

ARTICLE

SOME LANGUAGE DIFFICULTIES FOR TRANSLATION AUTHENTIC PROFESSIONALLY-ORIENTED TEXTS ON PHYSICS

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ABSTRACT

The article deals with the language problems of the translation of authentic professional English-language texts on physics into Russian. The relevance of the problem under investigation is due to the extensive use of Internet resources for education, as well as developing international scientific cooperation. The purpose of the article is both to identify the difficulties of translation, and to develop recommendations for overcoming them. The author analyzes the lexico-grammatical characteristics of texts that cause difficulties in understanding them. The leading method to investigate this problem is the lexico-grammatical analysis of authentic texts. As a result of the research, some ways of overcoming the discussed problem are suggested. The article may be of interest to English teachers when preparing teaching aids and manuals on languages, seminars and special courses on English in the field of translation of authentic texts on physics and dictionaries of the English and Russian languages and for students of non-linguistic universities.

INTRODUCTION

The relevance of teaching the translation of authentic professional English-language texts has increased at the present time in connection with the extensive use of Internet resources by students, as well as with developing of international scientific cooperation. It is important for Bachelors to read and translate scientific works correctly, as well as be able to express their ideas at conferences, on pages of scientific journals. To do this, it is necessary to study the lexical and grammatical features of the scientific style, which make it difficult to translate them into Russian. Expansion of the scope of authentic professional English-language texts actualizes the problem considered in this article.

Such foreign scientists as S. Bernardini [1], S. Colina [2], J. Fraser [3], D. Kelly [4], D. Kirali [5], Ch. Braley-Klein [6], Br. Mossop [7], Ch. Nord [8], C. Peveratti [9], A. Pim [10], and others, have studied the problem of linguistic and grammar peculiarities of authentic texts translation.

There are also works by Russian linguists, for example E.Yu. Dolmatovskaya [11], R.I. Maryasova [12], S.V. Mokhova [13], I.P. Pavlova [14], G.V. Perfilova [15].

METHODS

While preparing the article such methods as study research, analysis, synthesis, studying and generalization of linguistic research were used.

Special literature, manuals and textbooks on translation theory, research theses and articles on specifics of authentic texts were investigated during the study. We described theoretical aspects and key concepts of the research, basic features of authentic professional texts translation from English into Russian.

RESULTS

Let us dwell on some of the most common typical language difficulties that prevent the accuracy and completeness of the understanding of authentic texts on physics see [Table 1].

Table 1: Lexical-grammatic difficulties of translation of authentic professional english language texts

No	Lexical difficulties	Grammatical difficulties
1	Unknown words (common and terms)	Multifunctionality of grammatical forms
2	Polysemantic words	The polysemanticism of grammatical forms
3	Homonyms (absolute)	Grammatical homonymy
3.1	Homographs	–
3.2	Homophones	Grammatical homophony
3.3	Paronyms	–

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Polysemantic words

Authentic texts on Physics contain a large number of unfamiliar words for students, both common and terms: general scientific and highly specialized. It is noted that many-valued words, both common and terms (general scientific and special) cause difficulties for bachelors in the translation of authentic texts. Let’s look at some examples which vividly show how many meanings English words have when they are translated into Russian [Table 2].

Table 2: Polysemantic words when translated into Russian

No	English	Part of speech	Russian	Meanings
1.	solid	adjective	<i>твёрдый</i>	hard, firm, strong, steadfast, rigid
			<i>сплошной</i>	continuous, entire, compact, blank, massive
			<i>прочный</i>	lasting, strong, durable, firm, rugged
			<i>солидный</i>	solid, massive, massy
			<i>цельный</i>	whole, integral, entire, perfect, all-in-one
			<i>крепкий</i>	strong, hard, sturdy, fast, robust
			<i>надёжный</i>	reliable, secure, safe, sound, dependable
			<i>плотный</i>	dense, tight, thick, close, compact
		noun	<i>массивный</i>	massive, rugged, voluminous, massy
			<i>твёрдое тело</i>	solid
			<i>тело</i>	body, flesh, frame, figure, corpus
			<i>массив</i>	massif, block
2.	latitude	noun	<i>широта</i>	latitude, breadth, width, catholicity, amplitude
			<i>обширность</i>	amplitude, latitude, hugeness
			<i>свобода</i>	freedom, liberty, latitude, play, disengagement, unrestraint
			<i>широтная характеристика</i>	latitude
			<i>терпимость</i>	tolerance, toleration, forbearance, indulgence, liberality, latitude
			<i>районы</i>	latitude
			<i>местности</i>	latitude
4.	factor	noun	<i>фактор</i>	factor, agent, agency
			<i>коэффициент</i>	coefficient, factor, ratio, rate, index, multiplier
			<i>множитель</i>	factor, multiplier
			<i>момент</i>	moment, point, momentum, instant, minute, factor
			<i>особенность</i>	feature, peculiarity, singularity, characteristic, particularity, factor
			<i>движущая сила</i>	driving force, motive force, motive power, momentum, mover, factor
			<i>агент</i>	agent, medium, envoy, factor, emissary, courier
			<i>посредник</i>	intermediary, mediator, agent, broker, middleman, factor
		<i>комиссионер</i>	commissionaire, broker, salesman, jobber, huckster, factor	
		adjective	<i>управляющий</i>	control, administering, regulatory, factor

Homonyms

In accordance with the form, homonyms are divided into absolute homonyms, homographs, homophones and paronyms.

Absolute homonyms are words in a language that are the same both in sound and in writing. For example: sound [saund] - healthy (in good condition; not damaged, injured, or diseased) and sound [saund] – sound (vibrations that travel through the air or another medium and can be heard when they reach a person’s or animal’s ear).

It is necessary to draw students’ attention to homographs, the words which are identical in spelling, but differ in pronunciation and meaning.

For example:

- 1) minute [mɪnɪt] (about time) – “short distance, moment” and minute [maɪ`nju:t] – “small, smallest”;
- 2) object [ˈɒbdʒekt] – “a thing” and object [əb`dʒekt] – “to object, protest”;
- 3) row [əu] – “series, range, row, variety, line, sequence” and row [rau] – “quarrel, row, altercation, contention, bickering, disagreement”.

Homophones are identical words in pronunciation, but differ in writing and meaning, also often prevent accurate translation of authentic professionally oriented texts on physics, for example:

- 1) wait [weɪt] – “expect, await, watch, stay” and weight [weɪt] – “weight; mass, gravity, array”;
- 2) (semiconductor) grate [ˈɡreɪt] (semiconductor) – “lattice, grille, grid, grating” and great [ˈɡreɪt] – “significant, large”;
- 3) weak [wi:k] – “weakly, low, feeble, faint, slight” and week [wi:k] (monitoring) – “hebdomad, weekly (control)”.

While listening to authentic texts, there are difficulties in the presence of text-words in words, paronyms, which differ in sounding only by one phoneme.

The perception of such words often causes difficulties for bachelors-physicists due to insufficiently developed phonemic comprehension skills. The distorted auditory images of these words lead to fuzzy visual-motor images. As a result, they are confused in reading, in speaking, and in writing. For example:

- 1) affect [əˈfekt] – (verb) “to influence someone, affect, manipulate, react, reverberate” and effect [ɪˈfekt] – (noun) “influence, impact, effect, power, sway, action”;
- 2) expensive [ɪksˈpensɪv] – “expensive, dear, costly, darling, precious, pricey, high-priced” and expansive [ɪksˈpænsɪv] – “capable of expanding, extensive, vast, large, broad, wide”;
- 3) turn [tɜ:n] – “roll up, turn aside, cut down, transform, convert, turn into, transmute, render” and torn [tɔ:n] – “torn, disrupted, lacerated, in rags, disrupt”.

A special case of paronyms is pseudo-international words, which, in their phonetic or graphic form, are associated with international vocabulary. They cause difficulties of various kinds in translating the full text or one of the sentences [Table 3].

Table 3: Translation of pseudo-international words into russian language

№	English	Wrong translation into Russian	Correct translation into Russian
1	academic	Академик – academician (noun), lit. a member of an academy, especially of the Royal Academy of Arts, the Académie Française, or the Russian Academy of Sciences	академический – academic (adjective) academical, collegiate; учебный – training, educational, academic, school, instructional, practice; академичный – academic, academical; теоретический – theoretical, theoretic, academic, speculative, abstract, notional; университетский – university, academic, collegiate, academical; поил ученый – scientist, academic, scholar, savant, erudite, boffin; преподаватель – teacher, instructor, lecturer, professor, academic, reader; профессор – professor
2	accurate	аккуратный, упорядоченный, дневальный, аккуратный, дежурный, организованный, спокойный – orderly; (adjective) аккуратный, опрятный, чистый, изящный, чистоплотный, неразбабленный – neat; осторожный, внимательный, заботливый, аккуратный, бережный, точный – careful; опрятный, аккуратный, чистый, неплохой, значительный, довольно хороший – tidy; аккуратный, элегантный, опрятный, приведенный в порядок, в состоянии готовности, изящный – trim; аккуратный, опрятный, нарядный, щеголеватый, крепкий – trig; аккуратный, уютный, удобный, плотно прилегающий, укрытый, укромный – snug; точный, четкий, аккуратный, определенный, тщательный, ясный – precise; хороший, приятный, красивый, славный, милый, аккуратный – nice; подтянутый, упругий, аккуратный, напряженный, в хорошем состоянии, туго натянутый – taut; аккуратный, опрятный, ловкий, искусный – natty;	точный – accurate (adjective) точный – accurate, exact, precise, just, precision, strict; тщательный – thorough, meticulous, rigorous, close, accurate, precise; меткий – accurate, precision, on target, well-directed; калиброванный – calibrated, accurate; правильный – correct, right, proper, regular, sound, accurate

		<i>пунктуальный, аккуратный, точный</i> – punctual	
3	technique	<i>техника</i> – equipment	<i>способ, метод</i> – method (noun); <i>техника</i> – technology, engineering, technics, mechanism; <i>метод</i> – way, mode, process, how; <i>способ</i> – way, method, process, manner, means

Grammatical homonymy

Difficulties in understanding the content of authentic texts arise due to the multivalence, homonymy, homophony and multifunctional grammatical forms of English [17]. It is important to take into account the grammatical characteristics of oral messages. First, these are the abbreviations of the form of auxiliary verbs that sound the same [18], for example: he'd put it... [hid'put it] (he would put or he had put).

Secondly, the homonymy of inflections and words, for example: his assistant's laboratory or his assistants' laboratory? [ə' sist(ə)nts] (he's and his).

To overcome such difficulties when listening, a systematic practice in the perception of phrases with similar forms is necessary, which will ensure the prediction of different meanings and its refinement with reliance on the subsequent context.

DISCUSSION

At Kazan Federal University, more attention is paid to translation of authentic, professionally-oriented foreign language texts from the second year of bachelor's training in the course of Foreign Language. In the subsequent training the curriculum of undergraduates includes such disciplines as "Academic writing" and "Academic communication". Teaching translation of authentic texts is an integral part of those disciplines. Teachers of the Department of Foreign Languages for Physics and Mathematics and Information Technologies have developed manuals designed to prepare bachelor students for the use of English as a means of professional activity, namely the formation of skills and abilities to work independently with documents and special literature in English to obtain professional information, maintaining professional contacts and conducting research work.

It is important to note that when selecting text material, the informative value of texts and their correspondence to students' specialty are served as the main criterion. Most of the texts of the manuals are taken from original English and American scientific literature.

However, as a lot of researchers note, translation of authentic, foreign-language vocational-oriented texts presents significant difficulties for students of the I-II courses. At the same time, some methodologists propose to reduce the level of complexity, simplifying and adapting the texts set forth by speakers of a foreign language [4]. At the same time, there is an opinion that this way does not help to solve the problem of accessibility of authentic scientific texts for students' understanding. It helps to remove difficulties only during the educational process, but does not help to overcome these difficulties during the self-translation of complex professional texts, both in the educational process and in the future in professional activity [5].

One of the optimal ways of learning to overcome difficulties independently in the process of translating authentic professionally-oriented foreign language texts is the formation of skills using a system of exercises that assures the mastery of the basic receptive dictionary, on this basis the construction of a "potential dictionary", training to understand the structure of various types of sentences, and also the structure of texts as a whole [19].

At the same time, the choice of authentic texts should include analysis of content, logical composition structure and language design. This will reveal the presence of new information for students in texts, increase the motivation for learning a foreign language, highlight the most important components (classifications, wording of concepts or problems, arguments for and against one or another point of view, conclusions, generalizations, etc.) in them, as well as language tools-signals that allow to foresee the further content of the text – words belonging to the category of connectors [2]. Possession of them, according to the researchers, helps to understand semantic links in a text, development of an author's idea, and also provides the depth of understanding of a message in translation.

It is recommended to work on problem words in pre-textual exercises in order to overcome intralinguistic interference. Moreover, at this stage homophone should be presented in writing, and homographs are in sounding. This creates associations between a form of words and their meanings. Then text exercises can teach students to draw on the context.

SUMMARY

Summing up, we note that the translation of authentic texts on physics causes considerable difficulties not only because of the presence of unfamiliar words, both common and terms (i.e., general scientific and narrowly specialized, lexical and grammatical homonymy), but also the use of a large number of formulae and physical and mathematical symbols in scientific literature, as well as lexical units that do not have equivalents in their native language. The foregoing points to the need to continue research in this direction and the importance of developing practical recommendations for overcoming the problem under discussion.

CONCLUSION

To conclude all mentioned above, it's necessary to underline that the following recommendations are of great importance for foreign language teachers at institutes of higher education. They can raise effectiveness of teaching English and can be applied for bachelors' training at any educational level.

CONFLICT OF INTEREST

There is no conflict of interest.

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