LOTHAR HOFFMANN: THE LINGUISTIC ANALYSIS AND TEACHING OF LSP IN THE GERMAN DEMOCRATIC REPUBLIC

0. Whilst traditional philology and language teaching have for a very long time almost exclusively focussed attention on the language of literary prose on the one hand and on everyday conversation on the other, developments over the last 30 years have brought about a constantly increasing interest in the use of languages for special and professional purposes (LSP, LPU). There are many reasons for this general trend: the growing importance of science and technology in nearly all branches of industrial and agricultural production; the rising standard of education promoted by schools, television, radio, newspapers, magazines, and, last but not least, by the enormous output of highly specialized publishing houses; nor should we forget the internationalisation of the most relevant branches of social life by political, technical, economic, and cultural co-operation and collaboration.

One of the immediate results is the demand that the teaching of foreign languages should be in many cases restricted to the needs of occupational or professional communication, i.e. to the respective sub-languages of science and technology. It is no use complaining about the loss to knowledge, occasioned by abandoning the foreign literature, life and institutions component since this was all too often nothing else but a superficial attribute of education in the past. Applied linguists and teachers of foreign languages will be more successful if they face the facts and draw the obvious conclusions.

One of the first conclusions will be that the traditional subjects and consequently the types of linguistic content must be substituted by new subjects and materials. An instructive example of this kind of change can be found in the history of foreign language teaching for special purposes at the universities and technical colleges in the GDR, a process which began exactly 27 years ago.

Since 1951 every student in our country has had to learn two foreign languages, as a general rule Russian and English or French. He must be able to read relevant scientific papers in the original and to take part in a discussion on problems concerning his profession. This is obligatory for undergraduates in medicine, physics, and mathematics, as well as philosophy, history, economics etc.

During the first ten years the selection of linguistic materials for this kind of LSP teaching was mainly ruled by intuition, experience, and good will. At the same time the textbooks were elementary manuals of the respective sciences without any, or with very little, adaptation to the needs of foreign language teaching. Grammatical instruction was treated independently. In spite of these deficiencies, the results were not bad. But this was due to the enthusiasm of teachers and students, not to the perfection of materials and methods. This enthusiasm lacking results would have been, and in some cases was, not satisfactory.

Thus, we had to find valid principles and effective methods first of all for the selection and restriction of the linguistic phenomena to be included in the course, and secondly for their organization (staging and grading).

1. As far as I know, there are four established approaches to LSP: philosophical reflexion, stylistic description, terminological investigation, and statistical analysis.

1.1. Philosophical reflexion is concerned with the question of whether language is an adequate vehicle of ideas or, as Th. H. Savory put it, whether "science is in many ways the natural enemy of language". A pessimistic answer would put an untimely end to my paper and I would nolens volens leave the field to scientists, who use artificial languages, i.e. symbols, formulae etc. Life, however, has proved that natural languages though not fully adequate, are nevertheless an indispensable instrument for scientific and professional thinking, and that they are, to a certain degree, adjustable to the growing needs of science and technology. So we can go on with the second approach.
1.2. To stylistics as a special branch of philology we owe the differential view of languages; and to functional stylistics the classification of styles by their different communicative intentions and ends. One of the styles described by several schools (e.g. Prague, Moscow) which contrasts with bellettristic literature is the scientific style; this comes near to what we call LSP now. The results of functional stylistics are mainly obtained by deductive methods which start from general concepts (more ideal than real) e.g. 'precision', 'conciseness', 'objectivity', 'absence of expressiveness and emotion', and arrive at a catalogue of peculiarities on different language levels which scientific writing does not share with other styles.

The merits of functional stylistics are a) its interest in the functional diversification of language and b) lack of reliability, c) incompleteness, and d) restriction to natural sciences and engineering. Stylistic analysis was mainly applied to the mother tongue of native speakers. Its results were too abstract for the teaching of foreign languages, and sometimes too commonplace. Another serious disadvantage was the lack of complete lists of linguistic elements and patterns that could be used to teach a functional style.

1.3. Investigations into terminology are part of lexicology and lexicography, but also relevant to documentation and automatic information processing. Inductive methods are preferred. In most cases terminologists have not started out from philology or linguistics, but from engineering and the natural sciences. Progress has been made in the national and international standardization of terminologies. Committees have been constituted and centres set up to direct these activities (e.g. Infoterm in Vienna).

With regard to LSP, the elaboration and dissemination of a general theory of terminology would be of inestimable help. The same is true of concrete models of word formation and term creation, as we shall see later. What must be criticized, however, is the identification of LSP with terminology, i.e. the reduction of LSP to the lexical level and here again to word formation and mutual exchange between "general language" and sublanguages. The isolation of words results in an obvious neglect of syntactic features, which are central to LSP teaching.

1.4. The statistical analysis of LSP on the lexicological as well as on the syntactic level seems to serve the needs of foreign language teaching best of all, if it is combined with a systematic approach to terminological and syntactic systems. In this paper I will try to show the advantages of this method, the most important of which is the unbiased selection of linguistic content by exact mathematical procedures.

2. Before starting on linguistic analysis, i.e. on the study and interpretation of the lexicological, morphological, syntactic, compositional, and other distinctive features of LSP, at least a minimum of sociolinguistic work had to be done in order to identify and define the objectives of foreign language teaching at the university and further education level. The main task was to give a survey of the language needs in university departments, schools of technology, research centres, industrial enterprises, cooperative farms, trade organizations, and other socio-communicational spheres where young people enter a profession or occupation after passing their examinations. In some cases inquiries were made through questionnaires (Dresden, Potschok), but the most efficient way was through direct contact with representatives of the different fields of professional activity, or with former students who knew by their own experience where foreign language lessons had been useful and where they had failed. The most important points of interest in the questionnaires as well as in the personal interviews were: a) the relevance of certain languages (Russian, English, French, Spanish, Polish, Czech et al.); b) the skills required (reading, writing; hearing, speaking; but also translating, abstracting, indexing etc.); c) the nature of the predominant text type (manuals, guides, journals, reports, directives, agreements, patents etc.).

It is true that not all important socio-communicational spheres have been examined as yet, but those inspected to date have proved to have some basic characteristics in common which may serve as the fundamentals for a unified and at the same time variable system of foreign language teaching. This system may be called unified, because its levels, branches, and topics are harmonized with one another and brought into continuity. Vari-
bility is effected by the relative autonomy of levels and subjects.

The teaching of LSP according to this system proceeds from level I to level II and on to level III corresponding to the terminal skills and linguistic content. These levels are determined by communicative needs and proficiencies of different degrees. Levels I and II are subdivided into branches a and b; branch a emphasizes hearing and speaking, branch b reading and translating. Thus specific professional demands are met. Finally, beginning with level II a rough division into seven professional categories and groups of subjects is made:

Category 1 for politicians, civil servants, business executives, and journalists: politics, economics, management, affairs of state, administration in law, civilization and culture, education.

Category 2 for artists (poets, writers, painters etc.), officials working in the Fine Arts, and persons who have a general interest in learning languages: cultural policy, literature, painting, music, architecture, history, geography, tourism.

Category 3 for personnel in foreign trade, home trade, traffic, travel agencies, gastronomy: economics, trade, transport, traffic, travelling, administration of hotels and restaurants, service, cooking.

Category 4 for industrial staff: electrical and electronic engineering, data processing, power supply, metallurgy, chemical industries, architecture mechanical engineering, precision mechanics and optics.

Category 5 for employees in agriculture, cattle breeding, and food production: cultivation and utilization of plants, breeding and utilization of animals, amelioration, agricultural chemistry, agricultural engineering, forestry.

Category 6 for men of science: social sciences, natural sciences, engineering, medicine.

Category 7 for the armed forces, police, customs officers: external and internal security.

Level Ia is generally reached by secondary schools at the end of the 12th class (8 years Russian, 4 years English or French). University and college students normally arrive at a level IIb towards the end of the 2nd or at level IIa after the 3rd year. Level IIa is obligatory for taking a doctor's degree. Level III has up to now only exceptionally been attained.

We shall not examine any further details of organization. It may be interesting, however, to detail those skills to be developed at the IIb level according to the predominant future needs of university students.

The student is expected: a) to read texts on his special subject in the original without using dictionaries, grammars or other books of reference, and give a summary in his mother tongue; b) to translate authentic scientific writing into his own language resorting, if necessary, to dictionaries and similar aids; c) to understand (through hearing) short reports and discussions relating to everyday life, professional work, economics, politics, and culture; d) to express his own ideas concerning personal affairs, scientific activities, economics, politics, and culture on a limited number of topics; e) to find adequate tagmemes, starting from well-known situations that are described in his mother tongue (Sachverhalte) and by consulting reference books. In order to satisfy these requirements the student should have knowledge of about 5000 lexical units (3000 of which may constitute passive vocabulary, i.e. for comprehension only) and of standard grammar.

Compared with IIb, in the Ila branch, hearing and speaking play a far more important part, whilst translating is kept in the background.
We have so far defined the levels, branches, and categories as well as subjects and skills, but nothing has been said about the linguistic content of LSP teaching. Linguistic content should, therefore, constitute our next point of interest.

3. The linguistic elements and patterns of LSP in textbooks, tapes, slides, and other forms of presentation are isolated by structural, semantic, statistical, comparative, and functional methods applied to texts typical of written or oral communication. Structural aspects are relevant to the definition of lexical and grammatical units (words, word forms, word groups, phrases, sentences). Semantic analysis affords the limitation of meaning in terminological systems. Statistical linguistics does not only bring to light the frequency of elements and patterns, but also proves their reliability and influence on the introduction and repetition of linguistic phenomena. The comparison of foreign language and mother tongue is one of the most important premises of the evaluation of teaching materials. Functional methods, last but not least, try to ascertain the communicative appropriateness of linguistic expressions.

Complex linguistic analysis as a necessary premise to the designing of LSP teaching is illustrated in fig. 1.

The peculiarities of LSP texts are first and foremost of a quantitative nature. It is the significantly frequent occurrence of certain speech elements, forms, or structures that characterizes scientific writing and spoken discourse. As a consequence statistical methods play an important role in selecting an inventory for teaching purposes.

Investigations into the sublanguages of science and technology have proved that the distinctive features of LSP are not equally evident at all linguistic levels. It is the word and the phrase levels that yield the best results, i.e. lists of typical lexical and syntactical items which may serve as a highly effective teaching/learning minimum.

3.1. From our analysis of English scientific texts we know that the 1178 most frequent words in medical literature constitute about 85 per cent of any medical text; in physics 1659 words cover 86 per cent on an average; for mathematics 92 per cent text coverage corresponds to 1114 words. French frequency lists show the following figures: medicine - 1199/74%; physics - 1190/81%; mathematics - 867/85%. In Russian and other languages the text coverage of the 1100-1200 most frequent words ranges from 80 to 90 per cent or even more. The effectiveness of such a basic vocabulary is shown by the fact that international terminology and words derived from common roots are comprehensible to most readers of scientific papers. Moreover, illustrations, diagrams, tables, figures, formulae, and other non-linguistic means of expression and demonstration facilitate the understanding of LSP. Even if information theory is right in affirming that the frequency of speech elements is in inverse proportion to the semantic value of the elements, there is no denying the fact that all lexical units in the uppermost frequency zone must be learnt, because they are, so to speak, "constitutive" with respect to any text, i.e. essential to predication.

Word frequency counts marked the very beginning of linguistic investigations into the sublanguages of science and technology in the GDR and particularly at the university of Leipzig. Later on they were completed by catalogues of basic terminologies or terminology standards published in the USSR for Russian sublanguages. Less has been done for English, French and other languages.

Much has been written about our Russian-English-French frequency dictionaries. Let me only add that our book-shops are now selling: the 4th edition of medicine (1978), the 3rd edition of physics (1976), and the 1st editions of chemistry (1973), mathematics (1976), architecture (1976), and cattle-breeding (1978). Frequency lists of many other fields of scientific work are available in theses, machine or computer print only. They are used by devisers of textbooks and other aids, as well as by teachers, terminologists etc. Some of these word lists have been published by colleges that need them for their own training courses, e.g. pedagogics and automobile engineering (Russian and English). In 1980 a basic vocabulary of social sciences comprising philosophy, theory of communism, political economy, and historiography (1872 Russian and 1544 English words) will come out as a hybrid of a frequency and an alphabetical dictionary. In the 80's
our counts will be extended to new fields far beyond the traditional university sphere.

3.2. In addition to word frequency an important lexical aspect is the productivity of word formation. Here, statistical methods bring to light frequent patterns and constructive elements. As a result of our analysis of texts (frequency of occurrence) and terminological dictionaries (frequency of patterns) we have arrived at a quantitative classification of suffixes for derivatives, and combinations in technical terms consisting of more than one word. It is again only a small number of suffixes that are used to derive new words from existing roots, so that a well-founded selection and restriction for teaching/learning purposes becomes possible.

Most productive, for example, in English chemical terminology are such suffixes as -ion (reaction), -ation (oxidation), -ity (viscosity), -ment (arrangement), -ure (procedure), -ence (difference), -er (layer); as their French correlates we find -ion (solution), -ure (chlorure), -eur (vapeur), -ité (quantité), -ide (acide) etc. The importance of restrictions of this kind becomes plausible, when we read in a standard grammar published by the Academy of Sciences in Moscow that Russian has about 150 suffixes for substantives only. The sublanguages of science and technology, however, as was shown by our analysis of productivity and occurrence, prefer not more than 12 of these.

For some sublanguages the most frequent and productive affixes have been rendered accessible in our frequency dictionaries, as to others they are stored in degree papers.

3.3. But derivation is not the only way to satisfy the constantly growing needs of term creation. It prevails in abstract sciences, i.e. in mathematics. Technical and other applied sciences must often give a name to complex concepts or things with more than one characteristic. Under these conditions a single word, be it even a compound, is not sufficient. Therefore, in some languages, e.g. Russian, English, and French, terms tend to approximate to word groups or nominal phrases. Very popular are amalgamations of substantives and adjectives (peremennyj tok; idle motion; surcharge mobile) and of substantives in combination with or without prepositions (e.g. comande d'eau à piston). These are comparatively short and simple terms. Examples of greater length and complication may be taken from my book "Kommunikationsmittel Fachsprache" (pp. 324-332). Sometimes these terms are similar to paraphrases and are thus representative of an early stage in terminological development (compare the Russian concatenation 'mnogofaznyj kolklektornyj dvigatelj' parallel'nogo vozbuždenija s dvojnym komplektom űbitel'- AAS(AS)g(AS)pSg). In general these impractical and often curious strings are gradually reduced to an appropriate length (e.g. sinchronnyj generator peremennogo toka - sinchronnyj generator, priemnik na tranzistorach - tranzistoryj priemnik, antena dipol'nogo tipa - dipol'naja antena etc.). Now this again is the point of applied linguistics. LSP teaching could not possibly take into consideration the thousands of real terms as lexical units that fill voluminous dictionaries. One promising way, however, is to call attention to certain distributive and structural patterns of word combination. What has already been mentioned with reference to affixation is even truer of the syntactic and semantic relations between words: languages are tremendously rich in their resources, but they use them sparingly, maybe economically. Our linguo-statistical samples have provided the following facts. In terminological dictionaries of several Russian sublanguages we found more than 230 structures differing in length and in the dependency of their constituents on one another (architecture 231, railway engineering 277, electrical and electronic engineering 319). But only 10 of them accounted for more than 80 per cent of all real terms of this type (86.6; 81.3; 88.0). The rest were far less frequent or not very creative, i.e. a great many of these patterns were realized only once or twice.

Thus frequency counts of terminological patterns have proved to be a third important aid for LSP teaching on the lexicological level, affording further selection and restriction on the one hand, but additional syntactic and semantic information compared with frequency dictionaries of isolated lexical units on the other. The results obtained up to now are representative of Russian scientific writing and indicative of English scientific prose. Other languages are still unexplored. As a general tendency a terminological optimum of 2, 3 or maximum 4 constituents has been observed. All patterns excee-
ding this extension should be regarded as terminological paraphrases, not as genuine terms.

3.4. Two of the by-products of our LSP lexico-statistics were frequency counts of word forms and morphological categories. They yielded good results for Russian, because of its rich inflexional system, but were less instructive for English and French. On the whole, new insights were confined to some forms of the verb. All other data confirmed a lot of statements made by functional stylistics: the high frequency of substantives and adjectives in the singular, the predominance of the 3rd person and impersonal forms over the 1st and 2nd person, a predilection for the passive voice, the importance of participles and gerunds, and similar distinctive features in scientific style which have no direct influence on language teaching, because of the uselessness of disintegrating morphological systems in order to select single categories and forms for the purpose of teaching/learning. Nevertheless, stylistic statements have been made more reliable by exact relative frequencies which can contribute to automatic language data processing and related schemes.

3.5. In discussing patterns of complex terms we have already crossed the border line between lexicology and syntax. At the syntactic level the peculiarities of LSP can be observed best in phrase structures. Nominal phrases in scientific texts are marked by greater complexity and variability of constituents expressing the necessity of high precision by different kinds of attributes. In verbal phrases analogous trends are due to the manifold means of adverbialisation unknown in belletristic literature.

Language teaching will certainly not be satisfied by such a rough and ready characterization. Thus, frequency lists have been supplied for 28 Russian nominal and 11 verbal phrase structures in a comparative study of medical texts on the one hand and novels or short stories on the other, so that students can use them as a sort of syntactic minimum which is sufficient to understand all typical sentences of medical prose. Most of these are valid for other sublanguages, too. As for English and French nothing definite can be said as yet, since the phrase level has not yet been adequately researched.

3.6. First results have been obtained in sentence analysis. The most frequent types of sentence are well-known. It is a fact that nearly all sentences of scientific writing are declarative sentences, whilst interrogative, imperative and exclamatory sentences are extremely rare or confined to certain genres or sorts of texts (didactic papers, prescriptions etc.). But there are also differences in structure: at the top of the frequency list we find simple extended sentences, complex sentences with one subordinate clause, and compound sentences with two coordinate clauses. In some sublanguages they account for 70 per cent of all structures; none of the other variants go beyond 4 per cent.

Further investigation in subordinate clauses would show wide functional differences between sublanguages. The statistical distribution of adverbial clauses of time, place, cause, purpose, condition, concession, result, manner etc. is far from universal. In mathematics, for instance, clauses of condition come to an absolute majority; in historiography time and place take priority.

3.7. A comparatively new sphere of interest in LSP on the sentence level is word order in categories of functional sentence perspective. Its importance is based on the unequal distribution of information in sentences and pieces of text. In some languages, e.g. German and Russian, which are said to have a rather free word order it is an important but hitherto often neglected criterion of adequate linguistic proficiency. Representatives of the older functional school were in error when they declared that nearly all sentences in scientific writing follow the normal and "logical" order: subject - predicate - object, while other patterns are an exception and mainly used in literary genres, which aim at extraordinary stylistic or emotional effects.

The study of six basic models of word order and theme-theme constellation in Russian mathematical, physical, chemical, philosophical and historiographical papers has brought to light a very specific frequency distribution which is, above all, determined by the
differing communicative needs of certain scientific genres (manuals, textbooks, journals, prescriptions etc.), not by differing subjects (mathematics, physics, chemistry, philosophy, historiography). Accordingly, in some sublanguages "deviations" from the so-called normal order amount to one fourth or even one third of all sampled sentences.

At present, this rather rough approach to functional sentence perspective is being refined. More attention will be paid to an improved classification of genres and to relations between theme and rheme above the sentence level (throughout the whole of the text).

3.8. It is now time to turn from discussion of what has been done and what should be done at the lexical and syntactic levels to define the distinctive features of LSP. We are well aware of the fact that our survey was far from complete. The same is true of the books and papers published in the past. But these efforts may at least be regarded as a beginning and as a framework that is to be filled up in course of time.

Let me now add a few words about how the outcome of linguistic analysis is applied to the production of textbooks and other teaching/learning aids.

4. The introduction of frequent linguistic elements and patterns during an early period of language teaching significantly promotes motivation. Although "motivation is generally no problem with LPU studies: the adult learner has chosen the course himself and his successful progress is essential to his career, ..., the teacher should not, however, take this motivation for granted ..." (shortened quotation from Professor M. Gorosch). Students will recognize the immediate practical use of these high frequency units which constitute the larger part of any text or speech act. They will be more successful within a shorter time. At a later period concentration will be focussed on the acquisition of the special terminologies which change from situation to situation in a professional context. Besides this, linguistic skills will develop more easily on linguistic content with a high rate of reoccurrence.

4.1. Let us now examine a concrete case showing how the results yielded by LSP analysis are converted into teaching materials. It may be that a method leading from frequency dictionaries and lexical minima to vocabularies, preceding exercises and reading passages in textbooks will be the most instructive one, since the systematic introduction, acquisition, and repetition of the relevant vocabulary is one of the prerequisites of progress in language teaching. Moreover, there will be an opportunity to demonstrate the necessity of correlation, coordination, and continuity in the whole process of language teaching and learning from primary schools to colleges and universities as well as in teaching materials.

When, as a first step, the topics to be treated in the course are fixed according to the requirements of the professional context aimed at, and when, as a second step, texts representative of these topics are found, the relevant vocabulary is assigned to every lesson and at once arranged with respect to the whole teaching material, so that the first occurrence of every word, its repetitions and its actual meanings in all contextual distributions are known throughout all stages of production; every word occurring and reoccurring in the texts is classified:

Class A: known from primary or secondary school or from preceding lessons and registered for reinforcement only.

Class B: derivable by the rules of word formation and combination.

Class C: comprehensible owing to identity or similarity in foreign language and mother tongue (international terms, loan words).

Class D: completely new.

In the teaching materials these classes of different didactic weight are introduced separately, so that every student can see at first glance what he should already know, what is intelligible without great endeavour, and what is really new and worth memorizing. Accordingly, the extensiveness and intensity of exercises rise from A to D. The
completely new words are taken particular care of not only in textbooks, but also in audio-visual aids. They are repeated single and in co-occurrence 10 times at least, including combined lexico-grammatical exercises.

Special exercises have been contrived to make the models and means of word formation known and to encourage the decoding of derivatives, compounds, and complex terms. International terms, in addition, enlarge text comprehension to a high degree. Finally, words known from school must be connected with new contextual meanings in many cases to avoid a particular kind of "false friends".

Such a classification is a reliable measure of growth in vocabulary, i.e. it enables teachers and students to assess the number of words that are essential for treating a new topic in professional context and which must, therefore, be learnt. With regard to the system of education in the GDR it has been proved that a student having passed through secondary school (12 classes) will find in scientific texts of 300 words length about 12 actually new words at the beginning and - on condition of a systematic vocabulary acquisition - 6 unknown lexical units at the end of his basic LSP course, i.e. after a year (and a half). These new words are not frequent in general language, but indispensable to the understanding of professional contexts and specific topics. They usually belong to the class of technical terms which are sometimes also international terms or derivatives. Semantic keywords of this kind must, of course, be learnt too, not on account of their frequency of occurrence, but because they are elements of the terminological system that reflects the conceptual system of the respective discipline, or because of their topical relevance. The importance of rare words is assessed by investigations into the structure of terminological systems, whereby their place (central or peripheral) is revealed.

By the way, progress in reading foreign texts is first of all recognized by teachers and by students, when unknown words disappear more and more and the dictionary loses part of its function. Just this is the aim of what has been described before: efficient selection and handling of the LSP vocabulary which, at the same time, reinforces motivation.

4.2 The organization of grammar in teaching materials cannot be dealt with in this paper. It is as substantial as the lexico-didactic problem, and frequency counts of morphological categories, word forms, phrase and sentence patterns as well as the permutations in word order mentioned above (3.5.-3.7.) play an important role in this context. But, of course, the systematic and the structural aspects are much more important here. I hope there will be an opportunity to discuss these elsewhere.

4.3 In this last section, I would like to outline the integrated complex of teaching materials for LSP (Russian and English) that is currently used in the GDR. For the sake of completeness we will survey all parts of the system from school down to quite specific institutions. It must be, however, said that - as in 2. - our main interest will be concentrated on textbooks and audio-visual aids of the IIb university level because in this domain production has reached an advanced stage, whilst school materials are taken as they come, and those for highest levels must be based on IIb. The whole complex is illustrated in fig. 2.

4.3.1 The centre represents the so-called dynamic minimum which is, at once, part of all peripheral materials and something more. We call it a minimum, because it comprises, indeed, only a small number of linguistic elements and patterns which are later on completed in agreement with more and more specific need. The minimum is called dynamic, because its main function is to encourage speech activities and thereby develop skills that are the rudiments of future professional communication. Such a minimum contains the most frequent elements and the most important patterns of the "general language" and some words necessary to treat simple topics. The dynamic minimum is a kind of basic teaching material (though not in the sense of Basic English) for all learners at the initial stage.
Around this centre can be arranged a theoretically infinite number of peripheral teaching materials. Let us assume three peripheral zones corresponding to the three stages of education: the first still falls under school; the second is part of academic studies; the third "vanishes" into individual adult qualification.

4.3.2 The teaching materials of the first zone may be roughly subdivided to correspond to the seven categories and groups of subjects mentioned above (2.), although the professional level must still be adapted to elementary demands, specification limited and topics added to meet the interest of young people. Texts and exercises will not necessarily take the form of books; loose-leaf systems are more appropriate, more economical, and easier to keep up to date.

4.3.3 The second zone is the proper zone of LSP. It is the stage of diversity in education and, consequently, also the suitable stage for diversification in teaching materials. The seven all-round socio-communicational groups are now broken down into a mass of concrete "guilds", all of them with a definite professional context expressed in LSP. Topics of everyday life keep in the background; they are replaced by 'talking shop'. The first place, however, is taken by the reading of an enormous amount of all kinds of scientific and technological texts.

Texts should not and indeed cannot be highly specific from the very beginning of the tertiary level course. Otherwise difficulties would arise not from language, but from the subject itself. Thus, the teaching materials of the IIB university level rest upon the same fundamental principles that determine the form of introductory lessons in the mother tongue. This is the shortest way to lay the basis of further individual qualifications in LSP. The linguistic and didactic advantage of what is at the same time a professional disadvantage is that all students of one and the same subject at all universities and colleges where this subject is taught are supplied with one and the same teaching materials by a publishing house. By 1980 these materials will be available in Russian and English for physics, chemistry, mathematics, medicine, agriculture, cattle-breeding (stock farming), architecture, electrical engineering, mechanical engineering and navigation.

4.3.4 Individual qualifications and the absence of teaching materials are the characteristics of the third zone or stage which begins in the second academic year and involves the exploitation of books, journals and other materials that are used by native speakers. Full professional proficiency, however, cannot be achieved through academic studies. This is true as much for the subject as for mastery of LSP. Therefore, our influence and responsibility end in general long before the analysis and teaching of LSP bear fruit. Moreover, constant progress and change in science and technology imply a goal of continuous improvement. In my view, the permanent discrepancy between proficiencies and needs caused by social, scientific and technological development is a motivating force for learners as well as for teachers.

5. Concluding this rather fragmentary report I want to say that shortly before writing this paper I read professor Gorosch's manifesto published in CEBAL No. 4. As far as I can see, we are on common ground. There may be differences in the general context, in our systems of education, and in our mother tongues, to be brief: in the starting points. But what we have in common are our goals, our methods, and our enthusiasm.

Literature:
Texte d. schrl. u. mundl. Kommunikation

Ermittlung d. Häufigkeit
Vergleich m.d. Muttersprache
Überprüfung d. Angemessenheit
Wortbildung (prod. Modelle)
Wortbedeutung (Stellg. im term. System)
Wortform (Funktion)
Wortverbindung (Muster)
Satz (Muster)

Lexik

Grammatik

Lex. u. gramm. Material f.d. Ausbildung (Minimum)

Psychologie
Lerntheorie
Linguodidaktik
Methodik

Lehrmittelkomplex

Abb.1