social, economic, cultural, and linguistic consequences of the global spread of English.

We think that English is neither good nor bad, nor is it neutral. To declare that English is unequivocally harmful or beneficial is to deny human agency which shapes

how English is used in different circumstances. However, it would also be naive to think that English is a completely neutral tool without weight of its own. English carries a set of ideologies, values, and norms based on the history of its development and use. The spread of English thus privileges certain groups of people (including native speakers and non-native elite who have the opportunity to master it well) and may harm others who have less opportunity to learn it. The spread of English can also be a one of many factors contributing to the tragic loss of indigenous languages around the world. But it can also be deployed as a weapon of the dispossessed, as occurred in the South African liberation struggle. Although it was definitely unpleasant to be colonized by another country.

Nevertheless we should be realized that teaching language as social practice means linking linguistic forms and social meanings. The three goals of foreign language education—communicative competence, cultural knowledge, and cognitive growth – are inseparable. Even though the curriculum may include courses that focus on one purpose of language (e.g., conversation or composition courses, English oral survival or French business courses), understanding a foreign language and making oneself understood in that language require more than the acquisition of formal skills; learners must be willing to see the world from another perspective.

One more major way that informationalism will impact English language teaching in the 21<sup>st</sup> century relates to trends in employment. Simply put, the jobs that existed in the industrial era are disappearing and are being replaced by new types of job and work requirements that didn't exist before.

New work skills of symbolic analysis are emerging as crucial for success in the 21<sup>st</sup> century. These include skills of critical analysis, evaluation, experimentation, collaboration, communication, abstraction, system thinking, and persuasion. And, due to globalization, these skills are increasingly applied in English language contexts. Not only American and British firms, but many other transnational firms based in Europe and Asia use English for international communication and even for national communication. And growing numbers of symbolic analysts use English on a daily basis to gather information or communicate with colleagues on the Internet.

What does this mean then for English language teaching? First it underscores the role of English as an international language for global communication. Secondly, it signals a change in the types of communication required in English. A large and increasing number of people, even if they never set foot in an "English-speaking country," will be required to use English in highly sophisticated communication and collaboration with people around the world. They will need to be able to write persuasively, critically interpret and analyze information in English, and carry out complex negotiations and collaboration in English.

Another words such language study must include development of proficiency in both the verbal and written forms of the foreign language, including everyday use of the language as well as technical terminology and concepts. It would be highly desirable for the fundamentals of both verbal and written language to have been mastered in technical university, so that only the technical components needed to be added as part of the engineering education process.

It is obvious that international competitiveness has become a major issue for engineers in every developed country, as well as for those in technically emerging countries. The current competitive challenge at its most fundamental level is to produce higher quality products than the competition, and to market them at lower prices as well. Case studies on industries which produce automobiles, computer chips, video cassette recorders, cameras, and other advanced technical products readily show how dominance of the international marketplace can shift from one country or region to

another as technical and economic forces operate. Engineers working in the international marketplace – and those in the domestic marketplace in areas where foreign products or services may compete – need to understand the elements of such competitiveness, and how to keep their company's outputs competitive against foreign (and domestic) competition. In the quality control area, for instance, engineering students need to master probability and statistics, in order to be prepared to assure the quality of their products and services. This is also the era of the multinational corporation, and engineers need to be prepared to assist their firms in appropriately diversifying into operations in other countries as economic and political forces indicate such movement.

As for engineers who practicing in a foreign country, or offering products or services for sale there, face a myriad of professional practice issues. They must be able to get licensed to practice in the appropriate jurisdiction, or to develop partnership relationships with practicing professionals in the foreign country of interest. They must become knowledgeable of the ethical mores and codes in the foreign country, and be able to rationalize them with ethical standards in their own countries. Legal requirements and standards also must be understood and related to home country norms, as must professional liability issues. Additional business practice areas such as insurance, warranties, and bidding procedures must also be mastered.

It is also clear that considerable in-service education or training will be needed throughout their professional careers. Additional languages and cultural studies may be needed as the engineer gets assignments in countries or regions not anticipated in the initial education process. Recent and current developments in countries of interest must also be part of the ongoing learning pattern of engineers involved in international practice.

The desirability of developing foreign language proficiency in engineering students has increased greatly in recent years, as the practice of engineering has become more global in scope. An international education program has been established at the Tambov State Technical University to help the next generations of engineers to better prepare for careers in the international marketplace.

The Chair of Foreign Languages with some technical chairs of our University have begun the International Engineering Program with an emphasis on the English, German and French languages and culture, within the framework of a four year program which leads to have an additional profession – ‘Technical interpreter’. Moreover we organized ‘Spoken language’ course. Special courses are provided for students in all engineering fields, and technical courses in the engineering curriculum. These courses are available across a wide spectrum of technical subject matter, including mathematics, applied physics, chemistry, chemical engineering, mechanical engineering and electrical engineering.

We hope that this preparation will help them to enter the global market era. Participants will graduate fluent in a foreign language, as well as proficient in engineering. They will also have an expanded understanding of the engineering profession in the global context.

In addition to the usual engineering curriculum requirements, students will complete a language major with courses in oral communication, reading, composition, grammar, culture and civilization, literature, and business. No doubt that each student is given the opportunity to find his own independent role for continually expanding his professional experiences.

So the era of international practice for engineers has clearly arrived, and each engineering education system must proactively revise its programs to adequately prepare its graduates for work in the global marketplace.

## Лингвопрофессиональная компетенция инженера

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**Ключевые слова и фразы:** будущие инженеры; иностранный язык; конкурентоспособная продукция; лингвопрофессиональная компетенция; рынок труда.

**Аннотация:** Предлагаемая статья акцентирует внимание на недавние лингвистические сдвиги образовательной парадигмы и анализирует интеллектуальные совершенствования будущих инженеров как следствие указанных изменений. В этой связи иностранный язык (английский) поможет сформировать лингвопрофессиональную компетенцию конкурентоспособного инженера.

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## Linguoprofessionelle Kompetenz des Ingenieurs

**Zusammenfassung:** Im vorschlagenden Artikel werden die neulichen linguistischen Wandlungen des Ausbildungsparadigmas berücksichtigt und die intellektuelle Vervollkommnungen von zukünftigen Ingenieuren als die Folge der genannten Veränderungen analysiert. In diesem Zusammenhang wird die Fremdsprache (Englisch) bei der Formierung der linguoprofessionellen Kompetenz des konkurrenzfähigen Ingenieurs helfen.

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## Compétence professionnelle linguistique de l'ingénieur

**Résumé:** Le présent article attire l'attention sur les récents dérivages linguistiques du paradigme d'instruction et analyse les perfectionnements intellectuels des futurs ingénieurs comme conséquence des changements indiqués. Ainsi à l'aide de la langue étrangère (l'anglais) on pourrait former la compétence professionnelle linguistique de l'ingénieur.

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