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DESIGNING ESP ACTIVITIES FOR SECONDARY SCHOOL STUDENTS

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Jana Dlesková

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ABSTRACT

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This diploma thesis deals with designing ESP activities for secondary school students. The theoretical part explains the term English for Specific Purposes, presents its origin, history and future direction. Further, it analyzes the theory of designing vocabulary and grammar activities in ESP, together with ways of developing productive and receptive language skills, speaking, writing, listening, and reading. Then, needs analysis as an essential part of ESP course designing is described, with its position within ESP and the process and methods of data collecting, analyzing and interpreting. At the end, as the result of needs analysis, curriculum and course design is discussed. In the practical part, needs analysis on content of ESP activities, learners' preferences for activities, and materials available for Forestry English was done in order to find out the most effective way to design Forestry ESP activities for students of secondary forestry schools. The research included interviews with professionals of forestry branch and specialized subject teachers of secondary forestry schools. On top of that, a questionnaire for students was designed to gather data about their learning styles and preferences, and a forestry ESP course book analysis was done to explore activities presented there.

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I. INTRODUCTION

Students in secondary specialized schools are educated in many general and specialized subjects. The aim of this education is to prepare students for their future careers in various professional fields. In many cases, language education is underestimated by students as their primary focus concerns specialized subjects. This seems to be a false way of thinking because foreign languages, especially English, give the user an advantage of communication with people from all over the world. On top of that, students probably cannot reflect the possibility that they will need a foreign language in the future to communicate with other people from their branch, be it customers, suppliers or hunting guests. It is the aim of English for specific purposes (ESP) to show them that English can be used that way. In fact, it is not as different as traditional English language teaching, though it covers different topics and is taught for different reasons.

In Secondary Forestry School in Žlutice, students meet Forestry English in the last grade of their secondary education. During the lessons, students learn about hunting dogs, structure of wood, basic silviculture processes, forest machinery and many others. Although it might be considered language teaching, it does not, in fact, involve developing other language skills than reading and speaking in very limited way. It means that students are encouraged to read texts, find new vocabulary, learn it by heart and then give presentations on the topic. This scarcely raises their motivation to learn English or Forestry English. Today, students' only motivation is to pass Maturita exams and as topics from different specialized subjects are part of the exams, they have to attend these lessons and complete them successfully.

This diploma thesis deals with this topic and tries to find possible solutions for problems in teaching of Forestry English in secondary schools. In the Theoretical Background section of this thesis, the origin of ESP is discussed, together with diverse viewpoints of ESP specialists on definition of ESP. Then classification, brief history and future perspective of ESP are presented. Further, teaching vocabulary and grammar in ESP is explored. Then, options for developing reading, listening, writing and speaking are provided. The last part focuses on needs analysis as the necessary tool in designing ESP courses. It also summarizes the methods of the research and interpretation of data gathered during the research. On top of that, the results of the needs analysis in the form of curriculum and course design are explained.

The research section examines the content and methodology of ESP activities with regard to the theory presented in the previous section. It consists of description of methods

used in the survey, particular questions, description of participants, and criteria used for material analysis. The results are presented in tables and graphs and the findings are commented.

The next chapter offers implications for teachers who would try to design Forestry ESP activities for secondary school students. It provides the information about the content and form of activities that should be included in language teaching in order to develop language skills according to students' needs. In Conclusion chapter, all the findings are summarized.

II. THEORETICAL BACKGROUND

This section aims at theoretical information about the topic English for Specific Purposes as a branch of English language teaching and learning. The origin of ESP is discussed at the beginning, including its definition, classification and history. On top of that a short overview of future development approaches is shown. The next part deals with language issues in ESP, namely teaching vocabulary and grammar. After that, the focus is aimed at four skills, reading, speaking, writing and listening, which can be developed in a course. The following part concentrates on needs analysis and its types which provide elementary information for a course design. It also summarises the methods used during needs analysis and interpretation of gathered data. At the end, the attention is paid to curriculum and course design as a result of needs analysis.

The Origin of ESP

The English language is generally accepted as a global means of communication among users of different languages. Native and non-native speakers use English on every day basis. As such, English has also become a dominant language used in academic and occupational fields, especially technology and commerce. After the Second World War the urgent need for a unified tool of understanding emerged with an "enormous and unprecedented expansion in scientific, technical and economic activity" in the world (Hutchinson & Waters, 2010, p. 6). Besides the traditional approaches to English language teaching (ELT) where English is learnt for pleasure or prestige of knowing the language, or to borrow Michael Long's words learning English as "language for no purpose" (Long, 2005, p. 19), the need of a specific language domain has become the real and important issue for a lot of learners who know specifically why they are learning the language; such as scientists and doctors who need to keep up with the latest developments in their field, businessmen and – women who want to sell their production abroad, and also students who may find some books or journals available in English only. With regard to the specific needs of a particular group of learners, English for Specific Purposes has developed as a separate branch of ELT, with its own approaches, materials and methodology (Dudley-Evans, 2001, p. 131).

Definition of ESP

According to Hutchinson and Waters (2010), ESP is as an *approach* rather than a *product*, by which they mean that it does not involve a particular kind of language, teaching material or methodology (pp. 18-19). They suggest that the notion of ESP should not be

confused with a special variety of English, a simplified list of words or grammar for science or commerce, or a different form of language teaching with its own processes of learning which are dissimilar to teaching General English. The approach to language teaching is influenced by specific needs of the learners. It must reflect the reasons for which the student is learning English.

Another definition might be found in the work of Peter Strevens (1988) who provides a distinction between four *absolute characteristics* and two *variable characteristics*. He claims that absolute characteristics of ESP consist of language teaching which is

• designed to meet specified needs of the learner,

• related in content (in its themes and topics) to particular disciplines, occupations and activities,

• centred on language appropriate to those activities in syntax, lexis, discourse, semantics and so on, and analysis of the discourse,

• in contrast to 'General English'.

The variable characteristics are that ESP

• may be restricted to learning skills to be learned (e.g. reading only),

• may not be taught according to any pre-ordained methodology. (pp. 1-2)

Leading figures in development of ESP Tony Dudley-Evans and Maggie St John (2011) argue that these two definitions and described features are relatively late in time and therefore have certain weaknesses apart from their validity. Strevens' definition in the second absolute characteristic may lead to a certain confusion that by referring to content it may "confirm the false impression held by many teachers that ESP is always and necessarily related directly to subject content" (Dudley-Evans & St John, 2011, p. 3). ESP teaching does not have to be related to content, on the contrary, it should consider the underlying concepts and activities of the broad discipline. They also believe that due to the specific nature of interaction between the ESP teacher and the learners, the ESP teaching has its own methodology which might be different from that used in General Purpose English classes. As a conclusion they come with their own definition of ESP in which they use absolute and variable characteristics. Their definition is:

1. Absolute characteristics:

• ESP is designed to meet specific needs of the learner,

• ESP makes use of the underlying methodology and activities of the disciplines it serves,

• ESP is centred on the language (grammar, lexis, register), skills, discourse and genres appropriate to these activities.

2. Variable characteristics:

• ESP may be related to or designed for specific disciplines,

• ESP may use, in specific teaching situations, a different methodology from that of general English,

• ESP is likely to be designed for adult learners, either at a tertiary level institution or in a professional work situation. It could, however, be used for learners at secondary school level,

• ESP is generally designed for intermediate or advanced students. Most ESP courses assume basic knowledge of the language system, but it can be used with beginners. (ibid., pp. 4-5)

Classification of ESP

There is a question how many types of ESP exist. In fact, according to ESP specialists there are as many types as there are "specific learner needs and target communities that learners wish to thrive in" (Belcher, 2012, p. 2). The best known of these are two main areas: English for Academic Purposes (EAP) and English for Occupational Purposes (EOP); the division is shown in *Figure 1*.
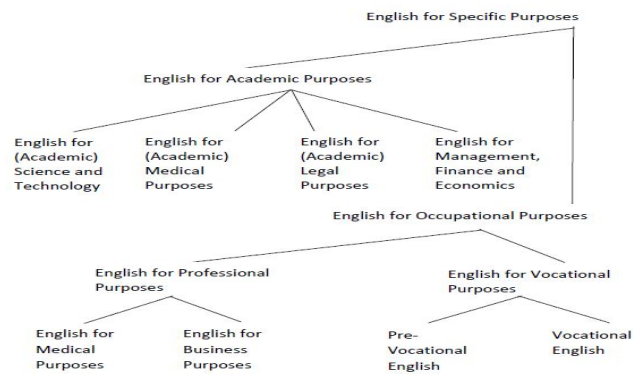
Figure 1 English for Specific Purposes division

EAP courses are basically tailored to the needs of learners at various educational levels. Although they are usually applied to university level contexts for academics, who need to give conference presentations and write research articles, according to Maggie Charles (2015), EAP may meet the requirements of secondary school students who use textbooks and write essays in English as well (p. 137). Within EAP four different specialisms are recognized:

English for Science and Technology (EST), English for Medical Purposes (EMP), English for Legal Purposes (ELP), and English for Management, Finance and Economics, yet with no established acronym for the latter (Dudley-Evans & St John, 2011, p. 6).

One must distinguish between the needs of e.g. medical students who have to read textbooks and articles, or write essays, and the needs of practising doctors or consultants in hospitals who may prepare clinical presentations for conferences or interact with patients in English. For the first group of learners these are EAP needs and for the second group EOP courses are more appropriate (ibid., p. 49). Therefore the term EOP refers to English which is not for academic purposes but for professional purposes in administration, medicine, law and business, and vocational purposes for non-professionals in work or pre-work situations. Thus, within EOP there are two subdivisions: English for Professional Purposes (EPP) which includes English for Medical Purposes (EMP) and English for Business Purposes (EBP), and English for Vocational Purposes (EVP) that covers pre-vocational English (concerning finding a job and interview skills) and vocational English (concerning the language of training for specific trades or occupations) (ibid., p. 7).

Besides this traditional division (EAP and EOP), a third area of ESP subdivision has developed recently in Australia and Canada: English for Sociocultural Purposes (ESCP). Da Silva Joyce and Hood (2012) present ESCP programmes of language learning in Australia which are primarily designed to meet the needs of adult immigrants and refugees; such programmes aim "to facilitate their entry into and participation in a spectrum of community life other than work or formal study" (p. 245). They are not designed for academic or occupational purposes but rather for social purposes. Programmes focus on taking up a variety of social roles and interpersonal relations. Similarly, Morgan and Fleming (2012) describe a different approach to ELT in Canada that focuses on the special needs of second language learners relevant to citizenship preparation education. Canadian authorities (Centre for Canadian Language Benchmarks) responsible for English as a Second Language (ESL) programming are aware of ELT in which teaching the second language and integrating newcomers are incorporated. Thus, new curriculum guidelines, special teaching materials and methods have been introduced to meet the target learners' needs (pp. 266-270).

Although these two examples of ESCP are described only in Australia and Canada, it seems that both programmes might fulfil the characteristics of ESP mentioned before; namely developing the course according to specific needs of the learners, developing specific methodology and activities for specific situations, and using specific language and skills appropriate to these situations.

History of ESP

English for Specific purposes originally appeared in the 1950s with the expansion of technological and economical growth after the Second World War. The increasing number of users of English in science, technology and business, the increasing economic power of some oil-rich countries, and on top of that the increasing number of international students studying in the UK, USA and Australia influenced the changes and developments in Applied Linguistics and ELT which together established ESP as a discipline (Dudley-Evans & St John, 2011, p. 19). According to Hutchinson and Walters (2010), ESP "has undergone three main phases of development and now it is in a fourth phase with a fifth phase starting to emerge" (p. 9). Together with other ESP specialists, such as Dudley-Evans, St John and Johns, Hutchinson and Walters describe the phases as register analysis, rhetorical and discourse analysis, analysis of study skills, and analysis of learning needs. Each phase has its own development, methods and teaching materials.

The first stage, register analysis, took place in the 1960s and early 1970s and was represented by the work of A. J. Herbert's *The Structure of Technical English* published in 1965. This textbook focused on grammatical and lexical forms which are not different from those of General English but are frequently used in scientific and technical writing, e.g. passive voice, present simple tense and nominal compounds, and semi-technical language (Dudley-Evans & St John, 2011, p. 21). Swales (1988) remarks that the work was driven by the linguistic analysis, an approach based on 'lexicostatistics', the passages were dense and lacked authenticity, and the exercises were repetitive and not too variable.

Whereas register analysis focused on sentence grammar, ESP in the second phase shifted to the level above the sentence, to discourse and rhetorical analysis. The overall attention should have been shifted to understanding how sentences were combined in discourse to produce meaning in different communicative acts (Hutchinson & Waters, 2010, p. 11). The textbooks of this phase of ESP development contained a wide range of exercise types, good visual support, and on top of that, it paid some attention to listening as well as oral and written practice.

Dudley-Evans and St John (2011) claim that these skill-based courses "seemed to develop naturally from the functional-notional materials" and were "consistent with the ideas of communicative language teaching" (p. 24). The basis of the skills-centred approach is that there are certain reasoning and interpreting processes, in addition to language learning, which enable the users to extract meaning from discourse. To develop these skills different problem-

solving activities were used through individual, pair or group work, e.g. in the reading skills course *Skills for Learning* developed by the University of Malaya in 1980.

In the 1980s the idea of learning-centred approach developed. It involves the process of learning and student motivation according to what is needed to enable students to reach the end target – the needs analysis. The approach includes reading, listening and writing skills development as well as oral practice that help the learners reach the end. The methodology is based on pair and group work and problem-solving approach. It also takes the different learning styles for different learners into consideration (ibid., p. 26).

The predominant characteristic of the latest period of ESP research is genre analysis. It is believed that genre analysis can be found mostly in academic undergraduate education, however, Ann Johns (2015) points out that "genre analysis can and should be completed on professional genres, as well" (p. 14). The term 'genre' in ESP is used in a range of educational contexts to refer to the anticipated and recurring texts that are part of everyday life (e.g. work, study). Thus it is used to analyse communicative purpose and formal language features in these contexts (Hammond & Derewianka, 2001, p. 186). Tony Dudley-Evans (2001) believes that genre analysis is a useful tool for the ESP course designer for their initial needs analysis and materials production and lesson planning, however, he is not convinced that it should be considered a 'new movement' in ESP (p. 135).

Future of ESP

Over 60 years of ESP development show that ESP is well established within ELT, especially when talking about academic and business contexts. Due to specificity of such branch of ELT, Johns and Price-Machado (2001) believe that in the future there will be a constant demand for ESP teachers who can perform "a variety of needs assessment tasks, such as collecting authentic discourses and analyzing them, making appropriate observations, and consulting various stakeholders - and then produce curricula sensitive to the students and context", and other specialists who can develop more authentic texts (p. 52). In their opinion, the future development will focus on study of genres, especially those of workplace and community.

According to Diane Belcher (2015), the future of ESP research lies in developing of ESP corpus for written and oral discourses and analysing with the help of software which enable both the teachers and researchers to study authentic discourse. She also sees the challenges in developing ESP in other occupational areas than medicine and business (pp. 536-542).

Language Issues in ESP

One of the absolute characteristics of ESP is centred on language (grammar, lexis, register), skills, discourse and genre which are appropriate to the specific activities the learners need to carry out. In the language skills, such as listening, reading, speaking and writing, it is necessary to perform grammar knowledge, therefore grammar learning should be attached to ESP teaching as well. Zhaojun Chen (2016) assumes that "grammar learning strategies should be emphasized in ESP learning, which is usually paid little attention by ESP teachers and learners" (p. 617). When learners want to enhance their comprehensible output, they need to use their grammar knowledge to solve some problems given by the activity. Some comprehension difficulties might occur if the learners are not grammatically fluent enough to understand the meaning due to their grammatical weakness. In such situations Dudley-Evans and St John (2011) suggest to teach the relationship between meaning and form and revise it in context. Or, if the priority of the course is given to grammatical accuracy, it will be essential to teach grammatical forms directly in order to express particular meanings. This often includes the verb form (tense and voice), modals (especially when expressing certainty and uncertainty), noun compounds, articles and nominalisation (pp. 74-78).

In the early stages of ESP when the first research on verb forms and tenses was done, the researchers came to a conclusion that EAP should be concentrated on the present simple, active and passive voice and the modal verbs. However, more recent research has suggested that for example the use of present perfect may be also important, particularly in academic writing. Similarly, the myth about more frequent usage of passive voice was denied by Wingard (1981) through his research in corpus of medical writing. His findings revealed that active voice predominates passive voice (60 per cent to 40 per cent).

Vocabulary in ESP

The basic question arises 'What vocabulary do ESP learners need?' when dealing with ESP teaching. Each specialized text of any sort, written or spoken, provides various characteristic lexical features. Therefore, the question cannot be answered easily. It depends on quite a few characteristics of the ESP course and the needs of the learners; e.g. whether the learners have the same goals, their level of proficiency, the context, and the amount of time available for learning (Coxhead, 2015, p. 115). To discuss the nature of ESP vocabulary and its importance, it is necessary to say what it is referred to. Averil Coxhead (2015) points out that ESP vocabulary refers to "the vocabulary of a particular area of study or professional

use" (p. 116). It may indicate that most of the specialized words should be understood by the language users in particular area but do not have to be comprehensible by those outside this area. In fact, it all depends on the context. There are many words which are considered to be specialized but are also used in everyday communication, e.g. *by-pass* and *neck* in medicine, *market* and *price* in business, and *form* and *trunk* in forestry. It is hard to say exactly which words could be counted as only specialized since the size of such vocabulary has not been fully established. Paul Nation (2008) states that the technical vocabulary ranges from 1,000 to 5,000 words depending on the particular subject area. One may consider that it is an extremely large amount of vocabulary all learners have to face during their development of understanding and use of specialized vocabulary in their subject area. On top of that, if the learners are already familiar with the 'general' meaning of these words, they may be confused when they meet them in a context with a different meaning (Kennedy & Bolitho, 1991, p. 58).

According to Dudley-Evans and St John (2011), the vast majority of lexis in ESP deals with 'semi-technical vocabulary' (sometimes called 'sub-technical vocabulary') and 'core business vocabulary' in EBP. They do not agree completely with Hutchinson and Waters that "the teaching of technical vocabulary is not the responsibility of the EAP teacher" (p. 80) and that the priority should be given to teaching of semi-technical and core vocabulary. They believe that in general the ESP teacher should not be responsible for teaching technical vocabulary but in some specific contexts the ESP teacher should check if the learners actually understand the lexis which appears in exercises in order to do them.

Mostly at the beginning of the ESP course, it is highly effective to pre-teach certain basic vocabulary that is completely new for the learners in order to be understood in the rest of the course. One way how to do it is through the cooperation of the ESP teacher with a subject teacher or an expert/specialist who may prepare a glossary of new terms together with the proper explanation in English or learners' L1 (ibid, p. 82). Another approach recommends using technical dictionaries which may help decide whether a word is technical in nature. The development of corpora and its research in specific texts is also a useful tool for ESP teaching. It may provide lists of key lexical items in EAP or EOP texts for use in the classroom or for independent study (Coxhead, 2015, p. 118).

Semi-technical (sub-technical) vocabulary and core business vocabulary can be defined in two ways. It is vocabulary which is "used in general language but has a higher frequency of occurrence in scientific and technical description and discussion" and "vocabulary that has specialized and restricted meanings in certain disciplines and which may

vary in meaning across disciplines" (Dudley-Evans & St John, 2011, pp. 82-83). Examples of such vocabulary are shown in *Figure 2*.

Types of Vocabulary	Examples
General vocabulary that has a higher frequency in a specific field	academic: *factor, method, function*; evaluative adjectives such as *relevant, important, interesting*; tourism: verbs such as *accept, advise, agree, confirm*; collocations, such as *make a booking*, *launch a campaign*
General English words that have a specific meaning in certain disciplines	*bug* in computer science; *force, acceleration* and *energy* in physics; *stress* and *strain* in mechanics and engineering

Figure 2 Types of vocabulary (Dudley-Evans & St John, 2011, p. 83)

Hutchinson and Waters (2010) also explain the position of the ESP teacher in the teaching process. From their point of view, ESP teachers do not need to learn specialist subject knowledge; they require three things:

a) a positive attitude towards the ESP content,

b) a knowledge of the fundamental principles of the subject area,

c) an awareness of how much they probably already know. (p. 163)

In fact, the interaction between the teacher and learners may contribute to the knowledge of the subject matter of both groups by teaching the materials or talking. This attitude, of course, implies that the teacher must be familiar with the basics about the subject matter of the ESP materials. If the course designers are aware of such restrictions, they may cooperate with the ESP teachers on designing the course and materials, and simultaneously, the ESP teachers may have the power to influence syllabuses and materials in order to accommodate their own capacities (ibid., pp. 162-163).

Teaching Vocabulary in ESP

Common techniques used in English for General Purposes (EGP) vocabulary teaching are utilized in ESP teaching as well. At the early stages of an ESP course, learners should be encouraged to learn how to continue to acquire vocabulary on their own after developing a certain set of basic vocabulary. Gairns and Redman (1993) claim that individual learning of vocabulary is beneficial for both the responsibility toward learner's own learning and also the focus on individual learner's needs (p. 76). Thus, learners should be trained to develop their own learning strategies.

Dudley-Evans and St John (2011) distinguish between vocabulary needed for comprehension and that needed for production. In comprehension, contextual guessing of meaning the words and learning of affixes might be contributory. The text should be prepared with over 90% of comprehensibility for the individual learner and learners should be taught to develop skills to help identify what can be learnt from the context, and develop the ability to identify parts of speech and various word forms. For production purposes, storage and retrieval of vocabulary are important. Using word association, mnemonic devices and visualisation is highly recommended because it helps create concrete items in a person's mind (Nattinger, 1988). To develop a full understanding of meaning and proper acquisition of vocabulary, the learner must be exposed to individual lexical item several times.

<center>**Skills and Activities in ESP**</center>

There are four main language skills in traditional ELT, two receptive skills - reading, listening, and two productive skills - speaking and writing. These skills can be also found in ESP. In the following part all four skills will be discussed separately although they are not usually taught this way; an integrated approach is usually recommended.

Reading Skills in ESP

Johns and Davis (1983) contributed to ESP with their approach to reading for a purpose through shifting from Text As a Linguistic Object (TALO) to Text As a Vehicle of Information (TAVI). In TALO, the text is defined as "an object of study, its principle purpose being to exemplify the syntactic structures of the target language, and to be a source for the 'quarrying' of new vocabulary" (p. 2-3), and in TAVI approach, where the learning should contain a purpose, the texts should act as "vehicles for social and economic contacts and for the transmission of ideas" (p. 1). While TALO approach is used widely in ESP textbooks all over the world, Johns and Davies believe that an alternative approach should be adopted via TAVI. For an ESP learner, extracting information accurately and quickly is more significant than language details or language study. They compared TALO and TAVI at five points (principles underlying text selection, preparatory activities, working with the text, type of teaching/learning interaction involved, follow-up activities) as shown in *Figure 3*:

	TALO	TAVI
Principles underlying text selection	* text illustrate syntactic structures * topics are of general interest * texts are specially written, modified or re-written * new vocabulary is controlled * texts are graded and short * texts are selected by teachers	* texts are chosen for their value in relation to students' needs * a range of authentic texts are used * grading is through tasks and support * texts are of different lengths, getting longer * texts are selected not only by teachers, but also by learners and others
Preparatory activities	* almost none * some translation of vocabulary	* always; important as direction finders, to awaken interest and to establish purpose
Working with the text	* focus on language and what is unknown * focus on detail and understanding all the sentences and words * questions on syntax	* focus on information and what is known * focus on links between meaning (function) and form
Type of teaching/learning interaction	* teacher monologue * teacher-centred: teacher questions, student responds, teacher evaluates	* students work in groups * reversal of roles: students ask questions, evaluate each other, reach agreement * model for self-study
Follow-up activities	* comprehension questions * grammar and lexis exercises	* using the information: transfer, application or extension * applying techniques

Figure 3 TALO and TAVI comparison (Dudley-Evans & St John, 2011, p. 97)

   While in TALO method the choice of texts is selected by teachers and adapted by teachers, and the content concerns general interest topics, TAVI approach gives specialists and learners an opportunity to choose authentic texts of their interest and thus focus on the branch of ESP of their needs. The vast majority of class work is concentrated on group work

and interaction between learners where learners are also active in asking questions in the same way as teachers in TAVI, but the teacher-centred approach is predominant in TALO since teachers are in the centre of the whole lesson and the only propulsion power in the process of learning. In the preparatory phase of the reading TALO approach does not use almost any activities to arouse interest of the learners or to establish the purpose of reading, it sometimes deals with elementary translation of vocabulary. On the other hand, TAVI concentrates on activities connected to working with links between meaning and form of the text, working with the information and knowledge already acquired, and guessing unknown vocabulary from the context, instead of analysing the text from the lexical and syntactical point of view which is also apparent in the choice of follow-up activities.

Selecting texts. Texts in ESP, in the means of textbooks and other supplementary materials, are traditionally chosen by institutions and teachers. However, learners and subject specialists also play an important role in selecting texts for reading. Especially in EAP and EVP the specialist may contribute to text selection. In such cases, actual texts from work may be brought into the language classroom and then it is teacher's decision to make to balance needs and motivational factors. The advantage of learner-brought texts is in the higher motivation of the learners to deal with work-related materials which they need to understand.

It is believed, for example by Phillips and Shettlesworth (1978), that unsimplified materials written originally for other purposes than language teaching might help learners to develop independence in their study skills whereas texts simplified or written by ESP teachers might be a misleading model written in an unnatural and inappropriate language as the teachers are mostly not competent to write them (pp. 23-35). Nonetheless, Hutchinson and Waters (2010) argue that use of authentic materials in the classroom is not as important as reflecting the teaching/learning process of the activities based on the text because "a text can only be truly authentic in the context for which it was originally written" (p. 159). They explain that in fact no texts in ESP can be considered authentic since they are always removed from their original contexts. According to Dudley-Evans and St John (2011), the authenticity of purpose is as important as authenticity of text.

Teaching reading. There are several strategies used in teaching reading in ESP. The teacher has to consider the reading process thoroughly; it means that he/she must have a plan what to do before reading itself (pre-reading activities), what to do during reading (while-reading activities) and what to do after actual reading (post-reading activities). In pre-reading activities the learners are prepared to read efficiently which make the comprehension of the text easier, and on top of that, they activate learners' previous knowledge and arouse interest

in the topic. Lebauer (1998) notes that "pre-reading activities can improve students' cognitive burden while reading because prior discussions will have been incorporated" (p. 5). Common activities provided in this stage of reading activity can be brainstorming, guessing, differencing, and analyzing titles and pictures associated with the text. In the next phase, learners perform 'active reading' with strategies such as skimming, fast reading for getting the gist of a passage – main ideas, overall theme, basic structure etc., and scanning, looking for a specific piece of information in the text – name, fact, price, number, date etc. (Scrivener, 2011, p. 265). Besides these, learners are encouraged to exploit their previous knowledge, to guess the meaning of unknown words from the context, or to make predictions. The last phase depends on "the purpose of reading and the type of information the reader is interested in gaining" (Rodríguez, 2014, p. 107). Post-reading activities are incorporated into the process to check readers' understanding, to practice new knowledge; and may lead to other activities, such as speaking or writing.

Listening Skills in ESP

There are several contexts for which learners of ESP must develop their listening skills. In EAP, students will need to understand what is said in tutorials, seminars and lectures. Learners of EOP may need to listen to presentations, conferences, telephone calls or meetings (Kennedy & Bolitho, 1991, pp. 105-109). Hence, the goal of the second language listening should be to develop 'active listeners'. This term is defined by Brown (1990) who refers to "someone who constructs reasonable interpretations on the basis of an underspecified input and recognizes when more specific information is required. The active listener asks for the needed information" (p. 172). Good listening, especially in ESP, also involves the non-verbal communication, such as physical expressions, gestures and movements, and other verbal encouragements given to a speaker, for example 'uh, uh, really, right, that's interesting', questions and others. Dudley-Evans and St John (2011) suggest that giving clear feedback to a partner in communication, such as paraphrasing, seeking clarifications, and summarising, also mean that the message is delivered and the listener understands. Their interpretation indicates that active listening also involves speaking. The purpose of such communication is to encourage the speaker so that the listeners might find exactly what they are looking for (p. 106).

Listening to monologue. Special attention should be paid to listening to lectures. This ability to follow monologue seems to be particularly important in EAP. In EOP situations,

specialists such as doctors or engineers must be able to follow conferences, technicians have to listen to and understand instructions, and bank and marketing specialists need to listen to policy presentations. Unlike in reading comprehension, following monologues faces several obstacles. The readers can stop whenever they need and look up the words they do not understand, or they can re-read the particular passage. Thus they have a control upon the flow of information and the possibility of processing of it. A monologue, on the other hand, has to be understood as it is delivered.

Kennedy and Bolitho (1991), however, admit that there are few features in listening to monologues which may assist comprehension. Firstly, the use of intonation and pausing indicate the beginning and end of different sections. Also stress is significant since it highlights new or important information. Secondly, it is the use of repetition or rephrasing of what has been said. Thirdly, the aid in the form of diagrams and drawings may enhance the process of understanding. And on top of all that, recognition of non-verbal features, such as gestures or hand movements, should be trained to reinforce important points (pp. 105-106).

Note-taking in real time. It is a complex task which involves the actual listening, comprehension, writing, and a high level of concentration. During a lecture or a presentation the listeners have to decide what is important enough to be noted down and how the notes should be taken in order to be understood later (Dudley-Evans & St John, 2011, p.104). ESP learners should be therefore trained to distinguish between new or important information and insignificant information, e.g. in activities such as listening for key words, listening for main and subsidiary points, or listening for speaker's attitude in the form of open cloze activities or multiple choice activities. For an effective note-taking learners should adopt and use a system of symbols and abbreviations when speed is essential. These may be taken from the course or they may be developed by the listeners themselves.

Teaching listening. Similarly to reading, the listening text must be authentic in source and purpose. Such texts can be recorded from radio or television programmes, as well as a short talk of a specialist from the specific area, or a YouTube short video can be played (with or without picture) (ibid., p. 105). For the purpose of developing listening skills in ESP, several strategies may be borrowed from the traditional ELT. To practice listening, an ESP teacher can prepare several types of activities, e.g. ticking off items, true/false answers, detecting mistakes, answering questions, gapfilling, skimming (listening for general information) and scanning (listening for specific information) of the text (Ur, 2012, p. 110).

Speaking Skills in ESP

As speaking is tightly connected to listening in communication, it is undoubtedly necessary to develop speaking skills in ESP courses as well. Many spoken interactions involve just two people, e.g. telephone conversations, a conversation between a salesperson and a customer, between a receptionist and a hotel guest, doctor-patient interview etc. In ESP, however, some specific situations may occur when dealing with speaking; multi-person spoken interaction and speaking monologue.

Multi-person spoken interaction. A group discussion might be difficult to lead but also a single speaker might have difficulties to enter such discussion. According to Micheau and Billmyer's (1987) research conducted among American university students, non-native speakers often complain about having difficulties in entering conversations in meetings (pp. 87-98). Such inconveniences may be eliminated during ESP activities through developing skills such as recognising the correct time when the speaker is giving signals that he/she is ending his/her turn and is willing to listen to others. Dudley-Evans and St John (2011) point out that handling the turn effectively must be also a part of training. The speaker should judge when a contribution is most effective and how long he/she can speak to avoid interruptions (p. 110). Special training of these skills is recommended by Kennedy and Bolitho (1991). They suggest integrating simulations and role-playing in the course for reproducing the problems and pressures of real-life situations (p. 124-127). Learners have an opportunity to practise specific situations simulated in the classroom, especially useful phrases and vocabulary.

Speaking monologue. Spoken monologues, in other words oral presentations, are present in both types of ESP; in English for Academic and Occupational Purposes. In EAP situations, delivering oral presentations is a part of common practice. Academics and university students attend conferences, give presentations during seminars or lectures, or "panel presentations (roundtables) offering multiple perspectives on a topic, posters, and papers, the latter two highlighting research of one individual or research group" (Feak, 2015, p. 44). Tour guides, sales representatives, doctors or engineers, and other professionals are also motivated to develop their speaking skills as speaking monologue is one of the most usual ways of their communication. A typical public speech in business is represented by impromptu presentations in a meeting when a person is asked to state the current position of a project, give more details or explain the need for extra resources or time for the project.

Teaching speaking. Except for previously mentioned strategies, simulations and role-playing, in an ESP class it is necessary to "select activities that reflect the real functions for which students will use English" (Schleppegrell & Bowman, 1986, p. 47). At the beginning,

learners should be practised in conversation management. In other words, the course should start with greetings and closings of dialogues, introducing, asking for repetition, agreement and disagreement. Drilling perfect 'native' pronunciation of single words is not required. Not only is such activity time consuming, it might also give a native speaker a false impression that the non-native speaker is more fluent that he/she actually is. Another example of suitable activity is interpreting pictures or explaining diagrams. In advanced groups debating can be practised to learn how to enter the conversation, how to persuade others and how to present and defend own opinions.

Writing Skills in ESP

Writing is considered one of the central activities of institutions. Modern academic branch deals with essays, papers, thesis, or research reports. In corporate life, technicians, managers, sales persons and other employees depend on writing activities in the form of keeping records, engaging with costumers, selling products, and commercial letters or emails. According to Hyland (2015), there are innumerable individuals around the world who "must now gain fluency in the conventions of writing in English to understand their disciplines, to establish their careers or to successfully navigate their learning" (p. 95). In other words, with the rising importance of English use as the global language, writing in English becomes necessity for students in higher education and professionals in occupational field. ESP students may bring some writing experience from school but apparently this is not the kind of skill they are expected to perform. Thus the challenge for ESP teachers does not lie in simple 'teaching writing' but in teaching particular kinds of writing which are valued and expected in academic and professional contexts.

Although many students might think that a great deal of writing includes grammar, Schleppegrell and Bowman (1986) remind that it is not the most important aspect of writing. In fact, it might be just a false impression that students are learning English, but they actually learn about English. The ability to comprehend different contexts is not directly linked to accuracy of grammar use, nonetheless, some grammar teaching is necessary.

Teaching writing. Writing skills development takes a lot of practice. It is recommended to start with simple, structured exercises before free writing tasks in order to encourage students to gain confidence. A model writing may be a good way to start. Students study a model piece of writing according to its layout and organisation and produce a similar text only with substitution of content (Scrivener, 2011, p. 241). Dudley-Evans and St John (2011) call this type of teaching writing 'the product approach'. It is a purely mechanical task

which does not involve a lot of thinking about the purpose of the writing, the reader or expectations of the discourse. As a reaction to this model-based approach, 'the process approach' emerged. It consists of two stages – a thinking stage and a process stage. The thinking stage involves identifying problem, planning a solution to the problem and reaching an appropriate conclusion. While planning, the writer must have the message, the audience and the purpose in mind. The process stage deals with translating the plan into paragraphs and sentences, reviewing the first draft and then revising the text. This stage usually proceeds in a similar way with the sequence of drafts, feedbacks and revisions until the final version is reached (Robinson, 1991, p. 104).

Before students provide the actual piece of writing, they should be taught how to recognize relationships between sentences by open cloze activities or fill-in-the-blank exercises, how to build a paragraph structure by re-ordering jumbled sentences and combining shorter sentences into longer ones, or how to paraphrase a text by summarizing activities (Schleppegrell and Bowman, 1986, p. 37-38). Developing writing may be enhanced by accompanied visuals, such as diagrams, pictures and tables.

According to Kennedy and Bolitho (1991), a common form of academic writing is report writing. Regardless of topic, reports of experiments tend to have a similar structure – the aim of the experiment, a description of the apparatus used, the method or procedure, the results, and the conclusion (pp. 88-89). One should not forget to mention some typical pieces of writing in vocational field, such as descriptions (e.g. in handbooks, tourist guides, medical reports), letters and emails (e.g. a communication with customers, hotel guests, a response to an application form), and business correspondence (e.g. orders, offers, invoices, warranty claims).

Needs Analysis in ESP

The first, and probably the most important, absolute characteristic of ESP states that ESP courses should be designed to meet specific needs of the learners. Before anyone could design an ESP course and start teaching particular learners, he/she has to begin with needs analysis (NA). The term can be defined as:

> the systematic collection and analysis of all subjective and objective information necessary to define and validate defensible curriculum purposes that satisfy the language learning requirements of students within the context of particular institutions that influence the learning and teaching situation. (Brown, 1995, p. 36)

In other words, it is a process which is carried out to establish "what" and "how" of a course should be the key features in a particular curriculum of a particular course. The analysis is followed by course design, materials selection and production, teaching and learning, assessment and evaluation. Dudley-Evans and St John (2011) claim that these activities are not in fact separated, only following each other linearly, but interdependent and the stages overlap as shown in *Figure 4*.
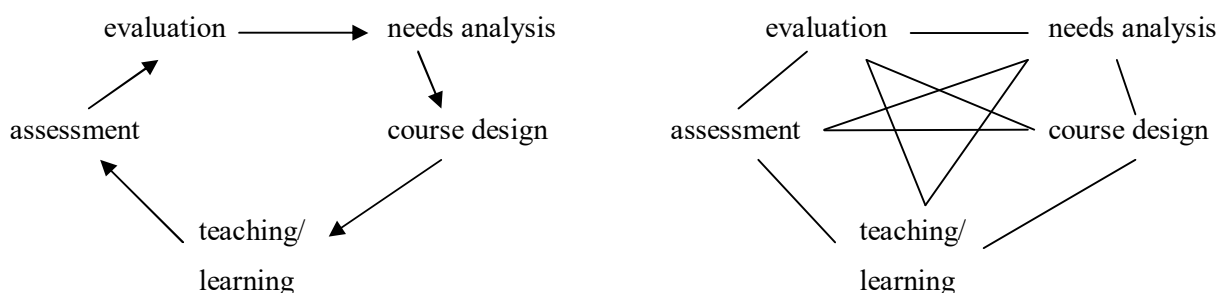
Figure 4 Stages in the ESP process in theory and reality (Dudley-Evans and St John, 2011, p. 121)

ESP specialists distinguish several categories of needs analysis which must be done. Hutchinson and Waters (2010) describe a target situation analysis and a learning situation analysis. In the target situation analysis the researchers have to look at the target situation in terms of 'necessities', 'lacks' and 'wants'. When talking of necessities, the analysis gives an answer to the question of "what the learner has to know in order to function effectively in the target situation" (p. 55). Not only do they involve the target situation in terms of e.g. writing business letters, communication with customers or getting necessary information from sales catalogues, the learners will also need to know certain linguistic features. Simultaneously, the researches should analyze the current situation of the learners; that implies what learners already know and what they lack. Besides these objective needs, the learners' subjective desires and wants cannot be ignored.

According to Lynne Flowerdew (2015), 'lacks' and 'wants' of the learners are analyzed by a present situation analysis. It draws attention to the gap between the present level of language use of the learners at the beginning of the course and the level they need to achieve at the end of the course. She adds that there are some other aspects that should be included in the present situation analysis, such as personal information about the learners (previous learning experience, cultural information, reasons for attending the course and expectations), and information about the language teaching environment (e.g. resources) (pp. 326-327). Brown's (2016) view of the present situation analysis also includes tests of general

proficiency level of English to gather information about students' strengths and weaknesses in terms of the four skills (p. 22).

To go back to Hutchinson and Waters (2010), the second category of needs they suggest to analyze is the learning situation analysis. Since it is now obvious what the target situation analysis deals with, the learning situation analysis must be discussed as well. It is not an effective way to start a course design only with the knowledge of what students should know but also with the awareness of how they can learn it (pp. 60-61). Thus it is also necessary to analyze individual learning preferences of learners, such as learning strategies and styles, error correction, group sizes or amount of homework (Brown, 2016, p. 24). Together with the analysis of teaching methods, types of activities and materials that students will be employed with, the learning situation analysis will tell the course designers what route to choose according to the conditions of the learning situation, learner' knowledge, skills and strategies, and their motivation.

Data Collecting in ESP Course Design

First of all the question who will be involved in data collection must be discussed. Dudley-Evans and St John (2011) suggest that the course designers start with the learners, people working or studying in the field, ex-students, clients, and continue with employers and colleagues. On top of that, documents relevant to the field and ESP research in the field might be helpful (p. 132).

Another stage of needs analysis is to set which procedures within data collecting to choose. There are a number of ways in which information can be gathered. Hutchinson and Waters (2010) remind the most frequently used, e.g. questionnaires, interviews, observation, data collection (e.g. analysis of authentic spoken and written texts), and informal consultations with sponsors, learners and others. For the complexity and reliability of the analysis, it is required to use more than one of these methods, depending on time and resources available (pp. 58-59).

Interviews. The process of talking face-to-face to gather information required for needs analysis can be led in two ways. If the researches are not sure what they need to find out, they will probably choose an unstructured interview. To compare or contrast the results of interviews with different participants, a structured interview is extremely helpful (Brown, 2016, p. 74). Structured interviews are time consuming but provide valuable information which cannot be collected in a different way. Dudley-Evans and St John (2011) present a list

of helpful remarks in order to conduct a successful interview, e.g. recording an interview is more efficient than taking notes, or announcing an interview in advance (p. 135).

Questionnaires. Questionnaires are very handy when analyzing different needs in ELT although as Dudley-Evans and St John (2011) point out, constructing good questionnaires is not easy. They belong to the most common research tools in ELT, mainly because "they are useful, versatile, quick to implement, and the data they generate can be analyzed relatively quickly and easily" (Coombe and Davidson, 2016, p. 217). To construct a reliable questionnaire it is necessary to follow several rules. First of all, the questionnaire should be comprehensible, well arranged, easy to fill in, and the researchers should take language level of the respondents into account. When preparing questions, open-ended or close-ended, the researchers must be aware of the information ability of questions which should be unambiguous, comprehensible, concise, valid, and should not be constructed as suggestive (Brown, 2016, p. 112). While open-ended questions allow the respondents to write their answers or reactions in their own words, close-ended question offer the respondents a selection of existing possibilities to choose from.

Observations. Observations are useful when dealing with watching a particular task being performed, especially by shadowing individuals at work. Often such activity can be unpleasant or uncomfortable for the individuals hence they should be informed carefully about the purpose of observation. Dudley-Evans and St John (2011) predict that in EAP situations, observation for needs analysis concerns sitting in classrooms during subject lectures or practical sessions, while in EOP situations, workplace, work processes, or subject conferences observations are taken (p. 135).

Analysis of authentic texts. One must not forget that the crucial stage of needs analysis is selecting and analyzing authentic texts, either written or spoken. According to Brown (2016), the sample texts are collected from real-life documents common in the contexts of a target field, such as audio or video recordings (lectures, meetings, telephone interactions, work processes etc.), or written documents of the company (p. 81). They are mostly used for target situation analysis, thus the researchers focus on language analysis to determine the key linguistic features. Extracts from these texts can be used in the ESP course as model texts, and the recordings might serve as listening passages in ESP materials.

Data Analysis and Interpretation

Collecting data for needs analysis is just the beginning of work. The raw data must be converted into information, analyzed and interpreted afterwards. It is certain that during the

collecting, both quantitative and qualitative data can be gathered. According to Brown (2016), the quantitative analysis of NA data will include frequencies, percentages, and averages, thus the analyzed data will be expressed as numbers. This type of analysis has many advantages, because it is:

- easy to calculate,
- easy to interpret,
- easy to present,
- intuitive in meaning,
- easy to explain to any educated audience,
- easy for any educated audience to understand. (pp. 122-123)

Dudley-Evans and St John (2011) recommend quantitative analysis for small amounts of data since it will process the data into information through "a simple tally system" (p. 137).

On the other hand, qualitative analysis tends to analyze data that is expressed in words. Brown (2016) suggests to use various sorts of matrices which can help "in discovering patterns, analyzing and thinking about those patterns, revising such patterns, and ultimately in reporting the patterns in research papers and reports" (pp. 129-130). Unfortunately, it requires general or specific computer software tools that are not effective for a small-scale research which is done only once since they are complicated and strenuous to use.

Curriculum and Course Design

After the needs analysis is completed, there comes the time to use the results in order to build a functional curriculum and design an ESP course. Course design is a process of interpreting the raw data from NA and producing an integrated series of teaching-learning experience which has the only aim, to bring the learners to a particular level of knowledge (Hutchinson & Waters, 2010, p. 65). In other words, the course designers take all the theoretical and empirical information from NA and produce a syllabus, select, adapt or write materials, choose a methodology for those materials, and establish evaluation procedures. There are three main approaches to course design: language-centred, skills-centred and learning-centred. In language-centred approach, the course designers start with identifying the target situation, then proceed to identifying linguistic features, creating syllabus and designing materials. However, Hutchinson and Waters (2010) criticise this approach because:

- it does not consider the learners' needs at every stage of the process,
- it teaches only a restricted area of the language,
- it is not flexible in future developing if any errors occur,

• it believes that language being a describable system means that describing that system will result in systematic learning,

• it does not take other features in teaching-learning process into consideration except for determining the content of syllabus and materials,

• it does not involve the competence that underlies the performance. (pp. 67-68)

On the other hand, the skills-centred approach aims at helping learners to develop skills and strategies required to cope in target situation mainly after the ESP course itself. Thus the course designers focus on analysing the skills and strategies together with theoretical views of language and learning to help the learners be better in processing of information. And again this approach has some limitations. In fact, the skills-centred approach does not consider the learner who is 'learning' the language but rather 'using' the language (ibid., pp. 69-70).

The last approach, learning-centred, combines the previous ones and adds a new feature – learning. It does not only say what learners should know but also involves the path, the process of learning which brings them to the goal. Since the learning situation is analyzed within NA, the course designers should be aware of the preferences in learners' learning strategies, and thus learners might be more responsible for their own learning (ibid., pp. 75-76).

In curriculum development, the terms 'goal' or 'aim' must be discussed first. They refer to "a description of the general purposes of a curriculum" (Richards, 2001, p. 120). Such aim statements must provide a clear definition of the purpose of a programme, provide a guideline for each participant in a programme (teachers, learners, and material writers), help provide a focus for instruction, and describe important and realizable changes in learning. In the Czech Republic, The Framework Educational Programme (FEP), established by The Ministry of Education, Youth and Sports, sets the compulsory aims of general purposes of the curriculum in pre-school, basic, secondary, and tertiary education. There is a list of goals that should be achieved at the end of the education of a particular type. In educational programme Forestry (41-46-M/01), the English language outcomes involve general aims as well as specialized goals of the specific field. The specialized aims are defined as follows:

The pupil

• presents a prepared presentation from his/her specific field and reacts to simple questions from the audience,

• uses basic specialized vocabulary from his/her specific field appropriately,

• comments on the topics of his/her specific field, both orally and written,

• solves standard speaking situations and basic and frequent situations concerning occupational activities promptly and appropriately,

• proves factual knowledge about particular findings of his/her specific field. (MŠMT, 2007, pp. 18–20)

As these aims are compulsory and are defined in a general way, each educational facility has to develop a set of student learning outcomes (also called objectives) which state what exactly students should be able to do by the end of their training (Brown, 2016, p. 155). Each outcome refers to an aim defined in the curriculum as a general purpose. Thus these objectives must be consistent with the curriculum aims. Richards (2001) warns that using expressions such as 'will study', 'will learn about' or 'will prepare students for' do not in fact describe the result of learning but rather what learners will do during a course (p. 123). Student learning outcomes should be also precise since vague and ambiguous statements are not useful. What the course designers should have in mind is that the outcomes must be feasible during a course. If they set the objective as 'Students will be able to follow conversations spoken by native speakers' for a 60-hour English course, this objective will probably not be fulfilled. In Brown's (2016) point of view, a good start in setting the objectives can be with Bloom's taxonomy of the cognitive domain which was developed in 1956, or Krathwohl's update and revision from 2002. Both taxonomies contain a list of verbs that can be used divided into six categories – in Krathwohl's case – remember, understand, apply, analyze, evaluate, and create (pp. 167-168). In developing the School Educational Programme (SEP) of each school in the Czech Republic which contains particular student learning outcomes for particular subjects, all the teachers (course designers) were recommended to use Bloom's taxonomy.

Conclusion

The Theoretical Background section introduces the notion of English for specific purposes which is a brand of ELT. Since English has become a lingua franca in the international communication in business, technology and science, ESP introduces the possibility of developing certain skills in academic and vocational fields. ESP courses provide the learners the opportunity to acquire knowledge and skills useful in their branch according to their needs and preferences. They key part of needs analysis is what should be taught and how should learners be educated. It includes the choice of vocabulary and grammar used in the materials and the analysis of preferable activities which develop different language skills (reading, speaking, writing and listening) as an essential part of language teaching. The needs

analysis is therefore provided by the course designers who conduct their research among specialists in the field, subject teachers and learners.

III. METHODS

In conformity with the statements about needs analysis presented in the theoretical background of this thesis, this section deals with the methodology of the research conducted among forestry workers, subject teachers and students in order to collect relevant data for the analysis of ESP teaching and learning needs of secondary school students. At first, interviews with forestry workers and subject teachers were done. After that, a questionnaire was presented to the students. This section also includes a brief introduction of respondents, information about time spent on interviewing, description of all the questions included in the interview forms and the questionnaire, and description of criteria selected for the material analysis.

Research Tools

For the purpose of needs analysis, two methods of data collection were chosen, a structured interview and a questionnaire. The interview appeared to be a useful tool when collecting information from subject teachers and forestry workers (specialists in the forestry branch). Not only did it provide the essential data from the forestry field on the academic and professional basis, it also enabled the researcher to ask follow-up questions to obtain more accurate explanations or additional information. To collect data from the learners, a questionnaire was used. It included several questions in order to gather information about their learning preferences and self-evaluation of their current English level. Another part of needs analysis focused on current ESP materials of Forestry English and authentic materials available for the secondary schools students.

The collected data were analyzed and summed up according to outcomes from the interviews, questionnaires, and material analysis. The final analysis included quantitative and qualitative data. The quantitative analysis provided frequencies, percentages, and averages, thus the results were expressed in numbers, tables or graphs. The main purpose of qualitative analysis was to compare and summarize information gathered from forestry workers and subject teachers who provided the background information for the content of the activities, arranged in transparent tables in Appendix 5 and Appendix 6. The qualitative analysis was therefore expressed in words.

Questions in Interviews

At the beginning of the research, it was essential to prepare relevant questions which could be asked in order to obtain credible answers from the forestry workers and subject

teachers. The analysis of their answers served as the basis of the content of activities for the students.

For forestry workers 10 questions was prepared; four close-ended questions with several possibilities to choose from, and six open-ended questions which provided the respondents an opportunity to answer more widely, for better identification labelled W1 – W10. Question W1 asked about the use of foreign languages in their profession. It could reveal different foreign languages that can be used in the branch, including English. Question W2 focused on different kind of communication with three possible answers to choose from, face-to-face, phone calls, emails, and a possibility to add some more. Question W3 requested to choose from several partners in communication they deal with in their profession, such as management, co-workers, subordinates, suppliers, customers, or someone else. Question W4 asked about the kind of written texts the forestry workers use and meet; manuals, catalogues, specialized literature, letters to costumers or suppliers, emails and others. It helped define what kind of sources should be used in ESP activities. Question W5 offered the choice of three places where communication can take place; office, forest or workroom. Question W6 asked about the job content of the respondents in order to have a notion about the processes in the particular position. Question W7 focused on determination of key specialized vocabulary, namely technical equipment and tools. Question W8 requested the answers on specialized software and computer technology that can be used in forestry branch. Question W9 asked about the kinds of calculations which might be utilized in developing specific ESP activities. Question W10 focused on technical documents, standard, tables and tables, or graphs that require specific skills to read and understand, and therefore should be practised in ESP activities as well. All the W questions corresponded with the questions asked in the interviews with subject teachers, however, W questions focused on the usage of English in practice.

For subject teachers 15 questions was prepared; one close-ended and fourteen open-ended questions, for better identification labelled T1 – T15. In Question T1 the teachers were asked about their ability to speak foreign languages. Question T2 gave the teachers an opportunity to think of different cases in which the students might use English in their future careers. Question T3 dealt with written texts that are used in particular subjects, such as manuals, catalogues, specialized literature, notes or others. Question T4 asked about the audiovisual material that is used in specialized subjects. Question T5 requested for the description of subject content. Questions T6 and T7 focused on the technical equipment and tools, their description and usage. Question T8 asked about the use of computer technology and specialized software in the subject. Questions T9 and T10 dealt with different kinds of

calculations used in the subject and their description. Question T11 and T12 required answers about technical documents, standards, tables or tables, and graphs that are used in the subject, and the necessity of working with them in English. Question T13 concerned the key vocabulary which may be used to determine basic word bank for ESP activities. Question T14 focused on description and explanation of technologies or processes relevant for the specialized subject. In the last question, T15, the teachers were asked whether they would be co-operative in developing ESP activities for SFS in Žlutice.

The responses were recorded directly in a form during the interview. All the interviews were conducted in the Czech language in order to be fully understood by the respondents and the researcher as not all the respondents were capable to speak English. Both interview forms in English and Czech are included in Appendix 1 and Appendix 2.

Questionnaire for Students

To obtain relevant data for needs analysis of students' learning styles and preferences, their level of English proficiency and interest in specialized subjects, a questionnaire was prepared. It contained 21 questions; six open-ended questions, six close-ended questions and nine questions with two, four and five item scales, three out of four two item scales questions required further explanation, for better identification labelled S1 – S21. In Question S1, students were asked to provide the total length of English learning experience. Answers to Questions S2 – S6 gave information about the time students have spent learning five main specialized subjects, Silviculture, Harvest, Game keeping, Forest protection and Forest management. Question S7 concerned students' interest in specialized subject set on the five item scale 1 very interested – 2 interested – 3 on average – 4 not very interested – 5 not interested. Question S8 dealt with the success rate of students in specialized subject. The scale was set 1 excellent – 2 very good – 3 good – 4 satisfactory – 5 unsatisfactory. In Question S9, students were asked to choose from yes – no whether they would use English in their future careers and to give particular examples of such situations. Question S10 focused on their plans to continue on to universities. This question offered yes – no choice and requested further comment on the type of specialization if positively answered. Question S11 offered four item scale 1 very important – 2 important – 3 not very important – 4 useless to evaluate language skills preferences. In Question S12, students evaluated on the four item scale very good – good – average – low their English level in several categories, such as reading, writing, listening, speaking, grammar, vocabulary, pronunciation, and communication.

Question S13 asked about students' preferences for different kinds of written texts that might be included in an ESP course book. Questions S14 and S16 focused on students' activity preferences when checking comprehension of reading or listening. For both questions several possibilities were given to choose from, e.g. true/false, multiple-choice, or questions. Question S15 concerned students' preferences for learning several types of writing. It suggested four possibilities to choose from; writing letters, emails, reports, or notes. In Question S17, students were asked to choose preferable teaching methods when practising speaking skill. Students' preference for classroom interaction, such as pairwork, group work, or individual work, was inquired in Question S18. Practising vocabulary is sometimes neglected in language teaching although students usually enjoy these activities. Hence in Question S19, five different vocabulary activities, such as matching words and pictures, matching words and definitions, gap-filling, matching two expressions, and vocabulary games, were given to students to choose from according to their preferences. As ELT usually includes teaching grammar, the students were requested to decide whether they wanted grammar to be part of an ESP course in Question S20. The last question, Question S21, provided the information about an ESP course interest in SFS in the form of yes – no answer.

The questionnaire was prepared in order to provide background information about how students should be taught, what kind of methods and activities the teacher should use, and what kind of classroom interaction students would prefer. On top of that, it should give the material designer information about students' level of English proficiency.

The questionnaire was provided to the students in the Czech language because some of the English expressions might not have been fully understood or might have been misinterpreted. The questionnaires in English and Czech are included in Appendix 3.

Materials

The research included an ESP course book and other materials officially published in the Czech Republic. The course book was analyzed on the basis of activities developing different language skills, grammar and vocabulary activities, and types of texts appearing in the course.

There is one authentic ESP course book for forestry published and available in the Czech Republic. Therefore the book was analyzed according to seven criteria in order to find out whether it fulfils the parameters discussed in the theoretical part and is suitable for secondary school students. Criterion 1 dealt with reading activities, including pre-reading and

post-reading activities. Criterion 2 focused on different types of listening activities. Criterion 3 concerned the speaking activities. Criterion 4 searched for the types of writing activities. Criterion 5 dealt with activities developing vocabulary knowledge. Criterion 6 answered the question whether grammar was included. And Criterion 7 focused on different types of texts which appeared in the course book as the source of vocabulary and grammar.

Respondents

To gather information for the needs analysis from the professional area, seven forestry workers were approached but only six of them (further only W1 – W6) agreed with the interview. Five of the participants have a university degree from different forestry universities in the Czech or Slovak Republic, the sixth one, W3, finished his studies with secondary final exams. W1 works as a forest district manager with Forests of the Czech Republic, S.E., the biggest forestry company in the Czech Republic. Respondent W2 is a specialist in Swedish forestry machinery and an approved seller for the Czech Republic. Both of them have been working in forestry for more than 10 years. Respondents W3 and W4 work in the same municipal forestry company in Žlutice, W3 is an operational worker at the beginning of his career and W4 is an executive director with 44 years of experience. Participant W6 has been working in the forestry branch for 29 years, thus with his rich experience there is no wonder that he provides inspecting and consulting services for others. The last respondent, W5, the only woman in this W group, has been working for Forest protection department of Ministry of Agriculture as an inspector for 3 years.

The education plan in Secondary Forestry School (SFS) in Žlutice involves many specialized subjects but only five of them can be considered the main ones; Game keeping, Silviculture, Harvest, Forest Protection and Forest Management. Thus the teachers (further only T1 – T5) of these subjects were requested to participate in the research. Respondent T1 is a 52-year-old game keeping teacher with 32 years of experience. He is the only teacher who does not work at SFS in Žlutice, but at SFS in Šluknov. Respondent T2 is a long-standing professional in harvest industry with over 20 years of experience in the branch. He has been teaching Harvest for 1 year. Respondent T3 is a teacher of silviculture, the only compulsory specialized subject in Maturita exam at SFS Žlutice. He has been teaching it for 28 years. The two women in this group, with the shortest length of experience, are respondents T4 and T5. T4 is a forest protection teacher with over 4 years of teaching experience, and T5 is a headmaster of SFS in Žlutice and also a forest management teacher who spent some time teaching at Agricultural University in Prague.

The last, and the biggest group, is represented by the 3rd grade English class students of SFS in Žlutice. The group consists of 14 respondents, including 5 girls. They are at age from 18 to 20. At the end of their Maturita studies they are supposed to have reached at least the English level of proficiency B1, according to the Common European Framework of Reference for Languages. After secondary school, only a few students continue their education at forestry universities, mostly in Prague. Some of them leave the industry and work in different professional fields than forestry. Vast majority of students starts working with Forests of the Czech Republic, S. E., or other forestry companies in the country. They often work in the positions of game keepers, forest wardens, operational managers, forest district managers or technicians in timber selling companies.

Time Span

The interviews with forestry workers and subject teachers were carried out within one week. The respondents were asked to participate in advance and all the information about the purpose of the research was given to them at the beginning of the interview. On top of that, the meaning of ESP and the content of ESP activities were thoroughly explained. Every interview took about 90 minutes. The questionnaire was presented to students in an English lesson and some of the expressions from the questionnaire were explained at the beginning. The completing took about 20 minutes.

IV. RESULTS AND COMMENTARIES

This chapter presents the data gathered from the forestry workers, subject teachers and students during the research, and the analysis of an ESP course book. They were obtained on the basis of interviews and questionnaire completion according to the questions. The course book was assessed from the point of view to what extend it fills the criteria. The result of the analysis shows what secondary school students need to develop their Forestry English, from the point of view of the content and types of activities. The findings were summed up and compared.

The qualitative analysis of data gathered from the forestry workers is presented in tables and the quantitative analysis of students' learning preferences and the course book resulted in several graphs.

Interview Outcomes

In the first question, forestry workers stated whether they use English in their profession. Their answers also included the use of another foreign language. The answers are presented in the table. The comparison shows that three out of six forestry workers use English in their profession and two of them prefer German language. Respondent W1 does not speak any foreign languages at all.

Forestry workers	W1	W2	W3	W4	W5	W6
Do you use English in your work? (or another foreign language)	no	English	German	English	English	German

Table 1 Use of foreign languages according to forestry workers

In the next question, W group chose from three types of communication situations they use a foreign language in – face-to-face, phone calls, emails. All of them agreed on face-to-face situations in which they communicate the most often. Respondent W5 also uses emails. And respondents W2 and W6 sometimes make phone calls and write emails in a foreign language. Although respondent W1 stated that he does not speak any foreign languages, he deals with contractor's workers from Ukraine or Romania on daily basis who speak Czech badly. Thus he admitted that he has to communicate with them but with enormous difficulties.

Forestry workers	W1	W2	W3	W4	W5	W6
What kind of communication situations do you use a foreign language in?	face-to-face	face-to-face, phone calls, emails	face-to-face	face-to-face	face-to-face, emails	face-to-face, phone calls, emails

Table 2 Communication situations in forestry professions

In Question W3, respondents chose their partners in communication from the list of five items – management, co-workers, subordinates, customers, and suppliers. Respondents W1 and W2 communicate with managers, co-workers, customers and suppliers. Respondent W1 also stated that he communicates with contractor's workers. Respondent W2 sees his partners in educational facilities and institutions as well. Respondents W3 and W6 communicate mostly with customers and suppliers. Respondent W4 deals with business partners and respondent W5 with customers. Since customers and suppliers are usually considered business partners, respondents W2 and W4 mentioned redundant piece of information.

Forestry workers	W1	W2	W3	W4	W5	W6
Who do you usually communicate with?	managers, co-workers, suppliers, customers, contractor´s workers	managers, co-workers, subordinates, suppliers, customers, business partners, schools, institutions	customers, suppliers	business partners	customers	customers, suppliers

Table 3 Partners in communication in forestry professions

In the next question, W group concentrated on different types of written texts they meet and work with in their profession. There were six possibilities to choose from or they could add some more. For five of the respondents, manuals and specialized literature, such as books and magazines, are common part of their work. Respondents W1, W2 and W4 admitted that they also use catalogues when looking for spare parts, tools, or other equipment. Four out of six respondents also need to communicate via email, and three respondents write letters to costumers or suppliers. Respondent W1 often submits request forms, respondent W2 writes invoices together with bills of delivery, and respondent W5 deals with other specialized texts than in books or magazines.

Forestry workers	W1	W2	W3	W4	W5	W6
What kind of written texts do you use in your work?	manuals, catalogues, specialized books and magazines, emails, letters to suppliers and customers, request forms	manuals, catalogues, specialized books and magazines, emails, invoices, bills of delivery	manuals, specialized books and magazines, letters and emails	catalogues	manuals, specialized books and magazines, translations of specialized texts	manuals, specialized books and magazines, emails, letters to customers and suppliers

Table 4 Types of texts in forestry professions

In Question W5, different places of communication in a foreign language were offered to forestry workers to choose from. Four respondents stated that they communicate in the forest and in the office. Respondents W2 and W4 also communicate in the workrooms. Respondents W3 and W5 only communicate in the forest, respectively in the office.

Forestry workers	W1	W2	W3	W4	W5	W6
Where do you usually use foreign language?	office, forest	office, forest, workroom	forest	office, forest, workroom	office	forest, office

Table 5 Places of communication in forestry professions

Forestry branch offers many types of positions in which different processes and procedures are done. Thus, six diverse forestry workers were interviewed. In Question W6, members of W group were asked to define and briefly describe the content of their work. Respondent W1's duty is to draw up projects for reforestation, build game-proof fences and protect the forest against pests by deploying trap trees and other insect traps. Respondent W2 is responsible for marketing of the products, and sale and after sales services of forest machinery. For respondent W3, the main responsibility lies in managing forest operations, such as silviculture and harvest, and managing subordinates. As an executive manager, respondent W4 directs the whole forestry company with all the duties and responsibilities that are included in this position. Respondent W6 deals with forest management, project management, and providing inspecting and consulting services for forestry companies. Respondent W5 is a representative of government supervision whose duty is to oversee the observance of Forest Law and other laws.

Forestry workers	W1	W2	W3	W4	W5	W6
Describe briefly the content of your work.	drawing up projects for reforestation, building game-proof fences, planning the position of insect trap trees and other traps	marketing, sale and after sales services of forest machines (harvesters etc.)	management of forest practices - silviculture and harvest operations, managing of forest workers	management of forest company established by the local authority	government supervision over forest management of different companies, with a special attention to observance of Forest Law and other laws	forest management through contract, project management, inspecting and consulting services for forest companies

Table 6 Content of work according to forestry workers

Since forestry is a technical discipline, in Question W7 forestry workers were asked to name what kind of technical equipment and tools they use in their work. The answers are arranged in *Table 7*. Five respondents in this group use typical forestry equipment, such as tape measures, rangefinders, callipers (optical or electronic) and altimeters. Respondent W4 works as an executive director in a municipal forestry company, he mostly deals with office

work and thus he uses different equipment, namely a car and a PC, than the rest of the respondents. Respondent W5 needs digital camera for recording her findings when inspecting forestry companies, and also a computer to write final reports. The character of work of respondent W2 influences the choice of tools he needs to use in his profession, namely hand and electronic repair tools.

Forestry workers	W1	W2	W3	W4	W5	W6
Do you use any technical equipment or tools in your work? What kind?	tape measure, rangefinder, electronic calliper, altimeter	repair tools (hand and electric), electronic calliper	tape measure, rangefinders, calliper, altimeter, GPS	car, PC	rangefinder, camera, PC	rangefinder, calliper

Table 7 Technical equipment and tools in forestry professions

With the technological and technical development of every branch, forestry has to keep up with the latest modern conveniences. In Question W8, forestry workers were asked to give examples of computer technologies or specialized software which is commonly used in their profession. As the following table shows, the most frequent software in forestry branch is a software for keeping records of silviculture and harvest operations. This software keeps records about numbers of transplants, kinds of trees, and amount of timber processed within felling. It is used by four out of six respondents. Respondent W2 works with special software in cut-to-length machinery. It is a special type of technology that operates the cutting device of a harvester. And respondent W5 uses different Microsoft applications in her work.

Forestry workers	W1	W2	W3	W4	W5	W6
Do you use any computer technology or specialized software in your work? What kind?	software for record keeping of reforestation and harvest	specialized software in harvesters	software for record keeping of wages, harvest, silviculture operations	software for record keeping of forestry operations, emails, data box	Microsoft applications	software for calculation of forestry operations

Table 8 Computer technology and specialized software in forestry professions

Question W9 deals with specific forestry calculations that are commonly used among forestry professionals. The analysis of W group's answers shows that each profession does specific types of calculation according to their content of work. Respondents W2 and W4 have to calculate prices. This process involves prices of products, timber or machinery. Respondents W1, W5 and W6 carry out calculations of stand volume or stand density in order to know the amount of wood and density of trees in the forest. On top of that, respondent W1 has to know the precise number of transplants per hectare and the length of game-proof fence.

Respondent W3 also prepares background data for wages and invoices. Respondent W5 calculates rotation period for determination of damage levels and fine. And respondent W6 deals with calculation of timber assortments and volume of timber to be felled in a certain season.

Forestry workers	W1	W2	W3	W4	W5	W6
Do you do any calculations in your work? What kind?	number of transplants per hectare, stand volume, fence metres	pricing and optimization	wage background data, invoice background data, project development	pricing	calculation of stand volume, stand density, rotation period for determination of damage levels and fine	calculation of stand volume, timber assortments and volume of timber to be felled in a certain season

Table 9 Calculations used in forestry professions

With the answers to Question W10, forestry workers described the types of technical documents, standards, tables or graphs they use in their work. Respondents W1 and W5 mentioned Forest Management Plan. It is a helpful document for forest owners that concerns all the important information about ways of forest management, types of forests, and age of forest, and includes a stand map, and a set of tables describing particular stands etc. Respondent W5 works with technical documents of EIA projects (Environmental Impact Assessment) when checking its correctness. Respondents W2 works with technical documents (manuals) for machines he sells. He has to use price lists of spare parts in the form of tables. Respondent W4 also needs manuals for machines, tools and chemicals. On top of that, his duties cover reading different forestry standards, tables for keeping records of forestry operations and graphs that show outcomes comparison. Respondent W3 uses performance standards of forest workers for regulation of cost in forestry operations. And respondent W6 deals with stand volume tables.

Forestry workers	W1	W2	W3	W4	W5	W6
Do you work with technical documents, standards, tables, graphs? What kind?	Forest Management Plan	technical documents for machines, tables and graphs	performance standards of forest workers for regulation of costs in harvest and silviculture operations	manuals for machines, tools, chemicals, forestry standards, tables for keeping records of forestry operations, graphs for comparing outcomes	technical documents of EIA project correctness, tables in Forest Management Plan	stand volume tables

Table 10 Technical documents, standards, tables, graphs in forestry professions

In their first question, subject teachers revealed their ability to speak some foreign languages. Four out of five teachers speak at least one foreign language, as seen in *Table 11*. Respondents T1 and T2 speak Russian and respondents T3 and T5 speak English. Respondent T4 admitted that she does not speak any foreign languages at all.

Subject teachers	T1	T2	T3	T4	T5
Can you speak any foreign languages?	Russian	Russian	English	none	English

Table 11 Use of foreign languages according to subject teachers

In Question T2, teachers were asked to think about certain situations in which students may use English in their future careers. Respondents T1, T3 and T5 agreed on guiding other hunters in the forest. It is an activity in which a guide helps with the orientation in the forest, and with shooting the game in the safe and correct place. Respondents T1, T2 and T4 think that English will help the students with understanding different written texts, such as specialized literature, manuals, leaflets and catalogues. Teachers T2, T4 and T5 predicted that spoken communication in expos, seminars, conferences or workshops may be such situation. On top of all that, respondent T2 recommended using English knowledge when browsing the Internet. Teachers T3 and T5 think that students will use English in trade with timber, respectively purchasing materials and devices from abroad. Respondent T4 reminded that a lot of software is still in English thus the use of this language is necessary.

Subject teachers	T1	T2	T3	T4	T5
Do you think that the students will use English in their future careers? When?	specialized books and magazines, hunter guide	expo, seminars, manuals and leaflets for forest machinery, internet	hunter guide, selling timber	catalogues, manuals, software, conferences	purchasing materials and devices, seminars, workshops, written communication, hunter guide

Table 12 Use of English in practice according to subject teachers

Question T3 deals with the use of different types of written texts in specialized subjects. Five possibilities were given to the respondents to choose from; manuals, catalogues, specialized books and magazines, and notes. All the respondents agreed on specialized literature, either books or magazines. Four out of five teachers use catalogues in their subjects. Respondents T1 and T4 also work with manuals. Four respondents utilize notes. Respondent T4 reminded encyclopaedias as the source of information. Respondent T2 stated that leaflets are a common part of his teaching practice.

Subject teachers	T1	T2	T3	T4	T5
What kind of written texts do you use in your subject?	manuals, catalogues, magazines	specialized books, notes presentations, leaflets	catalogues, specialized books and magazines, notes, articles	manuals, catalogues, specialized books and magazines, notes, encyclopaedias	catalogues, specialized books and magazines, notes

Table 13 Types of texts in subjects

The aim of Question T4 was to reveal what kind of audiovisual materials is used in specialized subjects. All of the respondents agreed that PowerPoint presentations are a usual part of their teaching practice. Four out of five teachers stated that they sometimes use Youtube videos containing relevant contexts for their subject. Respondents T1, T3 and T4 may also present other forms of videos, mostly on DVD.

Subject teachers	T1	T2	T3	T4	T5
What kind of audiovisual materials do you use in your subject?	DVD, PP presentations, Youtube	PP presentations, video, Youtube, internet	PP presentation, video	internet, Youtube, DVD, PP presentation	Youtube, PP presentation

Table 14 Types of audiovisual materials in subjects

Subject teachers of five specialized subjects interviewed in the research belong to the most important teachers in the forestry school since they directly prepare students for their future careers in forestry. Students in forestry schools usually study these subjects in the last two years of their secondary education therefore they could have enough knowledge to start an ESP course in forestry. Teachers' answers to Question T5 contain brief description of subject content as prescribed in SEP of SFS in Žlutice. Respondent T1 is a teacher of game keeping, thus history and traditions of game keeping, game care and keeping, hunting, cynology and falconry are the main points in this subject. Respondent T4 deals with protection of forest stands against abiotic, biotic and anthropogenic factors with the special attention to nature protection. Respondents T2, T3 and T5 teach typical forestry disciplines, and hence the content of their subject overlap in certain points. Respondent T2, for example, talked about process of raw timber production which is obviously a part of forest production, mentioned by respondent T5. To manage forest efficiently, it requires the knowledge of stand composition, forest reproduction, reforestation and forest tending. All these points were mentioned by respondent T3 and are in fact included in forest management, the subject of respondent T5. In view of the fact that respondent T2 teaches Harvest, he presented other basic points of his subject, such as structure and characteristics of wood, types of harvest, and machinery and technology used in forest harvesting. A forester's knowledge of laws plays a very important role in his/her professional life, thus basis of forestry law is a part of respondent T3's answer. Respondent T5 added other significant points, such as description of mensurational variables, and discovering stand volume, increment and growth of trees.

Subject teachers	T1	T2	T3	T4	T5
Can you briefly describe the content of your subject?	history and traditions, game care, game keeping, hunting, cynology, falconry	structure and characteristics of wood, types of harvest, machinery and technology, process of raw timber production	forest laws, stand composition, forest reproduction, planting stock, reforestation, forest tending	protection of forest stand against abiotic, biotic and anthropogenic factors, nature protection	characteristics of mensurational variables, discovering stand volume, increment and growth of trees, forest production, forest planning and management

Table 15 Content of subjects according to subject teachers

In Question T6, respondents listed what kind of technical equipment or tools they use or work with in their subjects. In conformity with the content of game keeping subject, respondent T1 enumerated lots of equipment, such as guns, knives, hunter's equipment, observation equipment, and accessories for hunting dogs. Respondent T2 talked about forest machinery and tools, saws, brush-cutters, and sawmill machines. The only equipments respondent T4 mentioned are insect traps and other traps. Respondents T3 and T5 agreed on callipers (for measuring thickness of a tree), altimeters (for height measurement), and a special equipment for distance measurement, namely tape measure and rangefinder. Respondent T3 also uses relascopes (for finding height of a tree, basal area of a tree, and a diameter of a tree along the bole), or planting bars (a special instrument that facilitates planting of transplants) in his subject.

Subject teachers	T1	T2	T3	T4	T5
Do you use any technical equipment or tools in your subject? What kind?	guns, knives, hunter's equipment, observation equipment, accessories for dogs	forest machinery, tools, saws, brush-cutter, sawmill machines	calliper, tape measure, altimeter, relascope, planting bar	insect traps and other traps	altimeter, calliper, rangefinder

Table 16 Technical equipment and tools in subjects

In the following question, respondents were asked whether they think it is necessary to describe the usage of such equipment in English. Respondents T2 and T5 gave negative answers. Others explained that there are only a few cases that should be useful to describe. Respondent T1 talked about guns, respondent T3 about callipers, altimeters and relascopes, and respondent T4 stated that to know how to deploy tree traps and insect traps can be beneficial.

Subject teachers	T1	T2	T3	T4	T5
Do you think it is necessary to describe the usage of such equipment or tool in English?	yes – how to use guns	no	yes – how to use calliper, altimeter and relascope	yes – how to deploy trap trees and insect traps	no

Table 17 Necessary descriptions of equipment according to subject teachers

Question T8 inquires whether the computer technology and specialized software is used in specialized subjects in SFS. Four out of five respondents enumerated some examples. Respondent T1 stated that he uses a laser shooting range, observation equipment and GPS. Respondent T2 mentioned special software in harvesters and sorters. Respondent T4 talked about software which maps pest occurrence in international scale. And respondent T5 explained that there are some very good programmes for Forest management, such as Sortbase or Taxless Choceň, and special software in field-map (for effective computer-aided field data collection and processing).

Subject teachers	T1	T2	T3	T4	T5
Do you use computer technology and specialized software in your subject? What kind?	laser shooting range, observation equipment, GPS	in harvester - felling records, MES (sorters)	no	mapping of pest occurrence	special software in field-map, Sortbase, Taxless Choceň

Table 18 Computer technology and specialized software in subjects

As forestry is a technical discipline, subject teachers have to deal with lots of calculations in their subject. Respondent T1 explained that even in Game keeping some counting has to be done, e.g. weight of hunted game, evaluation of trophies or calculations of damages. Respondent T2 stated that tree volume, wood moisture and stand density calculations are the most commonly used. Stand density calculation also occurred in the answer of respondent T5, together with calculations of e.g. standing volume or mean-tree volume. Respondent T3 deals with calculations of sample plots, number of transplants per hectare, or exploitation percentage. Respondent T4 provides calculations of pest-disaster area and number of adult pests. The complete list of calculations in particular subjects is presented in *Table 19*.

Subject teachers	T1	T2	T3	T4	T5
Do you use any calculations in your subject? What kind?	weight of hunted game, calculations of planning and keeping the game, evaluation of trophies, calculations of damages	tree volume, wood moisture, stand density	calculation of sample plots, number of transplants per hectare, exploitation percentage	calculation of pest-disaster area, number of adult pests	calculation of stand volume, mean-tree volume, stand density, species composition

Table 19 Calculations used in subjects

Question T10 logically comes after the previous one, with the request of considering if some of the calculation descriptions should be included in ESP activities. Four out of five respondents gave negative answers. Only respondent T4 agreed and explained that calculations of pest-disaster area and number of adult pests are done all over the world.

Subject teachers	T1	T2	T3	T4	T5
Do you think it is necessary to describe how to do the calculation in English?	no	no	no	yes – done all over the world	no

Table 20 Necessary descriptions of calculations according to subject teachers

The next question, Question T11, provides information about technical documents, standards, tables and graphs used in specialized subjects. All of the respondents agreed that a certain amount of these written documents occur in every specialized subject. Three respondents (T1, T4, T5) deal with some kind of technical documents in the form of manuals or Forest Management Plan. Respondents T1, T2, T3 and T5 also work with tables, e.g. tables for timber scaling, volume tables or mensurational tables. The complete list is presented in *Table 21*.

Subject teachers	T1	T2	T3	T4	T5
Do you work with technical documents, standards, tables or graphs in your subject?	technical documents, standards, tables, graphs	tables for timber scaling, tables for measurement and grading of timber	standards, tables and graphs	manuals for traps, pest standards	stand volume tables, form-class volume tables, mensurational tables, Forest Management Plan

Table 21 Technical documents, standards, tables and graphs in subjects

Three respondents did not agree with the statement that students should learn how to work with technical documents, standards, tables or graphs in English. Respondents T2 and T3 agreed and explained in which cases they should learn it. Respondent T2 requires working with tables for timber scaling and for measurement and grading of timber. These might be

useful when trading timber abroad. And respondent T4 thinks that manual for traps and pest standards might be a useful source of English words.

Subject teachers	T1	T2	T3	T4	T5
Do you think that students should learn how to work with technical documents, standards, tables, graphs in English?	No	yes – tables for timber scaling and for measurement and grading of timber	no	yes – manuals for traps, pest standards	no

Table 22 Necessity of working with technical documents, standards, tables, graphs in English according to subject teachers

In Question T13, respondents were asked to enumerate some key words in order to provide the researcher basic information for building a word bank. Respondent T1 talked about different hunting dogs' breeds, types of game, types of guns and ammunition, and hunting equipment. Respondents T2 thinks that students should distinguish types of trees, wood structure and its defects, types of forestry machinery, types of sawmills machines and description of a chainsaw in English. For respondent T3 basic orientation in types of reforestation, forest tending and seed production, including nursery management, is important. According to respondent T4, students should identify the most common pests, and protection and defence against them. Respondent T5 chose description of mensurational variables and standing volume, description of Forest Management Plan and planning, and expressions included in Forest Law 285/95.

Subject teachers	T1	T2	T3	T4	T5
Can you list some key words for the basic orientation in your subject?	hunting dogs, game, guns, ammunition, hunting equipment	types of trees, wood structure, wood defects, bolts, tools, forest machinery, sawmills machines, saws	reforestation, forest tending, seed production and nursery management	pests, protection and defence, nature protection	mensurational variables, stand volume, Forest Management Plan, Forest Management Planning, Forest Law 285/95, time and spacial arrangement

Table 23 List of key words according to subject teachers

In Question T14, teachers presented their opinion on technological and procedural descriptions and explanations that are essential for understanding the subject. Respondent T1 assumed that explaining ruler for hunter's guides, description of game and hunting strategies are crucial. Respondent T2 believes that basic description of raw timber production process is adequate. For respondent T3 insisted on explanations of improvement cutting process,

planning clear-cut restoration, and reforestation process. Respondent T4 thinks that students should know how to install insect traps, how to count a number of pests, and how to plan installation of traps for the next season. And according to respondent T5, the process of height and thickness tree measurement, discovering the age of trees and orientation in the forest according to stand map might be beneficial.

Subject teachers	T1	T2	T3	T4	T5
Can you list some cases in which it is important to describe and explain some kind of technology or processes in your subject?	rules for hunter's guides, description of game, hunting strategies of dog breeds	basic description of raw timber production process	improvement cutting process, plan for clear-cut restoration, reforestation process	insect trap installation, number of pests evaluation, planning of insect traps for the next season	measuring of height and thickness of trees, discovering the age of trees, orientation according to stand map

Table 24 List of technological and procedural descriptions according to subject teachers

At the end of the interview, subject teachers were asked if they were willing to co-operate in developing ESP activities for students of SFS in Žlutice. All of them agreed.

Subject teachers	T1	T2	T3	T4	T5
Would you be co-operative in developing ESP activities for students of our school?	yes	yes	yes	yes	yes

Table 25 Willingness to co-operate in developing an ESP course

The analysis shows that the theoretical knowledge which is obtained in the school has its connection to practical life. All the specialized subjects contain at least some features that are utilized in professional life. Thus these mutually connected features may become the basis of developing vocabulary and communicative situations, either written or oral, which might be incorporated in ESP activities for secondary school students. Even though there are lots of calculations in the branch, most of the subject teachers do not recommend teaching those in English. On top of that, all the respondents confirmed the assumption that dealing with written texts, in the form of manuals, catalogues, tables, standards etc., is a common part of forestry professions. For better understanding an English-Czech mini dictionary of forestry English is included in Appendix 8.

Questionnaire Outcomes

The questionnaire was presented to 14 students of SFS in Žlutice. Their age ranges from 17 to 20 years. There are two students at the age of 17, eight students at the age of 18, three students at the age of 19, and one twenty-year-old student. The average age of students is 18.2 years. Among the students, there are nine boys and five girls.
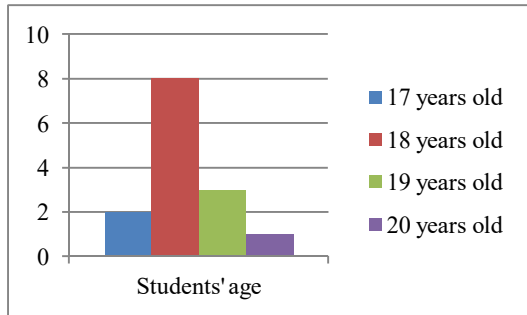
Graph 1 Students' age
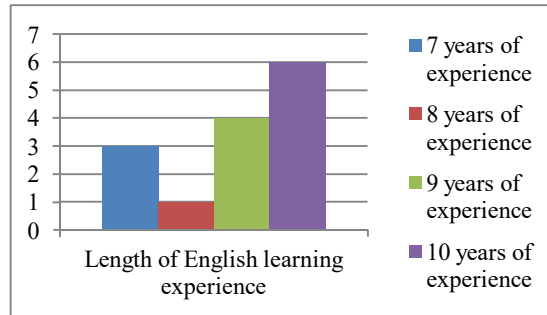
Graph 2 Length of English learning experience

At first students were asked how long they have been learning English. The average length of English learning experience is 8.9 years. There are three students who have been learning English for 7 years, one student with 8 years of experience, four students with 9 years of experience and six students with 10 years of experience.

In Questions S2 to S6, students were requested to state the length of specialized subjects' learning experience. They answered that they have been learning Silviculture for 1 year, Harvest for 1 year, Game keeping for 3 years, Forest protection for 2 years, and Forest management for 1 year.

In Question S7, students rated their interest in specialized subjects chosen for this research on the scale 1 – 5. They could choose from 1 – very interested, 2 – interested, 3 – on average, 4 – not very interested, and 5 – not interested. It means that the lower rate they choose, the better they evaluate the subject. The survey shows that students are very interested in Silviculture in four cases, interested in three cases, interested on average in five cases, not very interested in one case, and not interested at all in one case. The average rate of this subject is 2.4. The second specialized subject is Harvest. Students rated it in five cases as very interested, in three cases as interested, in four cases as interested on average, in one case as not very interested, and in one case as not interested at all. Its average rate among students is 2.2. Students evaluated Game keeping as very interested in eight cases, interested in three cases, interested on average in one case, and not interested at all in two cases. This subject seems to be the most popular of all, with its average rate 1.9. Students are very interested in Forest protection in one case, interested in seven cases, interested on average in four cases, and not very interested in two cases. The average rate of this subject is 2.5. The least popular

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subject is Forest management, with its average rate 2.8. Students evaluated it in two cases as very interested subject, in three cases as interested, in six cases as interested on average, in one case as not very interested, and in two cases as not interested at all.
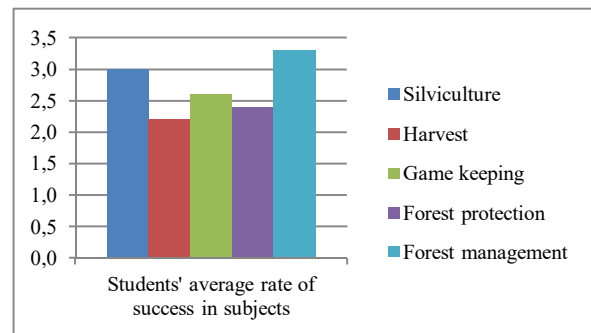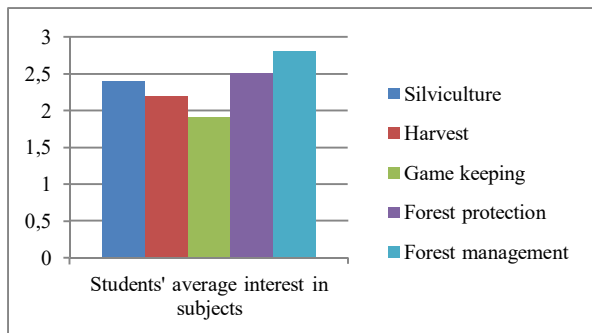
Graph 3 Students' average interest in subjects   *Graph 4* Students' average rate of success

In the next question, Question S8, students were asked to evaluate their rate of success in specialized subjects on the scale 1 – 5; 1 – excellent, 2 – very good, 3 – good, 4 – satisfactory, 5 – unsatisfactory. It means that the lower rate they choose, the more successful they are. One out of fourteen students rated their success in Silviculture excellent, two very good, six good, and five satisfactory. The average rate of success in this subject is 3. Students evaluated their rate of success in Harvest excellent in two cases, very good in eight cases, good in three cases, and satisfactory in one case. On average, students succeed at rate 2.2. The success in Game keeping is rated excellent in one case, very good in seven cases, good in four cases, satisfactory in one case, and unsatisfactory in one case. In Forest protection, the rate of success is evaluated in one case excellent, in eight cases very good, in four cases good, and in one case satisfactory. The average rates in Game keeping and Forest protection are 2.6, respectively 2.4. Students' rate of success is the worst in Forest management, on average 3.3. Students consider their success at rate very good in two cases, good at seven cases, satisfactory in four cases, and unsatisfactory in one case.

In general, from the comparison of students' interest in different specialized subjects and students' rate of success emerges that there is hardly any correlation between the interest in subject and success in subject. Students are the most interested in Game keeping although they do not achieve the best rate of success in it. Similarly, they achieve second best rate of success in Forest protection but their evaluation of interest is second worst. However, Forest management belongs to subjects that students are not very interested in and their success in the subject is also low. It is probably because of higher demands on learning and the fact that this subject deals with a lot of highly specialized calculations.

In Question S9, students expressed their opinion on the possibility of using English in their future career. There were also encouraged to mention some examples of situations. Thirteen students predicted that they will use English in situations such as working abroad (six students), attending lectures or conferences (five students), and trading with timber (two students). Other answers included talking to Englishman, going on holidays, reading manuals, purchasing tools and machines, using computer software, guiding hunting guests, or participating in game calling and bugling contests. It emerged that students have a clear idea in which situations they might use English in the future for the purpose of communication in the profession.

Question S10 deals with students' plan to go on to university. Half of the students gave positive answer. Three out of these students want to go on to Faculty of Forestry in Prague, three students desire to attend Faculty of Game keeping in Prague, one student wants to attend Faculty of Environmental Sciences, one student want to continue on to the University of Veterinary, and one is not decided yet. Two students are still deciding between Faculty of Forestry and Faculty of Game keeping.

In the following question, students should evaluate four language skills, reading, writing, listening and speaking, on the scale 1 – 4 according to their preferences, where 1 is very important, 2 is important, 3 is not very important, and 4 is useless. It means that the lower rate students choose for the skill, the more it is preferred. Seven students think that reading is very important, six students think it is important, and one student thinks that it is not very important. Writing is rated very important by six students, important by seven students, and not very important by one student. Six out of fourteen students think that writing is very important, seven students think it is important, and one student thinks that it is not very important. Listening is very important for eight students, important for four students, and not very important for two students. However, speaking is very important for most of the students, only three of them evaluated it as important. Students in general prefer speaking to other language skills which are preferred at the average rate equally.
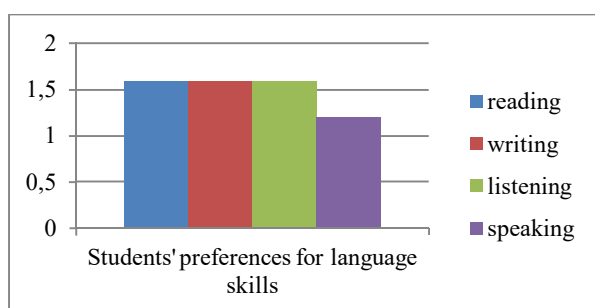
Graph 5 Students' preferences for language skills

In Question S12, students' self-evaluation of English level in different categories is observed. They should decide whether their level is very good, good, average, or low. Reading is rated very good by two students, good by six students, average by four students, and low by two students. Seven students think that they are on good level in writing, five students on average level, and two students on low level. Five students suppose that their speaking level is good, six students evaluate it average, and three students low. Listening is rated very good in two cases, good in five cases, average in six cases, and low in one case. Grammar is rated very good by one student, good by four students, average by six students, and low by three students. Very good vocabulary knowledge is presented by three students, good knowledge seven students, average knowledge three students, and low knowledge only one student. Two students think that they are very good at pronunciation, eight evaluate it good, one average, and three low. Communication skill is rated very good by one student, average and low by two students. Most of the students think that they are good at communication.
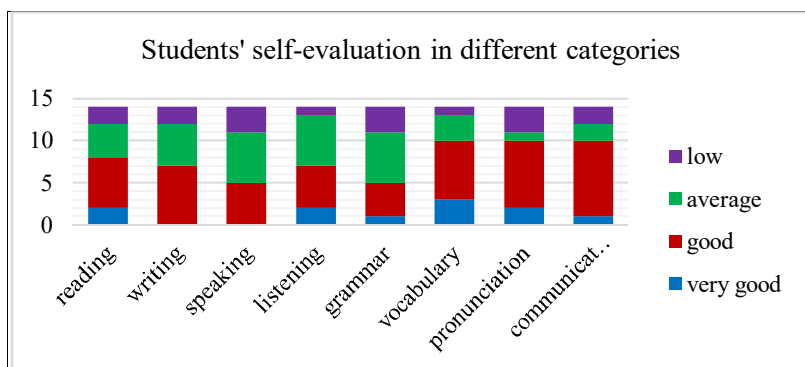
Graph 6 Students' self-evaluation in different categories

In the next question, students should think about what kind of texts they would prefer. Five options were given to choose from. Abstracts from specialized book are preferred by eight students, abstracts from manuals and catalogues by three students, and articles from specialized magazines and from the Internet by five, respectively four students.
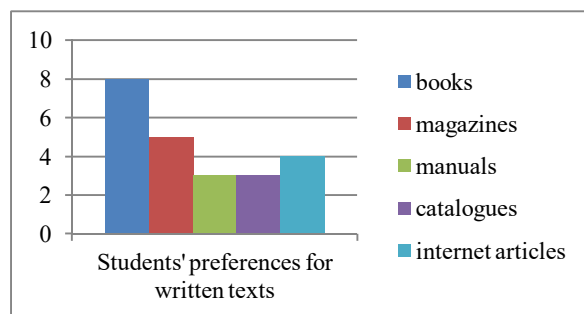
Graph 7 Students' preferences for written texts
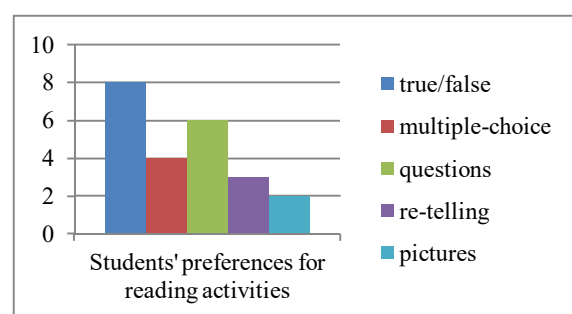
Graph 8 Students' preferences for reading activities

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Question S14 deals with students' preferences for activities checking reading comprehension. Most of the students prefer true/false activities. This option was chosen by eight students. Six students like comprehension questions, four students multiple-choice activities, three students prefer re-telling, and two students think that pictures should be included when checking reading comprehension.

In Question S15, students were requested to predict what pieces of writing they will probably use in their future careers and therefore are necessary to practice in advance within ESP learning. In most cases, students prefer writing emails and reports. Teacher's guidance is demanded in writing both letters and notes in three cases. Students also mentioned the need of drawing up requests, presentations, and contract. The overview is presented in *Graph 9*.
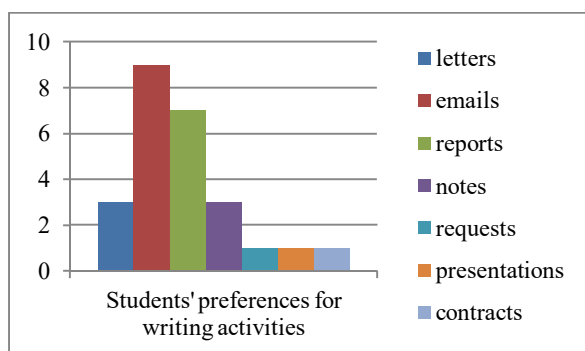
Graph 9 Students' preferences for writing activities
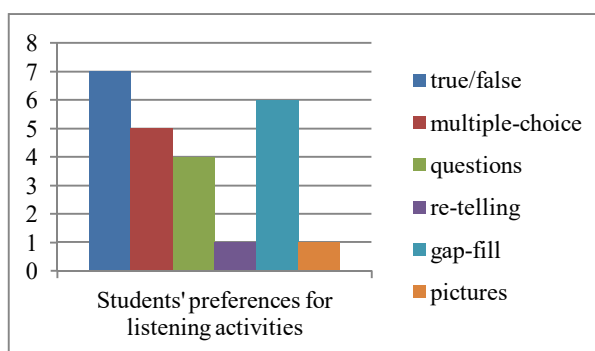
Graph 10 Students' preferences for listening activities

Question S16 deals with another receptive language skill, listening. Students decided which activities they prefer in order to check listening comprehension. Most of the students think that true/false and gap-filling activities are beneficial to their listening skill development. Then multiple-choice activities and comprehension questions might be useful for them. Only one student chose re-telling activity and working with pictures when checking comprehension.

The most preferable language skill for students is speaking. Students would like to develop speaking in role-play activities and discussion within the class. Only two students prefer questions and answers as a suitable practice of speaking. Five students think that giving presentations should be also a part of developing speaking skill.
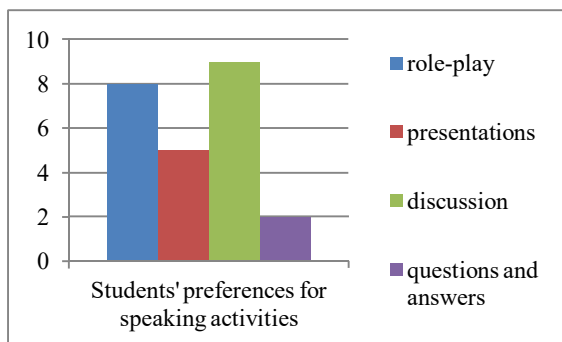
Graph 11 Students' preferences for speaking activities
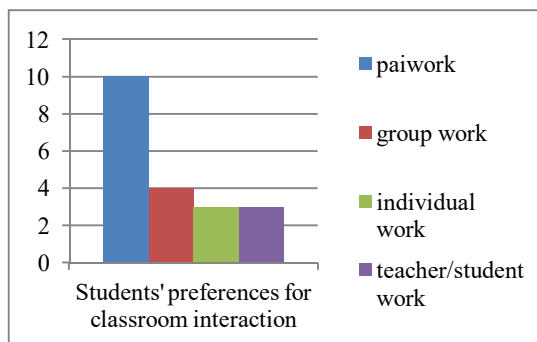
Graph 12 Students' preferences for classroom interaction

In Question S18, students were asked to choose what kind of classroom interaction they prefer. Vast majority of them enjoy working in pairs. Group work is suitable for four students. Individual work and teacher/student work is preferred by three students. The overview is presented in *Graph 12*.

Question S19 deals with activities that might be used in vocabulary practice. Students mostly prefer matching words and pictures and matching two expressions activities, in twelve, respectively 10 cases. They evaluate gap-filling activities and vocabulary games the same as they were chosen by five students. Only three of them selected an activity which is constructed in the form of matching words and their definitions. The comparison is shown in *Graph 13*.
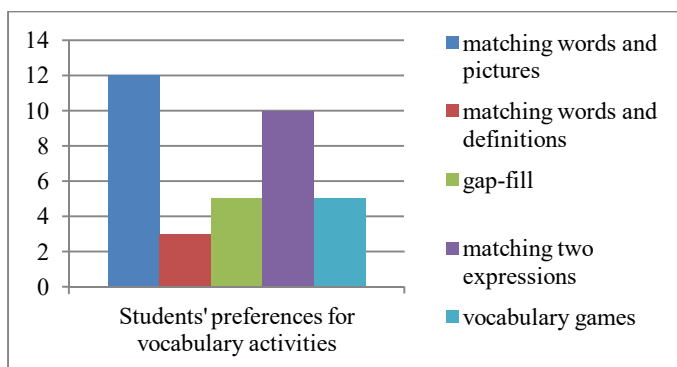
Graph 13 Students' preferences for vocabulary activities

Surprisingly, nearly 80% of students agree that grammar should be a part of ESP course. They suggest that being grammatically correct is important from many reasons, e.g. it is the basis of language, it looks better when we are grammatically accurate, we must broaden our horizons, or if we write abroad, we do not want to look like fools. Only three students out of fourteen think that it is not necessary.

In the last question, students were asked whether they would like to attend an ESP course in the school. It seems that learning Forestry English is for nearly half of the students

something superfluous. However, eight students would attend a course if it took place in the school.

Material Analysis

The analysis of materials available in the Czech Republic for forestry ESP activities was conducted on the basis of the only course book *Career Path Natural Resources 1 Forestry*. It was published in 2015 by Express Publishing. The course book is a part of a series of ESP publications which help develop the language skills professionals and students need to succeed in a professional work situation. The course consists of a student's book, a teacher's book and two class audio CDs. Two sample pages are included in Appendix 7 and the complete list of activities in Appendix 4.

The course book is organized into three Books according to three levels of difficulty and offers over 400 vocabulary items and phrases. Each Book consists of fifteen units that discover several topics. Book 1 deals with the purpose of forestry, parts of trees and forests, products, forestry equipment and tools, and types of trees. Book 2 discusses tree growth, forest inventory and plans, ecosystems and land classification, silviculture procedures and processes, harvest procedures and sawmills. Book 3 provides topics about types of forestry, forest evaluation and optimization, geographic data and topography, threats for forests and animals, heavy machinery, and environmental issues. Each Book is accompanied by a word bank in alphabetical order in which every word is explained in English. Units are well arranged into six sections – get ready, reading, vocabulary, listening, speaking, and writing, and nine activities.

The course book was analyzed according to seven criteria in order to gather information about language skills activities, vocabulary and grammar, and types of texts. The final outcome of this analysis might show whether this course book is suitable for students of secondary schools.

First of all, types of reading activities were analyzed in Criterion 1. Each unit contains one model text with two activities, a pre-reading activity and a post-reading activity. Before the actual reading, students are encouraged to discuss two questions concerning a presented topic. There are forty-five pre-reading pairs of questions in the course book. It means that the same activity is present in every unit. Its purpose is probably to find out the background knowledge of students in a particular topic. After reading, three types of activities check reading comprehension. There are twenty multiple-choice activities, twenty-three true/false

activities and two activities, in which students complete a chart, in total. The particular distribution of reading activities in Books is shown in *Graph 14*.

Reading activities
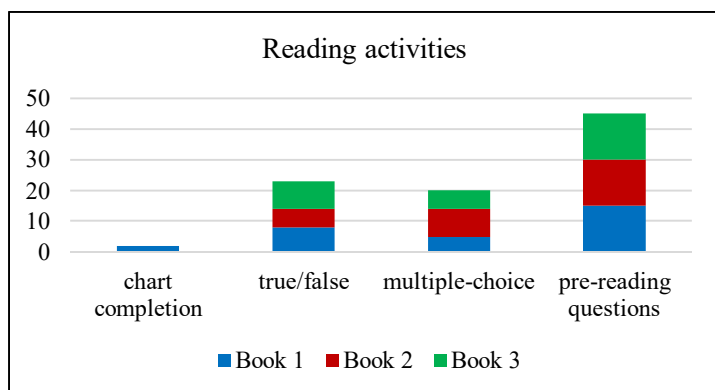
Graph 14 Reading activities in *Forestry*

In Criterion 2, types of listening activities are analyzed. In each unit two listening activities are presented. The first activity is always a true/false, multiple-choice or correct/incorrect activity. Its aim is to check general understanding. The second activity always concerns gap filling in which one, two or three words are required. Its aim is to listen for specific information, usually vocabulary from the model text. There are thirty-two true/false activities, twelve multiple-choice activities, forty-five gap-filling activities, and one correct/incorrect activity in all three Books altogether. The listening activity distribution is presented in *Graph 15*. On top of that, the model text is also recorded so it may be played together with the reading activity or after that. It may also serve as a pronunciation model for students. All the recordings are clearly presented. Although they cannot be considered authentic as they were not recorded in natural environment, they may be used in an ESP course for secondary school students.

Listening activities
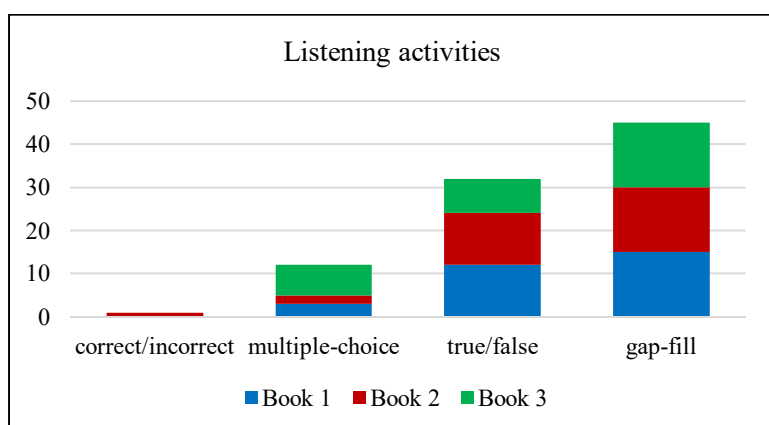
Graph 15 Listening activities in *Forestry*

The third criterion examines speaking activities in every unit. In the speaking section of a unit there is always a role-play activity for pairs, so there are forty-five speaking activities

altogether in the course book. The roles are clearly described for both participants, with several expressions recommended to use while speaking. These expressions are also included in the previous listening activity. Besides these activities, at the beginning of each unit Get ready! section also deals with speaking. The instruction does not say how to manage the interaction but a pair or small group discussion can be effective.

Another criterion is concerned with different writing activities. There is in fact only one writing activity in each unit, posted at the end. It serves as a follow-up activity for the previous speaking section. It means that the last four activities, listening, speaking and writing, are entwined and thus should be done one after another and at the same time in one lesson. The activities are engaged in several types of writing. Most often students are asked to write a report (in eight cases), emails (in seven cases), or take notes (in seven cases). They also fill in several forms, write a memo or design a poster etc. There are forty-five writing activities in all Books.

The fifth criterion explores what types of vocabulary activities are present in *Forestry* course book. The distribution of activities in Books is presented in *Graph 16*. Each unit contains two vocabulary activities, one activity usually requires gap filling (in forty-three cases), and the second one deals with matching words with definitions (in thirty-one cases), grouping words (in nine cases), two-option choice (in six cases), or chart completion (in one case). The gap-filling activities are either in the form of choosing a word from the list or writing a word that is similar in meaning to the underlined part of a sentence. All the activities are designed to practise key vocabulary from the model text.
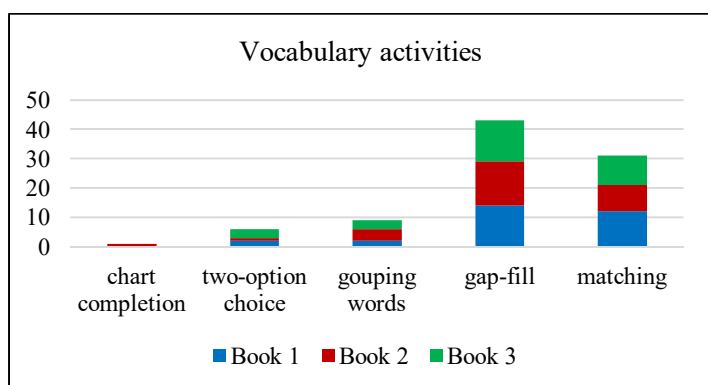
Graph 16 Vocabulary activities in *Forestry*

Criterion 6 examines grammar activities. Although every unit and every page was searched, not a single grammar activity was found. It is a question whether grammar should be included in an ESP course. It depends on the English level of students and their

preferences. This can be re-evaluated during or after the course and appropriate remedial actions may be taken.

In the last criterion, different types of model texts were explored. There are in fact forty-five model texts in all the Books, one text per a unit. Their aim is to present key vocabulary terms and phrases which are practised further in the unit. The reading passages may be considered realistic but not authentic, taken from the real life situations. There is a variety of texts in the *Forestry* course book, in most of the cases in the form of textbook excerpts (ten cases), emails (four cases), webpages (four cases), articles (four cases), manual excerpts (three cases), guides (three cases), or reports (three cases). Other reading passages include memos, brochures, advertisements, product listing etc.

Conclusion

When we sum up all the results from the interviews, the questionnaire and the course book analysis, we come to several conclusions. The course book contains lots of topics which are in accord with the findings from the interviews. The forestry workers and subject teachers suggested some areas of work or study in which secondary students might be educated in an ESP course, namely in silviculture, harvest, forest management and forest protection. These areas were mentioned by both the workers and the teachers, and the course book contains units which deal with all of them in a certain amount. As game keeping is not the primary forestry activity, the course book does not contain any topics concerning this field. Moreover, the interview results indicate which vocabulary items might become the core of specialized vocabulary for model texts and activities suitable for secondary school students. Types of written texts mentioned by the workers and teachers and preferred by students can be found in the course book as well. Excerpts from specialized literature, manuals, catalogues and emails might represent the basis of model texts. On top of that, several authentic materials might be adapted for the use in an ESP course to be more understandable by secondary school students.

Generally speaking, specialized subjects are acknowledged in a positive way although students sometimes do not achieve excellent results. Students are aware of the situations in which they can communicate in English though they prefer oral communication. They have a good notion of what kind of activities developing reading, listening, writing, and speaking they prefer in their language learning. Pairwork activities are considered the most favoured in students' opinion. And some of the students appreciate the idea of having an ESP course in the school.

Activities presented in the course book also correspond with students' preferences for activities developing different productive and receptive language skills. Most of the students prefer true/false activities, multiple-choice activities and questions when reading or listening comprehension is checked. The course book deals with role-play activities and discussion which were chosen by the students as the most popular activities in the questionnaire. On top of that, writing emails, notes or reports is developed in the course book.

V. IMPLICATIONS

This chapter consists of three parts: implications for designing ESP activities, limitations of the research and suggestions for further research. The first part deals with the implications of this research for language teachers as ESP activity designers. The second part specifies the limitations of the research. And the third part tries to illustrate further directions of the research in designing ESP activities for secondary school students of forestry.

Implications for Designing ESP Activities

ESP courses which develop language skills in numerous academic or professional disciplines have become widespread all over the world. Thus designing ESP activities follows this trend and becomes a part of necessary duties for ESP course designers. Although most of the courses are developed for university students or professionals already working in the branch, secondary school students might be involved as well. These students often do not continue on to universities and start working in their industry immediately after the school leaving exams. With continuing globalization, such professional beginners have to deal with other professionals from other countries who speak different languages. For all of them, English, as a universal language, remains the only option that can be used for communication.

Designing ESP activities is a time consuming and demanding work. At the beginning, it requires needs analysis in order to find out what should be included in the activities. In other words, activity designers have to explore the content of the activities. For this purpose, an extensive research is conducted among professionals, subject teachers or other persons who are connected to the particular branch. In the case of a research for this thesis, a survey among forestry workers and specialized subject teachers was done. These respondents provided key information about vocabulary and processes necessary for designing ESP activities for students of SFS.

It is obvious that to design ESP activities for forestry students topics from forestry branch are included. For the purpose of ESP activities for secondary school students no calculation descriptions should be involved. Their need of Forestry English does not require explaining any technical features of the field in academic language but rather in a more professional style as students will have to communicate with customers, suppliers or co-workers on daily basis about forest products and machinery, or with hunting guests about guns, game and hunting strategies in the Czech Republic. When designing ESP activities for these students, designers should stick to topics which deal with basic procedures and equipment in silviculture, harvest, forest protection, and game keeping. In silviculture, it

might be useful to describe the advantages and disadvantages of reforestation (artificial and natural) and the principles of improvement cuttings. Harvest offers many chances to talk about the raw timber processing, from actual felling and transport to processing in sawmills. As environmental protection is a hot topic in the world nowadays, students should also know how to explain forest protection in the Czech Republic to foreigners in English. And what is more, game keeping and hunting has a long tradition in the country so students will definitely meet hunters who come from different countries to get a game trophy. In terms of vocabulary, students should be educated in types of trees, heavy machinery, game, and tools such as calliper, rangefinder or altimeter.

The second part of needs analysis consists of a survey among secondary school students who would become future ESP learners. Its aim is to obtain information about students' learning styles and preferences for language learning. It will help activity designers distinguish what kind of activities they should prepare for an ESP course in order to meet students' needs. Traditional ELT involves developing certain language skills in different types of activities, therefore an ESP course should do the same. All the productive and receptive skills should be developed accordingly. For the purpose of developing reading, appropriate model texts must be chosen, and pre-reading and post-reading activities prepared. Such model texts should reflect the situation in a professional field. In forestry it involves reading reports, emails, specialized literature, manuals, and catalogues. An effective way to start reading is to discuss on the particular topic or describe pictures which might accompany the text. After the reading students may check their understanding in true/false and multiple-choice activities, or they may answer several questions in order to practise process descriptions. Although writing is not considered very popular activity among students, it is important to develop this skill as well; especially writing emails or letters, reports or notes. Listening is tightly connected to speaking. When students communicate orally they have to also listen to the partner and understand. However, listening skill might be trained in several separate activities. Students prefer true/false or multiple-choice activities, as well as gap-filling and answering questions. For developing speaking skill, designers should be aware of the situations in which professionals in the branch communicate with other people. Mostly face-to-face communication is done, thus role-play and discussion activities should be prepared for the students. On top of that, when dealing with hunting guests students will have to give a short presentation therefore speaking monologues is also required. All the activities need different approach to the classroom interaction. It follows that the activity designers should consider the most effective interaction for every activity, such as pairwork, group work, individual

work, or interaction between a teacher and a student. It is in question whether grammar should be included. The survey shows that students prefer learning grammar in ESP as well. On the other hand, the analysis of an ESP course book revealed that grammatical activities do not have to be a part of ESP course. Students should start an ESP course only when a higher level of English is reached, thus the activity designers should work with their current knowledge of grammar and focus mostly on the development of specific lexis.

During the research, activity designers should look for materials that might be used. It is effective to search for similar ESP courses in order to have a hint of what is available on the market and what can be used as a model, especially in the case when activity designers have no or low experience with ESP.

Limitations of the Research

There are several limitations of the research that must be taken into consideration. First of all, the research was conducted among limited number of forestry workers recommended by subject teachers, subject teachers and English students of the 3rd grade of SFS in Žlutice. Surveys covering larger amount of respondents would bring more information related to the research and therefore more data. The findings would be more reliable. There is also the question of time span. Each interview took about 90 minutes. If there was more time spent on interviewing, respondents would probably provide more detailed answers. With regard to limited choice of ESP courses in forestry in the Czech Republic, only one course book was analyzed. Another, important aspect influencing the research was related to methodology. In theory, observation of the professionals during the work is recommended as one of the methods used in ESP needs analysis. Since this method is extremely time consuming and demanding in organisation, requiring permission from the management of the companies, it was not chosen. And finally, the research did not consider the viewpoint of English teachers since there is only one English teacher in SFS in Žlutice.

Suggestions for Further Research

As it was mentioned in the part dedicated to limitations of the research, it would be beneficial to extend the survey for a longer time span and for more respondents. The future research may include students and subject teachers from other SFSs in the Czech Republic, namely SFS in Hranice, Písek, Trutnov and Šluknov. This would require their co-operation in the research. Nonetheless, in case of their agreement, it would be beneficial for all the

students because a collective project would result in a proper ESP course which could be used in all the SFSs. Simultaneously, other English teachers from SFSs could be involved in the research in order to gain their opinion on ESP teaching, especially in terms of vocabulary, grammar and developing language skills. Since English is a part of an educational programme in forestry departments in Prague and Brno, another possibility to cooperate with them occurs, e.g. in terms of material production.

VI. CONCLUSION

The diploma thesis deals with designing ESP activities for secondary school students in forestry branch. Students in secondary schools usually learn English in a traditional way but in the last few years the need of Forestry English has become urgent even in the Czech Republic. In the professional field, students may experience different communication situations in which Forestry English is a necessity. They may communicate with customers while selling timber, or suppliers of numerous equipment, tools, and machinery. They may be asked to guide a hunting guest. If these situations occur, students should be prepared to respond accordingly. The possible way to develop their Forestry English is to design ESP activities for use in the school. ESP is a branch of ELT which develops different language skills together with communicative skills in various academic and professional fields. ESP courses are tailored to meet specific students' needs in specific disciplines, with their specific activities and methodology that might or might not be the same as in General English. The thesis explored ways of designing ESP activity for the purpose of satisfying students' needs for Forestry English. The idea stemmed from the theory and practice of ESP course designing in other academic and professional fields. It requires a research among professionals, subject teachers and students in order to find out the content of the activities and types of activities.

According to the findings attained during the survey the content of ESP activities depends on professionals and subject teachers who are the main authorities to decide. As English teachers usually do not understand the discipline they should be instructed by these authorities. They provide information about specialized vocabulary and descriptions of processes in a particular professional field that are necessary for secondary school students to learn in English. Designing ESP activities also concentrates on methodology which originates in traditional ELT with a special regard to students' learning preferences and strategies and the purpose of learning. Several types of activities are therefore used to develop language and communicative skills. These activities must be chosen precisely and with the notion of effective contribution to students' language development. Moreover, the variety of activities should be prepared for all the productive and receptive skills. This involves practising reading, listening, writing and speaking according to the preferences of students and needs of the branch. If all these tasks are fulfilled, then ESP activities will help students not only develop their English level but also attain special knowledge in the field which probably becomes their future career.

It does not matter whether students continue on to a university or start working in the industry, Forestry English will give them a competitive advantage and independence which may determine their future life.

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Appendix 1: Interview form for forestry workers

Name:

Age:

Education:

Work position:

Length of experience:

W1. Do you use English in your work? (or another foreign language?)

W2. What kind of communication situations do you use a foreign language in?

• face-to-face   • phone calls   • emails   • others: _____

W3. Who do you usually communicate with?

• management   • co-workers   • subordinates   •customers   •suppliers

• others: _____

W4. What kind of texts do you use in your work?

• manuals   • catalogues   • specialized books   • letters to customers/suppliers

• emails   • specialized magazines   • others: _____

W5. Where do you usually use foreign language?

• office   • forest   • workroom   • other places: _____

W6. Describe briefly the content of your work:

_____

W7. Do you use any technical equipment or tools in your work? What kind?

_____

W8. Do you use any computer technology or specialized software in your work? What kind?

_____

W9. Do you do any calculations in your work? What kind?

_____

W10. Do you work with technical documents, standards, tables, graphs? What kind?

Further comments:

Dotazník pro pracovníky v lesnictví

Jméno:

Věk:

Vzdělání:

Pracovní pozice:

Délka praxe v oboru:

W1. Užíváte ve své praxi angličtinu: (popřípadě jiný cizí jazyk – uveďte jaký)

W2. Při jaké komunikaci využijete cizí jazyk? (vyberte)

• osobní   • při telefonickém rozhovoru   • při emailové komunikaci

• jiné: _____

W3. S kým obvykle komunikujete? (vyberte)

• s vedením   • se spolupracovníky • s podřízenými   •se zákazníky   •s dodavateli

• jiné: _____

W4. S jakými druhy textu se ve své profesi setkáváte? (vyberte)

• manuály   • katalogy   • odborná literatura   • dopisy odběratelům/dodavatelům

• emaily   • časopisy   • jiné: _____

W5. Na jakých místech cizí jazyk obvykle používáte? (vyberte)

• v kanceláři   • v lese   • v dílně   • jinde: _____

W6. Popište stručně náplň vaší práce:

_____

W7. Používáte ve svém oboru nějaké technické vybavení nebo nástroje? Jaké?

_____

W8. Využíváte ve svém oboru výpočetní techniku a speciální software? Při jaké příležitosti?

_____

W9. Používáte ve svém oboru výpočty, kalkulace? Při jaké příležitosti?

_____

W10. Pracujete ve svém oboru s technickou dokumentací, normami, tabulkami, grafy?
Uveďte příklad.

Připomínky, poznámky:

Appendix 2: Interview form for subject teachers

Name:

Age:

Education:

Subject:

Length of experience:

T1. Can you speak any foreign languages?

T2. Do you think that the students will use English in their future careers? When?

_____

T3. What kind of written texts do you use in your subject?

• manuals   • catalogues   • specialized books   • specialized magazines   • notes

• others: _____

T4. What kind of audiovisual materials do you use in your subject?

_____

T5. Can you briefly describe the content of your subject?

_____

T6. Do you use any technical equipment or tools in your subject? What kind?

_____

T7. Do you think it is necessary to describe the usage of such equipment or tool in English?

_____

T8. Do you use computer technology and specialized software in your subject? What kind?

_____

T9. Do you use any calculations in your subject? What kind?

_____

T10. Do you think it is necessary to describe how to do the calculation in English?

_____

T11. Do you work with technical documents, standards, tables or graphs in your subject?

T12. Do you think that students should learn how to work with technical documents, standards, tables, graphs in English?

_____

T13. Can you list some key words for the basic orientation in your subject?

_____

T14. Can you list some cases in which it is important to describe and explain some kind of technology or processes in your subject?

_____

T15. Would you be co-operative in developing ESP activities for students of our school?

_____

Further comments:

_____

Dotazník pro učitele

Jméno:

Věk:

Vzdělání:

Vyučovaný předmět:

Délka praxe v oboru:

T1. Používáte cizí jazyk? Uveďte jaký?

T2. Myslíte si, že absolventi využijí angličtinu v praxi? Při jakých příležitostech?

_____

T3. S jakými druhy psaného textu v předmětu pracujete? (vyberte)

• manuály   • katalogy   • odborná literatura   • odborné časopisy   • poznámky

• jiné: _____

T4. Jaké zdroje využíváte pro prezentaci audiovizuálního materiálu?

_____

T5. Popište stručně obsah vašeho odborného předmětu:

_____

T6. Používáte ve svém předmětu nějaké technické vybavení nebo nástroje? Jaké?

_____

T7. Myslíte si, že je nezbytné, aby žáci uměli popsat použití tohoto vybavení anglicky?

_____

T8. Využíváte ve svém předmětu výpočetní techniku a speciální software? Při jaké příležitosti?

_____

T9. Využíváte ve svém předmětu výpočty, kalkulace? Při jaké příležitosti?

_____

T10. Myslíte si, že je nezbytné, aby žáci dokázali popsat postup při výpočtu anglicky?

_____

T11. Pracujete ve svém předmětu s technickou dokumentací, normami, tabulkami, grafy?

T12. Myslíte si, že je důležité, aby se žáci naučili pracovat s technickou dokumentací, normami, tabulkami, grafy v angličtině?

T13. Můžete uvést několik klíčových slov pro základní orientaci v oboru?

T14. Můžete uvést případy, kdy je účelné, aby žák dokázal popsat a jednoduše vysvětlit určitou technologii (postup, proces)?

T15. Byl/a byste ochoten/a spolupracovat po odborné stránce při přípravě kurzu odborné lesnické angličtiny určeného žákům naší školy?

Připomínky, komentáře:

Appendix 3: Questionnaire for the students

Age: _____

Sex: _____

S1. How long have you been learning English? _____

S2. How long have you been learning Silviculture? _____

S3. How long have you been learning Harvest? _____

S4. How long have you been learning Game keeping? _____

S5. How long have you been learning Forest protection? _____

S6. How long have you been learning Forest management? _____

S7. Mark on the scale 1-5 how much you are interested in these subjects.

   1 – very interested   2 – interested   3 – on average 4 – not very interested   5 – not interested

Silviculture _____   Harvest _____   Game keeping _____   Forest Protection _____   Forest Management ____

S8. Mark on the scale 1-5, how successful you are in these subjects.

      1 – excellent   2 – very good   3 – good   4 – satisfactory   5 – unsatisfactory

Silviculture _____   Harvest _____   Game keeping _____   Forest Protection _____   Forest Management ____

S9. Do you think you will use English in your future career?   YES   -   NO

Can you mention particular examples of situations in which you can use English?

_____

S10. Are you planning to go on to university?   YES   -   NO

If yes, which branch?   _____

S11. Mark these language skills 1-4 according to your preferences.

         1 – very important   2 – important   3 – not very important   4 – useless

            reading _____   writing _____   listening _____ speaking _____

S12. Can you mark with a cross your English level in these categories?

	very good	good	average	low
reading	☐	☐	☐	☐
writing	☐	☐	☐	☐
speaking	☐	☐	☐	☐

| listening | ☐ | ☐ | ☐ | ☐ |

| grammar | ☐ | ☐ | ☐ | ☐ |

| vocabulary | ☐ | ☐ | ☐ | ☐ |

| pronunciation | ☐ | ☐ | ☐ | ☐ |

| communication | ☐ | ☐ | ☐ | ☐ |

S13. What kind of texts would you like to find in the reading activity? (choose)

• abstract from specialized book • article from specialized magazine • abstract from manual

• abstract from catalogue • article from internet   • others: _____

S14. What kind of activities would you prefer when checking reading comprehension? (choose)

• true/false   • multiple-choice   • questions   • re-telling

• put the pictures into the correct order • others: _____

S15. What kind of writing would you prefer learning for your future career? (choose)

• letters   • emails   • reports   • notes   • others _____

S16. What kind of activities would you prefer when checking listening comprehension? (choose)

• true/false   • multiple-choice   • questions   • re-telling   • gap-fill

• put the pictures into the correct order • others: _____

S17. What kind of teaching methods do you prefer in learning speaking? (choose)

• role-play   • giving presentation   • discussion   • questions and answers

S18. What kind of classroom interaction do you prefer in English learning? (choose)

• pairwork   • group work   • individual work   • teacher – student interaction

S19. What kind of vocabulary activities do you prefer? (choose)

• match word and picture   • match word and definition   • gap-fill

• match two expressions   • vocabulary games   •others: _____

S20. Do you think that grammar should be taught in an ESP course?   YES   -   NO

Why? _____

S21. Would you like to attend an ESP course at school?   YES   -   NO

Dotazník pro žáky středních škol

Věk: _____

Pohlaví: _____

S1. Jak dlouho se učíš anglicky? _____

S2. Jak dlouho se učíš Pěstování lesa? _____

S3. Jak dlouho se učíš Těžbu? _____

S4. Jak dlouho se učíš Myslivost? _____

S5. Jak dlouho se učíš Ochranu lesního prostředí? _____

S6. Jak dlouho se učíš Hospodářskou úpravu lesa? _____

S7. Označ na stupnici 1-5, jak moc tě tyto předměty zajímají.

   1 – velmi zajímavý   2 – zajímavý   3 – průměrný   4 – ne moc zajímavý   5 – nezajímavý

Pěstování _____   Těžba _____   Myslivost _____   Ochrana _____   HÚL _____

S8. Označ na stupnici 1-5, jakou máš v daném předmětu úspěšnost.

   1 – výborný   2 – chvalitebný   3 – dobrý   4 – dostatečný   5 – nedostatečný

Pěstování _____   Těžba _____   Myslivost _____   Ochrana _____   HÚL _____

S9. Myslíš si, že angličtinu využiješ ve svém budoucím zaměstnání? (zakroužkuj)

           ANO   -   NE

Můžeš uvést nějaký konkrétní příklad situace, kdy bys mohl angličtinu využít?

_____

S10. Chystáš se na vysokou školu? (zakroužkuj)   ANO   -   NE

Pokud ano, na jaký obor? _____

S11. Označ tyto jazykové dovednosti 1-4 podle toho, jak důležitá jednotlivá dovednost pro tebe je.

     1 – velmi důležitá   2 – důležitá   3 – ne moc důležitá   4 – zbytečná

       čtení _____   psaní _____   poslech _____ mluvení _____

S12. Mohl bys označit křížkem tvojí úroveň angličtiny u následujících kategorií?

	velmi dobrá	dobrá	průměrná	nízká
čtení	☐	☐	☐	☐
psaní	☐	☐	☐	☐

mluvení	☐	☐	☐	☐
poslech	☐	☐	☐	☐
gramatika	☐	☐	☐	☐
slovní zásoba	☐	☐	☐	☐
výslovnost	☐	☐	☐	☐
komunikace	☐	☐	☐	☐

S13. Jaké druhy textu bys rád/a viděl/a v učebnici odborné angličtiny? (zakroužkuj)

• text z odborné učebnice   • článek z odborného časopisu   • úryvek z technického manuálu

• úryvek z katalogu   • článek z internetu   • jiný text: _____

S14. Jaký druh cvičení ti vyhovuje při kontrole porozumění textu? (vyber, můžeš i více)

• true/false   • multiple-choice   • otázky   • převyprávěj

• dej obrázky do správného pořadí podle textu   • jiné: _____

S15. Jaké druhy psaného textu je podle tebe vhodné učit se napsat v angličtině pro tvé budoucí zaměstnání? (zakroužkuj)

• dopis   • email   • zpráva   • poznámka   • další _____

S16. Jaký druh cvičení ti vyhovuje při kontrole porozumění poslechu? (vyber, můžeš i více)

• true/false   • multiple-choice   • otázky   • převyprávěj   • doplň slovo

• dej obrázky do správného pořadí podle textu   • jiné: _____

S17. Jaké metody práce při výuce mluvení ti vyhovují? (vyber, můžeš i více)

• role-play   • prezentace   • diskuze   • otázky a odpovědi

S18. Jaká forma práce v hodině ti vyhovuje? (vyber, můžeš i více)

• práce ve dvojicích   • práce ve skupině   • samostatná práce   • spolupráce pouze s učitelem

S19. Jaké druhy cvičení na procvičování slovíček ti vyhovují? (vyber, můžeš i více)

• spoj obrázek a slovo   • spoj slovo a definici   • doplň výraz   • spoj dva výrazy

• hry se slovíčky   • jiné: _____

S20. Myslíš si, že i v odborné angličtině by se měla vyučovat gramatika?   ANO   -   NE

Proč? _____

S21. Chtěl bys navštěvovat kurz odborné angličtiny ve škole?   ANO   -   NE

Appendix 4: Forestry course book activities

BOOK 1	reading		listening		speaking	writing	vocabulary	
Unit 1	pre-reading questions	multiple-choice	T/F	gap-fill	pairwork/role-play	a recommendation form	matching words with definitions	gap-fill
Unit 2	pre-reading questions	T/F	T/F	gap-fill	pairwork/role-play	a feedback form	matching words with definitions	gap-fill
Unit 3	pre-reading questions	completing the chart	T/F	gap-fill	pairwork/role-play	a poster	matching words with definitions	gap-fill
Unit 4	pre-reading questions	multiple-choice	T/F	gap-fill	pairwork/role-play	an order form	matching words with definitions	gap-fill
Unit 5	pre-reading questions	completing the chart	T/F	gap-fill	pairwork/role-play	an email	matching words with definitions	gap-fill
Unit 6	pre-reading questions	T/F	T/F	gap-fill	pairwork/role-play	notes	matching words with definitions	two-option choice
Unit 7	pre-reading questions	multiple-choice	T/F	gap-fill	pairwork/role-play	notes	matching words with definitions	gap-fill synonyms
Unit 8	pre-reading questions	T/F	T/F	gap-fill	pairwork/role-play	a log entry	gap-fill	grouping words
Unit 9	pre-reading questions	T/F	multiple-choice	gap-fill	pairwork/role-play	a memo	gap-fill synonyms	two-option choice
Unit 10	pre-reading questions	T/F	multiple-choice	gap-fill	pairwork/role-play	a checklist	matching words with definitions	gap-fill synonyms
Unit 11	pre-reading questions	multiple-choice	T/F	gap-fill	pairwork/role-play	an accident report	matching words with definitions	gap-fill
Unit 12	pre-reading questions	T/F	multiple-choice	gap-fill	pairwork/role-play	a poster	matching words with definitions	gap-fill
Unit 13	pre-reading questions	T/F	T/F	gap-fill	pairwork/role-play	notes	gap-fill	grouping words
Unit 14	pre-reading questions	multiple-choice	T/F	gap-fill	pairwork/role-play	an order form	matching words with definitions	gap-fill
Unit 15	pre-reading questions	T/F	T/F	gap-fill	pairwork/role-play	a request form	matching words with definitions	gap-fill

BOOK 2	reading		listening		speaking	writing	vocabulary	
Unit 1	pre-reading questions	multiple-choice	T/F	gap-fill	pairwork/role-play	a chart completing	completing the chart	gap-fill
Unit 2	pre-reading questions	multiple-choice	T/F	gap-fill	pairwork/role-play	a memo	matching words with definitions	gap-fill
Unit 3	pre-reading questions	multiple-choice	T/F	gap-fill	pairwork/role-play	an assessment sheet	gap-fill	grouping words
Unit 4	pre-reading questions	T/F	T/F	gap-fill	pairwork/role-play	a site visit report	matching words with definitions	gap-fill
Unit 5	pre-reading questions	multiple-choice	T/F	gap-fill	pairwork/role-play	a forest site report	matching words with definitions	grouping words
Unit 6	pre-reading questions	T/F	T/F	gap-fill	pairwork/role-play	a meeting agenda	grouping words	gap-fill
Unit 7	pre-reading questions	multiple-choice	T/F	gap-fill	pairwork/role-play	an email	matching words with definitions	gap-fill synonyms
Unit 8	pre-reading questions	multiple-choice	T/F	gap-fill	pairwork/role-play	an email	matching words with definitions	gap-fill
Unit 9	pre-reading questions	T/F	C/I	gap-fill	pairwork/role-play	notes	gap-fill	matching words with definitions
Unit 10	pre-reading questions	T/F	T/F	gap-fill	pairwork/role-play	a chart completing	gap-fill synonyms	gap-fill
Unit 11	pre-reading questions	multiple-choice	T/F	gap-fill	pairwork/role-play	a report	two-option choice	gap-fill
Unit 12	pre-reading questions	multiple-choice	T/F	gap-fill	pairwork/role-play	note taking	matching words with definitions	gap-fill
Unit 13	pre-reading questions	T/F	multiple-choice	gap-fill	pairwork/role-play	a manager's report	grouping words	gap-fill
Unit 14	pre-reading questions	multiple-choice	T/F	gap-fill	pairwork/role-play	a customer inquiry log	matching words with definitions	gap-fill
Unit 15	pre-reading questions	T/F	multiple-choice	gap-fill	pairwork/role-play	an email	matching words with definitions	gap-fill

BOOK 3	reading		listening		speaking	writing	vocabulary	
Unit 1	pre-reading questions	T/F	T/F	gap-fill	pairwork/role-play	notes	grouping words	gap-fill
Unit 2	pre-reading questions	multiple-choice	T/F	gap-fill	pairwork/role-play	notes	matching words with definitions	grouping words
Unit 3	pre-reading questions	T/F	multiple-choice	gap-fill	pairwork/role-play	an email	gap-fill	two-option choice
Unit 4	pre-reading questions	T/F	T/F	gap-fill	pairwork/role-play	a summary	matching words with definitions	gap-fill
Unit 5	pre-reading questions	T/F	multiple-choice	gap-fill	pairwork/role-play	a report	two-option choice	gap-fill
Unit 6	pre-reading questions	multiple-choice	multiple-choice	gap-fill	pairwork/role-play	an email response	matching words with definitions	gap-fill
Unit 7	pre-reading questions	T/F	multiple-choice	gap-fill	pairwork/role-play	a memo	matching words with definitions	gap-fill
Unit 8	pre-reading questions	multiple-choice	T/F	gap-fill	pairwork/role-play	a memo	matching words with definitions	gap-fill
Unit 9	pre-reading questions	T/F	multiple-choice	gap-fill	pairwork/role-play	a summary	matching words with definitions	gap-fill
Unit 10	pre-reading questions	multiple-choice	T/F	gap-fill	pairwork/role-play	a report	two-option choice	gap-fill
Unit 11	pre-reading questions	T/F	multiple-choice	gap-fill	pairwork/role-play	an email	matching words with definitions	gap-fill
Unit 12	pre-reading questions	T/F	multiple-choice	gap-fill	pairwork/role-play	a voice message	matching words with definitions	gap-fill
Unit 13	pre-reading questions	multiple-choice	T/F	gap-fill	pairwork/role-play	a memo	matching words with definitions	gap-fill
Unit 14	pre-reading questions	T/F	T/F	gap-fill	pairwork/role-play	a report	matching words with definitions	gap-fill synonyms
Unit 15	pre-reading questions	multiple-choice	T/F	gap-fill	pairwork/role-play	a recruitment poster	grouping words	gap-fill

Appendix 5: Respondents' answers – forestry workers

| Forestry workers	W1	W2	W3	W4	W5	W6
Name	Ing. Václav Slunčík	Ing. Tomáš Kuchta	Josef Hájek	Ing. Václav Konopík	Ing. Dagmar Singertová	Ing. Stanislav Wollráb
Age	40	42	28	67	28	53
Position	forest district manager	manager - approved seller of Swedish forest machines	operation worker in a forest company	executive director in a forest company	inspector of Forest protection department	self-employed in forestry
Length of experience	13	17	6	44	3	29
QW1	none	English	German	English	English	German
QW2	face-to-face	face-to-face, phone calls, emails	face-to-face	face-to-face	face-to-face, emails	face-to-face, phone calls, emails
QW3	managers, co-workers, suppliers, customers, contractor´s workers	managers, co-workers, subordinates, suppliers, customers, business partners, schools, institutions	customers, suppliers	business partners	customers	customers, suppliers
QW4	manuals, catalogues, specialized books and magazines, emails, letters to suppliers and customers, request forms	manuals, catalogues, specialized books and magazines, emails, invoices, bills of delivery	manuals, specialized books and magazines, letters and emails	catalogues	manuals, specialized literature, translations of specialized texts	manuals, specialized books and magazines, letters to customers and suppliers, emails
QW5	office, forest	office, forest, workroom	forest	office, forest, workroom	office	forest, office
QW6	drawing up projects for reforestation, building game-proof fences, planning the position of trap trees and other insect traps	marketing, sale and after sales services of forest machines (harvesters etc.)	management of forest practices - silviculture and harvest operations, managing of forest workers	management of forest company established by the local authority	government supervision over forest management of different companies, with a special attention to observance of Forest Law and other laws	forest management through contract, project management, inspecting and consulting services for forest companies
QW7	tape measure, rangefinder, electronic calliper, altimeter	repair tools kit (hand and electric), electronic calliper	GPS, rangefinders, altimeter, tape measure, calliper	car, PC	rangefinder, camera, PC	calliper, rangefinder
QW8	software for record keeping of reforestation and harvest	specialized software in harvesters	software for record keeping of wages, harvest, silviculture operations	software for record keeping of forestry operations, emails, data box	Microsoft applications	software for calculation of forestry operations
QW9	number of transplants per hectare, stand volume, fence metres	pricing and optimization	wage background data, invoice background data, project development	pricing	calculation of stand volume, stand density, rotation period for determination of damage levels and fine	calculation of stand volume, timber assortments and volume of timber to be felled in a certain season
QW10	Forest Management Plan	technical documents for machines, tables and graphs	performance standards of forest workers for regulation of costs in harvest and silviculture operations	manuals for machines, tools, chemicals, forestry standards, tables for keeping records of forestry operations, graphs for comparing outcomes	technical documents of EIA project correctness, tables in Forest Management Plan	stand volume tables

Appendix 6: Respondents' answers – subject teachers

Subject teachers	T1	T2	T3	T4	T5
Name	Ing. Václav Vomáčka	Ing. Milan Fořt	Ing. Hynek Týml	Ing. Kateřina Jurisová	Ing. Radka Stolariková, Ph.D.
Age	52	53	51	33	30
Subject	Game keeping	Harvest	Silviculture	Forest Protection	Forest Management
Length of experience	32	20	28	4	8
QT1	Russian	Russian	English	none	English
QT2	specialized books and magazines, hunter guide	expo, seminars, manuals and leaflets for forest machinery, internet	hunter guide, selling timber	catalogues, manuals, software, conferences	purchasing of materials and devices, seminars, workshops, written communication, hunter guide
QT3	manuals, catalogues, magazines	specialized books, notes presentations, leaflets	catalogues, specialized books and magazines, notes, articles	manuals, catalogues, specialized books and magazines, notes, encyclopaedias	catalogues, specialized books and magazines, notes
QT4	DVD, PP presentations, Youtube	PP presentations, video, Youtube, internet	PP presentation, video	internet, Youtube, DVD, PP presentation	Youtube, PP presentation
QT5	history and traditions, game care, game keeping, hunting, cynology, falconry	structure and characteristics of wood, types of harvest, machinery and technology, process of raw timber production	forest laws, stand composition, forest reproduction, planting stock, reforestation, forest tending	protection of forest stand against abiotic, biotic and anthropogenic factors, nature protection	characteristics of mensurational variables, discovering stand volume, increment and growth of trees, forest production, forest planning and management
QT6	guns, knives, hunter's equipment, observation equipment, accessories for dogs	forest machinery, tools, saws, brush-cutter, sawmill machines	calliper, tape measure, altimeter, relascope, planting bar	insect traps and other traps	altimeter, calliper, rangefinder,
QT7	yes – how to use guns	no	yes – how to use calliper, altimeter and relascope	yes – how to deploy trap trees and insect traps	no
QT8	laser shooting range, observation equipment, GPS	in harvester - felling records, MES (sorters)	no	mapping of pest occurrence	special software in field-map, Sortbase, Taxless Choceň
QT9	weight of hunted game, calculations of planning and keeping the game, evaluation of trophies, calculations of damages	tree volume, wood moisture, stand density	calculation of sample plots, number of transplants per hectare, exploitation percentage	calculation of pest-disaster area, number of adult pests	calculation of stand volume, mean-tree volume, stand density, species composition

QT10	no	no	no	yes – done all over the world	no
QT11	technical documents, standards, tables and tables, graphs	tables for timber scaling, tables for measurement and grading of timber	standards, tables and graphs	manuals for traps, pest standards	stand volume tables, form-class volume tables, mensurational tables, Forest Management Plan
QT12	no	yes – tables for timber scaling and for measurement and grading of timber	no	yes – manuals for traps, pest standards	no
QT13	hunting dogs, game, guns, ammunition, hunting equipment	types of trees, wood structure, wood defects, bolts, tools, forest machinery, sawmills machines, saws	reforestation, forest tending, seed production and nursery management	pests, protection and defence, nature protection	mensurational variables, stand volume, Forest Management Plan, Forest Management Planning, Forest law 285/95, time and spacial arrangement
QT14	rules for hunter guides, description of game, hunting strategies of dog breeds	basic description of raw timber production process	improvement cutting process, plan for clear-cut restoration, reforestation process	insect trap installation, number of pests evaluation, planning of insect traps for the next season	measuring of height and thickness of trees, discovering the age of trees, orientation according to stand map
QT15	yes	yes	yes	yes	yes

5 Forests and Stands

Get ready!

1 Before you read the passage, talk about these questions.

1 What problems can develop in overmature trees?
2 What are the benefits of a well stocked tree stand?

overstocked

all-aged stand

old-growth

understocked
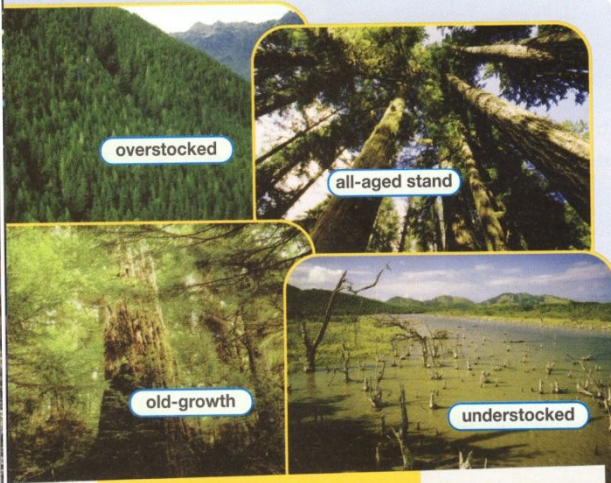
ROCKY VIEW STATE FOREST LANDS

Report on Forests and Stands

This report presents the annual summary of Rocky View State Forest. The site includes recreational and **commercial forest lands**.

Rocky View State Forest includes over 300 acres of **old-growth** forest. Regulations protect this **virgin forest** from commercial use. Researchers have found that some trees are **overmature**. This often leads to a decline in growth rate and vigor.

Commercial operations left a **residual stand** on the eastern edge of the parklands. The **all-aged stands** here are healthy. They have been opened for recreational use. Logging roads are used by hikers. Hunters use them, too, during the legal season.

Selected forest lands were cut 20 years ago. They were replanted with no maintenance program. The acreage was **overstocked** with saplings. This is an **even-aged stand** of weak trees. We recommend that forestry officials thin trees at this site. Take care not to create an **understocked** site.

Subsequent replanting programs have resulted in **well-stocked** sites.

12

Reading

2 Read the report. Then, choose the correct answers.

1 What is the report mostly about?
   A forest lands designated for recreational use
   B the effectiveness of replanting programs
   C the condition of trees in the state forest
   D forest lands designated for commercial use

2 What are the logging roads through the residual stand used for?
   A they are used by logging trucks
   B they are used by hunters and hikers
   C they are only used by forestry officials
   D they are used for cars

3 Which is NOT a concern mentioned in the passage?
   A overmature trees
   B the dangerous residual stand
   C lack of a replanting program
   D understocked sites

Vocabulary

3 Match the words (1-6) with the definitions (A-F).

1 __ all-aged stand
2 __ overmature
3 __ even-aged stand
4 __ residual stand
5 __ commercial forest land
6 __ stand

A an area that can produce 20 cubic feet of timber per acre per year

B a group of trees that are the same species and are relatively uniform

C trees that have declined in growth rate and vigor due to old age

D a stand of trees left standing after a cutting operation

E a stand of trees that includes examples of trees at three or more age classes

F a stand of trees with an age difference that is not greater than 10 or 20 years

4 Place the words from the word bank under the correct headings from the word bank.

Word BANK

sapling   overstocked   old-growth
virgin forest   understocked   well-stocked

Untouched Forest	Young Tree(s)	Condition of Tree Stands
_____	_____	_____
_____	_____	_____
		_____

5 🎧 Listen and read the report again. What is unique about a virgin forest?

Listening

6 🎧 Listen to a conversation between an executive and a manager. Mark the following statements as true (T) or false (F).

1 ___ The woman has written a forest report.
2 ___ The man is concerned about overmature trees.
3 ___ The company plans to develop a restocking plan.

7 🎧 Listen again and complete the conversation.

Manager:	Great. First of all, I've confirmed that the site is **1** _____ _____ _____ . We can harvest there.
Executive:	Good. Now, will it be profitable?
Manager:	I believe so. There are several **2** _____ - _____ _____ that can be harvested this year.
Executive:	Weren't there some concerns about **3** _____ trees?
Manager:	There were concerns about that. Luckily, it turns out that the trees are still healthy.
Executive:	That's a relief. What else did your study find?
Manager:	We studied the spacing of **4** _____ _____ trees in order to develop a restocking plan.
Executive:	I see. For **5** _____ _____ after a site has been harvested.
Manager:	That's right. We want to plant **6** _____ - _____ sites.

Speaking

8 With a partner, act out the roles below based on Task 7. Then, switch roles.

USE LANGUAGE SUCH AS:

Let's take a few minutes ...
... I've confirmed that the site is ...
Weren't there some concerns about ...?

Student A: You are a manager. Talk to Student B about:
• the updated forest report
• your findings
• potential for profit at the site

Student B: You are an executive. Talk to Student A about his or her findings.

Writing

9 Use the conversation from Task 8 to complete a forest site report.

Site Report:

• Is the site approved for commercial forest use? **Yes / No**

• Are there trees ready to be harvested this year? **Yes / No**
Please explain your recommendations.
_____
_____

• Other findings or concerns (please explain):
_____
_____

(Evans, Dooley, & Styles, 2015, pp. 12-13)

Appendix 8: English-Czech mini dictionary

altimeter	výškoměr	**rangefinder**	dálkoměr
calliper	průměrka	**reforestation**	obnova lesa
clear-cut	holina	**relascope**	relaskop
forest district manager	revírník u LČR	**rotation period**	obmýtní doba
Forest management	Hospodářská úprava lesa	**Silviculture**	Pěstování lesa
Forest Management Plan	Lesní hospodářský plán	**stand**	porost
Forest protection	Ochrana lesního prostředí	**stand density**	zakmenění
forest tending	výchova porostů	**stand map**	porostní mapa
forest warden	lesník	**stand volume**	zásoba porostu
Game keeping	Myslivost	**stand volume tables**	porostní tabulky
game-proof fence	oplocenka	**timber**	užitkové dříví
Harvest	Lesní těžba	**timber assortment**	sortimenty dříví
improvement cuttings	výchovné zásahy	**timber scaling**	krychlení dříví
insect trap	lapač	**transplant**	sazenice
mean-tree volume	objem středního stromu	**trap tree**	lapák
mensurational variables	dendrometrické veličiny	**tree volume**	objem stromu
operational manager	technik lesní výroby		

SHRNUTÍ

Diplomová práce se zabývá tvorbou ESP aktivit pro studenty středních škol. Teoretická část vysvětluje pojem English for Specific Purposes, představuje jeho vznik, historii a budoucí směřování. Dále analyzuje teorii tvorby aktivit procvičujících slovní zásobu a mluvnici společně se způsoby rozvoje produktivních a receptivních jazykových dovedností, mluvení, psaní, poslechu a čtení. Následně je popsána analýza potřeb, která je nezbytnou součástí přípravy kurzu ESP, také její pozice v ESP a proces a metody sběru, analýzy a vyhodnocení dat. Nakonec je probírána tvorba programu kurzu jako výsledku této analýzy. Praktická část popisuje analýzu potřeb, která byla provedena za účelem zjištění nejefektivnějšího způsobu tvorby ESP aktivit pro studenty středních lesnických škol. Výzkum zahrnoval rozhovory se specialisty v oboru a učiteli odborných předmětů středních lesnických škol. Dále pak zjišťoval, jaké mají studenti těchto škol učební styly a preference. Nakonec byl proveden rozbor ESP učebnice lesnictví za účelem porovnání použitých aktivit.