

**ENGLISH LANGUAGE COURSE  
FOR 'HARD SCIENCE' RESEARCHERS:  
DESIGN AND APPLICATION**

**N.L. Nikulshina<sup>1</sup>, R.P. Millrood<sup>2</sup>**

*Department of Foreign Languages, TSTU (1);  
English Language Teaching Department, TSU named after G.R. Derzhavin (2)*

*Presented by Professor M.N. Makeyeva  
and a member of the Editorial Board Professor V.I. Konovalov*

**Key words and phrases:** course design; discourse and learning-centred approaches; English for specific purposes; language descriptions; learning theories; needs analysis; research discourse; syllabus design; target situation.

**Abstract:** The paper is aimed at describing English language course for 'hard science' researchers in terms of a framework of its basic components and the main factors affecting its design: needs analysis, ways of describing languages and models of learning. Special attention is paid to defining a current concept of needs and needs analysis, differentiating between target and learning needs. Reasoning in favour of an integrated discourse/task-based/skills approach to a course design is given.

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**INTRODUCTION**

The university teacher of English as a foreign language is faced increasingly with demand from the specialists for courses to meet their specific requirements. This is due to the status of English as the key to the international currencies of science, technology and education. So the aim of this paper is to highlight what is involved in designing English for science researchers and to share author's experience in developing such a course at Tambov State Technical University (TSTU).

For the last few decades course designers have devised various frameworks that break down the process of course development into components and sub-processes [3, 4, 5, 9, 11]. However, before setting about this problem, let's shortly comment on what English for «hard science» researchers is, its place within the context of English language (EL) teaching and the reasons for its development.

English for «hard science» researchers is just one of the many individual courses within English for Specific Purposes (ESP). ESP, in its turn, is the branch of English as a Foreign Language, which Hutchinson and Waters propose to define not by showing what it is but rather by showing what it isn't:

- it is not a special form of the language, different in kind from other forms, though, of course, there are some features which can be identified as typical of a particular context of use;
- it is not a matter of special terminology or special grammar;
- it is not a special form of language teaching different from its basic principles of effective and efficient learning [5].

But what is really 'special' in ESP is that it is an approach to language learning which is based on learner needs. It can be argued that this should be the starting point to any course. The answer to this reasonable argument is that it is not the existence of a

need as such or the nature of the need which distinguishes ESP course from any other course but rather the awareness of a need.

English language course for science researchers at TSTU is basically designed for engineering postgraduates who generally do not constitute a homogeneous group in terms of their background, interests, specialised areas of research or proficiency in English. However, what they really have in common is the awareness of their professionally oriented communicative needs determined by specific nature of their research activity and comprising such things as presenting information on their latest scientific theoretical and experimental achievements (through either writing scientific papers and reports in English or oral presentations at international conferences and symposia), search, accumulation and extension of professionally relevant knowledge in the process of both direct and indirect communication with foreign colleagues, via Internet, etc.

Hence, university English language teachers who are charged with responsibility of designing specialised courses for science researchers should take into consideration the following aspects:

- emergence of a new generation of young scientists who are well aware of their needs for the English language as a means of promoting their scientific ideas;
- new trends in the study of language which shifted attention away from the formal features of language usage to discovering the ways in which language is actually used in real communication, i.e. to discourse;
- developments in the field of educational psychology which emphasized the distinct relevance of the English course to the learners' needs which could improve their motivation.

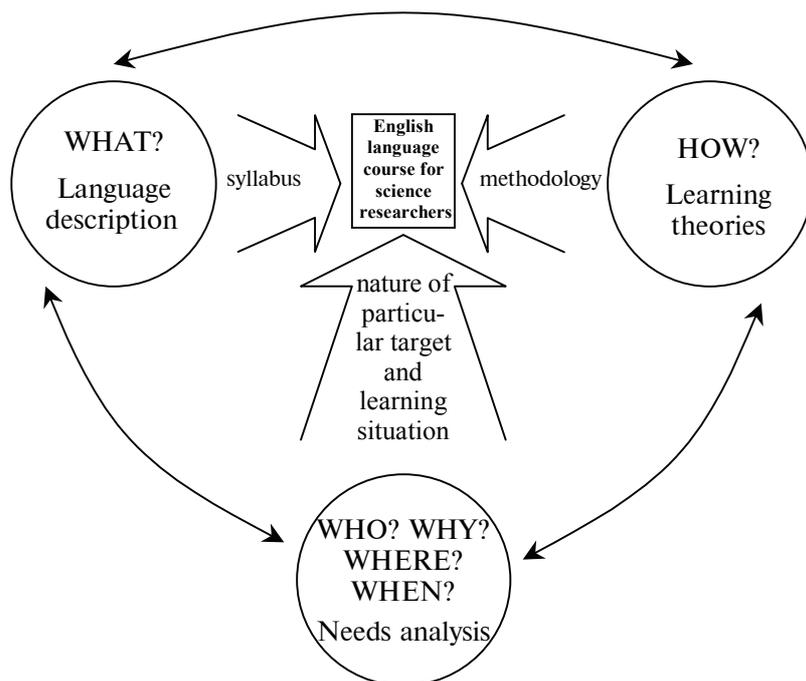
## **BASIC TECHNIQUES IN EL COURSE DESIGN FOR SCIENCE RESEARCHERS**

### **Defining course design and its basic determinants**

Now let's proceed to the main subject of the paper, i.e. the basic techniques in course design for science researchers. It seems useful to start with the definition of a course design as "a process by which the raw data about a learning need is interpreted in order to produce an integrated series of teaching-learning experiences, whose ultimate aim is to lead the learners to a particular state of knowledge" [5: 65]. It is obviously a matter of asking questions in order to provide a basis for subsequent processes: syllabus design → materials writing → classroom teaching → evaluation. Some of these questions are: *Why* does the specialist need to learn? *Who* is going to be involved in the process? *When* and *where* is the learning to take place? *What* does the specialist need to learn? *What* aspects of language will be needed and how will they be described? *What* level of proficiency must be achieved? *How* will the learning be achieved? The answers to these and apparent questions can be considered within the following main factors affecting course design: *needs analysis, language descriptions and learning theories*. The interdependence of the above mentioned factors in the process of course design is presented schematically in Fig. 1.

### **Needs analysis**

The starting point of the English language course design for science researchers is needs analysis. That needs analysis is the corner stone of ESP has been unanimously recognized for the last few decades [1, 9, 10]. However, one difference between now and the 1960s is what we understand by the concept of *needs* and *needs analysis*. There exist a lot of confusing terms: needs are described as *objective* and *subjective, perceived* and *felt, target situation/goal oriented* and *process-oriented* and *product-*



**Fig. 1 Factors affecting English language course design for science researchers**

oriented [1]; in addition, *necessities, wants and lacks* are distinguished within *target needs* [5]. Each of these terms reflects a different philosophy or educational value.

Objective and perceived needs are derived by outsiders from facts, from what is known and can be verified, while subjective and felt needs are derived from insiders and correspond to cognitive and affective factors. Similarly, product-oriented needs derive from the goal or target situation and process-oriented needs derive from the learning situation [4].

These pairs can be seen as corresponding to a target situation analysis (TSA) and a learning situation analysis (LSA); a third component, i.e. what learners already know - to a present situation analysis (PSA), from which we can deduce their lacks.

Thus, a TSA includes objective, perceived and product-oriented needs; an LSA includes subjective, felt and process-oriented needs; a PSA estimates strengths and weaknesses in language, skills, learning experiences. To establish a workable course design, means analysis that looks at the environment in which a course will be run is suggested as an adjunct to needs analysis.

It seems reasonable to support the idea of T. Dudley-Evans [4: 125] to treat a current concept of needs analysis as that including aspects of all these approaches and encompassing determining:

A. professional information about the learners: the tasks and activities learners are/will be using English for – *target situation analysis* and *objective needs*;

B. personal information about the learners: factors which may affect the way they learn such as previous learning experiences, cultural information, reasons for attending the course and expectations of it, attitude to English - *wants, means, subjective needs*;

C. English language information about learners: what their current skills and language use are – *present situation analysis* - which allows us to assess (D);

D. the learners' lacks: the gap between (C) and (A) – *lacks*;

E. language learning information: effective ways of learning the skills and language in (D) – *learning needs*;

F. professional communication information about (A): knowledge of how language and skills are used in the target situation – *linguistic analysis, discourse analysis, genre analysis*;

G. what is wanted from the course;

H. information about the environment in which the course will be run – *means analysis*.

So, the aim of the needs analysis in the broad sense of this term is to know learners as people, as language users and as language learners; to know how language learning and skills learning can be maximized for a given learner group; and finally to know the target situations and learning environment so that we can interpret the data appropriately [4: 126].

Who provides information about needs? In our case needs analysis includes input from engineering postgraduates as well as from the various people connected to the course, such as English language teachers, ESP practitioners, University administration, scientific advisors, University professors, ex-postgraduates, documents relevant to the field, colleagues, ESP research.

To collect the main data for needs analysis we used a variety of methods: questionnaires, checklists, language tests, structured interviews, self-assessments, discussions, observations. An example of a six-section pre-course information questionnaire for engineering postgraduates is given in Appendix.

Pre-course needs analysis conducted in a group of postgraduates at TSTU in 2002 provided us with the following data:

1. *Personal information*. The average age of the participants of the group is 22. All of them took postgraduate courses right after their graduating from the engineering faculties of TSTU, so they hardly have any research experience. Their scientific interests vary widely and include devices and methods of control and measurements, building materials, agricultural mechanization, physical-mechanical properties of fluids, methods of environmental control, CAD/CAM, powder metallurgy, processes and apparatuses for chemical manufacture, etc. The main reason for attending the course is an exam in English necessary for Ph.D.

2. *Professional information*. A range of activities in which English is likely to be used includes: search for relevant scientific information on the subject either by reading English-medium journal articles, monographs, proceedings of the conferences or via Internet; presenting and exchange of information on the latest achievements either through writing scientific articles, abstracts, surveys, reports for publication or oral presentations at the scientific conferences as well as participating in the international projects.

3. *English language information about learners*. The use of English in current activity of the learners is restricted mainly to reading technical or computer manuals, software documentation, e-mail correspondence, watching educational programs, listening music. The postgraduates themselves evaluate their level of English knowledge, speaking and listening skills rather low. They feel particularly weak in productive writing, but much stronger in reading sub-skills such as reading for gist, for extracting specific information or information transfer.

4. *The learners lacks*. To be effectively included in the world scientific community science researchers need to be aware of the distinctive features of research discourse, its basic genre and rhetoric models as well as social and cultural contexts of language use.

5. *Language learning information*. Lack of common research areas among postgraduates means that talks, explanations and discussions on any particular research topic are given to people who are mainly interested non-specialists. What is missing is the situation where everyone is an 'expert' and where some informed discussion about the subject can take place. As a way of creating a number of English situations where all

postgraduates could approach a topic as equals, we decided to look for activities that meet the requirements of various interests in the group.

These turned out to be the major methodological and procedural steps of any scientific activity: specification of the object of the research, studying known facts about the object, coming up with the problem, specification of the subject, describing the goal of the research, setting the tasks (objectives), formulating the hypothesis (moving a preliminary supposition), constructing a plan of research (devising strategies), carrying out the plan being corrected in the course of the research, checking the hypothesis (assessment of the results), summarizing the results, determining application areas for the solution found. This genetic succession of research stages inevitably finds its manifestation in primary genres structures of research discourse (such as an article, monograph, dissertation) and can be used as a basis for syllabus specifications in the process of course design for science researchers.

### **Language descriptions and learning theories in the process of curriculum design**

Now let's proceed to the other two factors affecting English language course design for science researchers - *language descriptions* and *learning theories* – which are directly realised in a course *curriculum* being its basic components. It should be noted here that we make a clear distinction between the notions of a *curriculum* and a *syllabus* [10]. A course curriculum is defined as a document which contains a broad description of general goals by indicating an overall educational philosophy which applies together with a theoretical orientation to language and language learning. A syllabus is a more detailed and operational statement of teaching and learning elements which translates the philosophy of the curriculum into a series of planned steps towards more narrowly defined objectives at each level [3, 13]. An important reason for differentiating between the two is that a single curriculum can be the basis for developing a variety of syllabuses which are concerned with locally defined audiences, particular needs, and intermediate objectives. While a course design produces a curriculum, a syllabus results in the course implementation.

An educational orientation may be compatible with one or more linguistic and language-learning theories. Thus, for example, the *behaviouristic* view is an educational-psychological philosophy which is compatible with a structural view of language and a stimulus-response view about human learning. The *rational-cognitive* orientation is reflected in the views of transformational-generative linguists and is associated with the cognitive code approach to language learning.

However, structuralism with its emphasis on a finite set of rules lends itself more naturally to a cognitive approach which stresses the importance of rules. A functional description, on the other hand, lacks a systematic grammar, so might be thought to fit better with a behaviouristic view. The *humanistic* orientation is closely associated with the communicative view of language and an affective view of learning.

To design an effective course for science researchers it seems reasonable to choose an interactive view on the language. It sees the language as a vehicle for interpersonal communication and for the performance of social functions between individuals. Interactional language can be found and studied in the communicative discourse [12: 16-17].

The term “discourse” means a stretch of spoken or written language produced for communicative purposes. Discourse as a pattern of verbal behaviour consists in unfolding an idea into text. While a text is a complete and meaningful result and product of communication, discourse is organization and realisation of the communication process [7: 42].

Using the language for communicating one's research ideas and findings is known as research discourse. Research discourse has a number of specific features that make it different to other registers:

- a sense of potential audience;
- transparent statement of purpose;
- clearly marked steps of research;
- a plan of presenting research ideas and findings;
- adequate paragraphing with each paragraph containing only one idea;
- convincing (supported by previously introduced data) conclusion;
- cohesion and coherence of the text;
- technical (belonging to the field) terminology;
- grammar consistent with the norms of written English [8: 127].

### **Traditional approaches to course design**

To design a syllabus a course designer usually makes his/her choice in favour of one of the existing approaches to course design: *language-centred*, *skills-centred* or *learning-centred*. Let's compare them from the standpoint of their essence, sequence of steps being developed, advantages and disadvantages.

The first type, *the language-centred approach*, is particularly prevalent in ESP. It aims at drawing as direct a connection as possible between the analysis of the target situation and the content of the ESP course. The sequence of steps involved is:

identifying learners' target situation → selecting theoretical views of language → identifying linguistic features of target situation → creating a syllabus → materials design to exemplify syllabus items → evaluation procedures to test acquisition of syllabus items.

Logical and straightforward as it may seem, this approach, however, has some shortages:

- the learner is simply used as a means of identifying a restricted area of the language taught, he/she plays no further role in the process;
- such an approach is static and inflexible being unable to take into consideration the contradictions and conflicts occurring in the process of teaching;
- the systematic analysis and presentation of language data inherent in this approach does not, however, automatically produce the systematic learning in the learner;
- data produced by a needs analysis are not taken into account.

The second type of approach to ESP, *the skills-centred one*, is both theoretically and pragmatically grounded. Its basic theoretical hypothesis is that underlying any language behaviour are certain skills and strategies, which the learner uses in order to produce or comprehend discourse. Its basic pragmatic basis is that ESP course is viewed as a process-oriented rather than goal-oriented course which implies that ESP course and target situation are seen "as a continuum of constantly developing degrees of proficiency with no cut-off point of success or failure" [5: 70].

The sequence of steps is as follows:

identifying target situation → analysing skills/strategies required to cope in target situation (bearing in mind theoretical views of language and learning) → writing a syllabus → selecting texts and writing exercises to focus on skills/strategies in syllabus → evaluation procedures which require the use of skills/strategies in syllabus.

The skills-centred model claims to take the learner more into account than the language-centred model for it views language in terms of how the mind of the learner processes it rather than an entity in itself. Besides it frames its objectives in 'open-ended terms', so enabling learners to achieve at least something. Nevertheless this model still approaches the learner as a language user rather than as a learner of language.

The third type of approach to course design, a learning-centred one, proposed by the authors of the "English for Specific Purposes" [5], is aimed at maximising the po-

tential of the learning situation. According to this approach what will determine the ESP course is not the competence that enables someone to perform but how someone acquires that competence.

The sequence of steps here can't be presented in a linear manner like in the previously described approaches – from an initial analysis to a completed course (see Fig. 2). Since a learning-centred approach takes account of the learner at every stage of the design process, it implies that:

- both the target situation and the ESP learning situation influence the content of the course;
- the course design needs to have built-in feedback channels to enable the course to respond to needs and resources being changed.

### An integrated approach to syllabus design

Within the above mentioned approaches to course design there can be distinguished different types of syllabuses: topic, structural, functional, notional, skills-oriented, task-based, discourse, procedural, learning-centred ones [6]. Any syllabus represents an attempt to break down the mass of a particular area of knowledge into manageable units and carries certain assumptions about the nature of language and learning.

Course designers who carefully consider the various approaches to syllabus design may arrive to the conclusion that a number of different ones are needed and are best

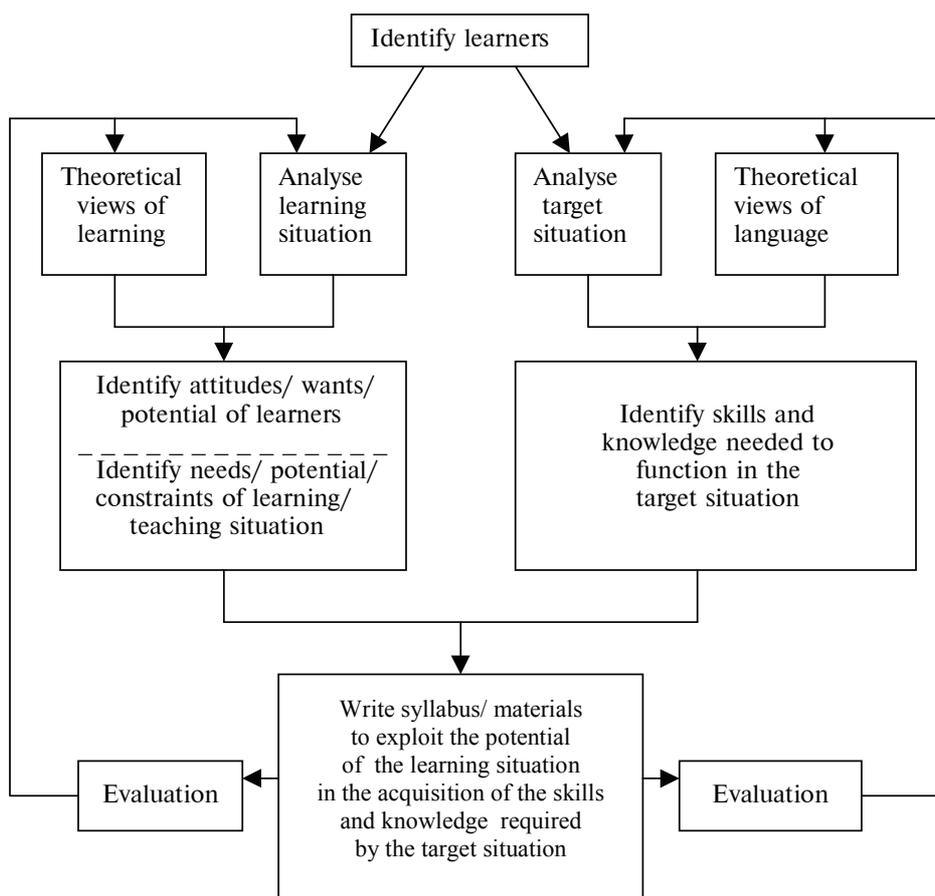


Fig. 2 A learning-centred approach to course design [5: 74]

combined in an eclectic manner in order to bring about positive results. Thus it may be necessary to use a structural/ situational syllabus or a notional/ skills one, a functional/ task-based or a topic syllabus, etc.

Nowadays there seems to be widespread agreement that the idea of discourse cannot be ignored in reference to syllabus design. However, the ways of implementing the notion of discourse in syllabus vary considerably. The general trends are as follows:

- to build discourse structure into the syllabus by classifying its features as a basis for syllabus specifications;
- to incorporate discourse into syllabus but without separating it as a layer or component of the syllabus.

Syllabus templates of the first type are associated with the names of some notable applied linguists such as J. Munby, J. Yalden, L. Trimble and others. Yalden's syllabus checklist, for instance, includes the following discourse components:

- cohesion and reference;
- operations on text (for example extracting salient information, expanding a text);
- rhetorical organisation (textual functions such as generalisation, classification, etc);
- overt transactional skills in spoken discourse (for example initiating, introducing topics, closing, turn-taking) [14].

A number of syllabuses of ESP courses based on the organisational patterns of the texts and specification of linguistic means by which they are signalled reflect the ideas of rhetorical or discourse analysis. Such an approach seems to be the most adequate for ESP reading skills courses since its ultimate aim is to make the learners into more efficient readers, by making them aware of the underlying structure of a text and the way in which language has been organised to create this structure.

The alternative approach to incorporating discourse into the syllabus but without separating it as a component of the syllabus was developed by the International Certificate Conference for its European adult language-learning syllabus at higher level [15]. The key to understanding the place of discourse in this syllabus lies in the notion of *discourse strategies* which are defined as being concerned with 'how to make use of linguistic and other kinds of competence in order to achieve our communicative aims, and at the same time present a picture of ourselves' [15: 47]. Discourse strategies are employed in the process of writing and speaking. They are choices made by speaker/writer at all stages of production which pay regard to how the receiver will experience the message, what speech acts are necessary and desirable, which patterns of interaction are appropriate, and so on.

Returning to the demand for designing an appropriate course for a group of 'hard-science' researchers, it should be noted that any syllabus which is aimed at teaching them to communicate in their specialised area should acknowledge the complexity of the phenomenon of communication. Any attempt to organise a syllabus on only one criteria (be it structures, functions, topics, situations, skills, discourse structure) will probably fail to develop effectively the unacknowledged elements. A course designer's choice in favour of the type of a syllabus implicitly reveals his/her views on the nature of language and learning. If he/she lays out a syllabus in discourse terms, he/she implies that discourse rules constitute the most important element of communicative competence.

Ours is an integrated discourse/ task-based/ skills/ syllabus approach aimed at providing the learner with the capacity to handle communication in the target situation. The reasoning in favour of such an approach is as follows:

- learning objectives are defined in terms of both competence and performance;
- the required competence is discovered on the basis of interpretation of *discourse types* in the target situation;
- skills and strategies which the learners use in order to produce and understand discourse are the basis of any language behaviour;
- the course is viewed upon as process-oriented rather than goal-oriented.

## Teaching materials design

Needs analysis having been completed, an appropriate type of syllabus having been chosen, course developers proceed to the next step in the process of course development – *materials design*. It can be done either by selecting/adapting existing materials or writing your own materials.

In case you choose the first way, the process is divided into four phases:

- defining criteria of judging (on what bases will you judge materials?);
- subjective analysis (what realisations of the criteria do you want in your course?);
- objective analysis (how does the material being evaluated realise the criteria?);
- matching (how does the material match your need?).

If you lend yourself to the actual writing of the materials, which is a common practice in ESP design, the following principles should not be underestimated:

- materials should provide a stimulus to learning, therefore they should be informative, interesting and difficult enough to engage the learners' thinking capacities, existing knowledge and skills;
- materials should be structured in such a way that, on the one hand, they should be systematic so as to help the teacher to plan lessons and encourage in the learner a sense of progress and achievement and, on the other hand, they should be flexible enough to allow for creativity and variety;
- materials should truly reflect your views on learning process;
- materials should provide models of correct and appropriate language use.

A materials design model built on the principles described above includes four elements (see Fig. 3):

- *Input* provides such things as stimulus material for activities, new language items, correct models of language use, a topic for communication, opportunities for learners to use information processing skills and existing knowledge both of the language and the subject matter;
- *Content* provides meaningful communication in the classroom;
- *Language* provides necessary language knowledge;
- *Task* enables the learners to use the content and language knowledge they have built up through the unit [5: 108-109].

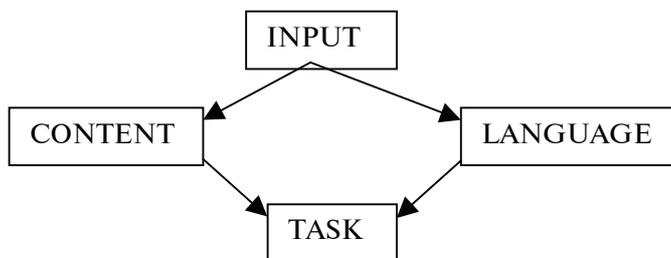


Fig. 3 A teaching materials design model

## Evaluation

Another important factor to be built into the course design is *evaluation*. The cyclical representation of the key stages in the ESP process places evaluation and needs analysis, seemingly at opposite ends of a time span, in adjacent positions. While needs analysis establishes *what* and *how* of the course, evaluation establishes its effectiveness and efficiency. Neither of these processes are one-off activities – they both need to be on-going.

A distinction should be made between evaluation *within* the course and evaluation of the course *itself*.

Evaluation *within* the course means assessing students' proficiency, progress, or achievement. It is built in when developing a course, ranging from formal tests to informal assessments. Tests are usually aimed at measuring proficiency, diagnosing specific strengths and weaknesses, placing students in a course or program and assessing their achievement in a course. However, tests are not the only means. ESP teachers may structure their classroom activities so that they can assess their students while the latter participate (a portfolio approach is an example).

Evaluation of the course *itself* implies the answers to such questions as: Was the course effective? In what ways? Where did it fall short? Such an evaluation may not be directly linked to assessment of student progress, although student evaluation and test results can provide feedback on the effectiveness of the course.

To be an integral part of a course, evaluation has to be built in as part of the course design. To evaluate everything is unrealistic; priorities can be set, the type and timing of data collection can be planned together with the resulting actions. At different times evaluation might focus on the materials used, the classroom activities, goals and objectives, means of assessing students' progress, student participation, methodologies, that is any aspect of the teaching-learning situation.

In curriculum design evaluation is usually described as *formative* or *summative*. Formative evaluation takes place during the development and implementation of the curriculum for purposes of modifying it as it is being developed. Summative evaluation takes place after the curriculum has been implemented, for purposes of evaluating its success and improving it for future implementation [2]. An ESP practitioner who is involved in each stage of course design can think of an evaluation as an on-going part of the entire process. Thus evaluation can occur in the planning and teaching stages, after it is over, when it is replanned and retaught.

For evaluation the main sources are: the learners, people the learners work or study with, documents and records used, course designers and teachers, colleagues.

Among useful methods for evaluation are: checklists and questionnaires, assessment, discussion, record keeping.

## CONCLUSION

This article has discussed principles and techniques used in EL course design for science researchers at its basic (theoretical) level. The main factors determining any ESP course design, i.e. needs analysis, language description and learning theories have been considered in terms of the needs of a particular group of learners.

Pre-course needs analysis conducted in a group of engineering postgraduates at TSTU provided us with necessary data on learners as people, as language users and as language learners. It has been suggested that in the situation of lack of common research areas among postgraduates, the best way to create a number of English situations where all postgraduates could approach a topic as equals is to address the major methodological and procedural steps inherent in any scientific activity. The latter are inevitably manifested in research discourse structures of different genres and proposed to be used as a basis for syllabus specifications in the process of course design for science researchers.

There are many different approaches to syllabus design and each of them provides important views on the nature of language and language learning. There are, too, already many examples, especially in ESP where these approaches have been successfully applied in language teaching and learning. This article provides suggestions for one further way in which a discourse-based view on language and interactive approach to teaching may be incorporated into the language learning classroom.

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## Appendix

### Pre-course information questionnaire for engineering postgraduates

#### *Personal details*

Family name \_\_\_\_\_ First name \_\_\_\_\_

Date of birth \_\_\_\_\_ Female/male \_\_\_\_\_

Education:

- secondary \_\_\_\_\_
- vocational \_\_\_\_\_
- higher \_\_\_\_\_

Educational qualifications \_\_\_\_\_

Contact numbers \_\_\_\_\_

**Professional details**

Name of institution \_\_\_\_\_

Department \_\_\_\_\_

Position \_\_\_\_\_

Areas of scientific interests \_\_\_\_\_

Thesis title \_\_\_\_\_

Scientific supervisor's name \_\_\_\_\_

**Current use of English**

Do you use English in your current activity? \_\_\_\_\_

If yes, for what purposes?

- Reading (scientific journals/ proceedings of scientific conferences and symposia/ technical manuals/ computer manuals/ software documentation/ newspapers/ fiction etc.)
- Correspondence (post, fax, e-mail)
- Telephoning
- Internet search
- Writing scientific papers
- Making reports
- Informal conversation
- Watching (video films, educational programs etc.)
- Listening (radio programs, music etc.)

If no, what are the reasons?

- you don't need English
- your English isn't good enough

How many hours a week are you likely to use English? \_\_\_\_\_

Have got any scientific publications written in English? \_\_\_\_\_

If yes, where are they published? \_\_\_\_\_

Have you ever communicated with English native speakers? \_\_\_\_\_

Please, give details of previous English studies \_\_\_\_\_

Please, give details of extended visits/stays in English-speaking countries \_\_\_\_\_

How do you evaluate your level of English knowledge:

- |  |                          |
|--|--------------------------|
| Can you exchange personal and factual information? | 0 1 2 3 4 5              |
| Can you express opinions and attitudes?            | 0 1 2 3 4 5              |
| Can you find out about other people's opinions?    | 0 1 2 3 4 5              |
| Can you write a formal/informal letter?            | 0 1 2 3 4 5/ 0 1 2 3 4 5 |
| Can you understand the general idea of the text?   | 0 1 2 3 4 5              |

**Future use of English**

Why is the language needed?

- for study
- for work (current or new)
- for a combination of these
- for some other purpose, e.g. status, examination, promotion

How will the language be used?

- medium: speaking, writing, reading, listening etc.
- types of text: academic texts, lectures, informal conversations, technical and computer manuals, catalogues, monographs, scientific papers, patents, software documentation, essays etc.

What will the content areas be?

- subjects: biotechnology, architecture, commerce, chemical engineering, CAD/CAM, processes and apparatuses of chemical manufacture, radio electronics, literature, Russian language, management, finance and credit, law, etc.

Who will the learner use the language with?

- native speakers or non-native
- relationship: colleague, teacher, superior, subordinate

Where will the language be used?

- physical setting: office, lecture theatre, workshop, library, home apartments
- human context: alone, meetings, on telephone, conferences
- linguistic context: in own country, abroad

When will the language be used?

- concurrently with the course or subsequently
- frequently, seldom, in small amounts, in large chunks

### ***Learning needs***

Why are you taking the course?

- compulsory or optional
- apparent need or not
- are status, examination, promotion involved?

What things in English would you like to improve?

pronunciation  vocabulary  grammar  reading skills   
understanding spoken English

What do you think you will achieve? \_\_\_\_\_

What do you need from the course? \_\_\_\_\_

### ***Learning Preferences***

How do you like learning? Put a tick in the box next to your answer.

- In class do you like learning  
individually  in pairs  in small groups  in one large group

- Do you want to do homework?

If so, how much time do you have for homework outside class hours?

\_\_\_\_\_ hours a day \_\_\_\_\_ hours a week

- How would you like to spend the time?

preparing for the next class  reviewing the day's work  doing some kind of activity based on your personal experience, work experience, or interests  ?

- Do you want to

spend all your learning time in the classroom  spend some time in the classroom and some time practicing with people outside  spend some time in the classroom and some time in an individualized language center  ?

- Do you like learning (put a tick next to the three things that you find most useful)

by memory  by problem-solving  by getting information for yourself

by listening  by reading  by copying from the board  by listening and taking notes  by reading and making notes  by repeating what you hear  ?

- When you speak, do you want to be corrected

immediately, in front of everyone  later, at the end of the activity, in front of everyone  later, in private  ?

- Do you mind if other students sometimes correct your written work?

- Do you mind if the teacher sometimes asks you to correct your own work?

- Do you like learning from  
Television/video/movies  radio  tapes/cassette  written material   
the blackboard  pictures/posters  ?
  - Do you find these activities useful?  
role play  language games  songs  talking with and listening to other students   
memorizing conversations/dialogues  getting information from guest speakers   
getting information from planned visits .
  - How do you like to find out how much your English is improving? By...  
written tasks set by the teacher  oral language samples taken and assessed by the teacher   
checking your own progress by making tapes, listening to them critically and comparing   
devising your own written tasks for completion by yourself and other students   
seeing if you can use the language you have learnt in real-life situations  ?
  - Do you get a sense of satisfaction from:  
having your work graded  being told that you have made progress  feeling  
more confident in situations that you found difficult before  .
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### **Курс английского языка для ученых-исследователей: теоретические и практические аспекты проектирования**

Н.Л. Никульшина<sup>1</sup>, Р.П. Мильруд<sup>2</sup>

*Кафедра иностранных языков, ТГТУ (1);  
Кафедра теории и практики преподавания английского языка,  
ТГУ им. Г.П. Державина (2)*

**Ключевые слова и фразы:** анализ потребностей обучаемых; английский язык в специальных целях; дискурсивный подход; научный дискурс; проектирование специализированного курса; способы описания языка; теории познавательной деятельности; целевая ситуация.

**Аннотация:** Цель статьи – описать технологию построения курса английского языка для исследователей в области естественных и технических наук с учетом главных факторов, детерминирующих проектирование курса: анализа профессионально значимых коммуникативных потребностей обучаемых, способа описания языка и модели познавательной деятельности. Особое внимание уделяется современной трактовке понятий потребностей и анализа потребностей, дифференциации потребностей целевой ситуации и потребностей познавательной деятельности. Приводится аргументация в пользу использования интегрированного (ориентированного на структуры научного дискурса, обучение на основе коммуникативных заданий и формирование умений и навыков владения языком межкультурного общения) подхода к построению курса.

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### **Englischsprachenkurs für die Forschergelehrten : theoretische und praktische Aspekte der Projektierung**

**Zusammenfassung:** Das Ziel des Artikels besteht darin, die Technologie der Konstruktion des Englischsprachenkurses für die Forschergelehrten auf dem Gebiet der Natur- und Technischwissenschaften unter Berücksichtigung der die Projektierung des Kurses determinierten Hauptfaktoren zu beschreiben: die Analyse der professionell bedeuteten kommunikativen Bedürfnisse der Auszubildenden, die Weise der Beschreibung

der Sprache und des Modells der Erkenntnistätigkeit. Die besondere Aufmerksamkeit wird der modernen Deutung der Begriffe der Bedürfnisse und der Analyse der Bedürfnisse, der Differenzierung der Bedürfnisse der Zwecksituation und der Bedürfnisse der Erkenntnistätigkeit geschenkt. Es wird die Argumentation zugunsten der Nutzung des integrierten Herangehens zur Projektierung des Kurses angeführt.

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### **Cours d'anglais pour les savants et les chercheurs: aspects théoriques et pratiques de la conception**

**Résumé:** Le but de l'article est de décrire la technologie de la conception du cours d'anglais pour les savants et les chercheurs dans le domaine des sciences exactes et des sciences naturelles compte tenu des facteurs essentiels déterminant cette conception: analyse des besoins professionnels des élèves, moyen de la description de la langue et du modèle de l'activité cognitive. On prête une attention particulière au traitement moderne des notions "les besoins" et "l'analyse des besoins", "la différenciation des besoins de la situation ciblée et des besoins de l'activité cognitive". On cite les arguments pour l'utilisation de l'approche intégrée dans la conception du cours (orienté sur les structures du discours scientifique, des tâches de la communication et des problèmes de l'interculturel).

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