Needs analysis for language course design. A case study for engineering and business students

L Todea and R Demarcsek

Department of Philology and Cultural Studies, Technical University of Cluj Napoca - North University Centre of Baia Mare, Romania

E-mail: ramona.demarcsek@cunbm.utcluj.ro

Abstract. These days, teaching languages – English in particular – has become an ever more complex and challenging task due to the fact that groups of students are eclectic in terms of knowledge of English and level of competence. Teachers try to adapt to this challenging environment by providing a wide variety of activities and materials so as to satisfy the students’ demands. This may sometimes prove counterproductive, is usually time consuming, and requires material and financial resources that are not always available. Under the circumstances, we considered that a needs analysis would benefit all parties involved: teachers on the one hand, in that it would somewhat simplify their effort and make it easier to work with the aforementioned groups of students, and the students on the other hand, in that the activities would be better tailored to suit their needs and requirements in terms of knowledge, abilities and skills. To this end, we conducted a survey in which we requested students to state their level of satisfaction with regard to the English course, as well as provide suggestions in terms of topics and language issues they would like to approach during these courses. In this paper we analysed and interpreted the responses in an attempt to adapt the content of the course so as to better meet the expectations of the end beneficiaries, i.e. the students.

1. Designing ESP Courses - Aspects of Theory and Practice

Language courses for students in Business and Engineering should be designed considering their needs, wants and expectations about foreign language communication in a professional setting. The main reason for developing ESP activities should imply a strong purpose of communication while focusing on a specific content and specific language structures. Thus, needs analysis is a useful tool to use in order to assess what language points students need to master, as well as to meet their needs during the learning process. This article discusses the findings of a questionnaire which was administered to students in the second year of Business and Engineering from the North University Centre of Baia Mare, Technical University of Cluj Napoca. The purpose is to assess personal and language information about the selected target group of learners and to establish areas of competence that an ESP learner needs to develop so as to get over the lack of confidence in dealing with specialist types of discourse.

Nowadays, English is considered to be the lingua franca of international technical professions. Romanian technical universities usually demand their students to study at least one course in a foreign language. Most students choose English, French or German. Therefore, technical universities have to re-evaluate the degree to which their students’ career needs are being met by the existing language programmes, so that policy and resources should be adjusted accordingly. The question under discussion is whether the courses in foreign languages allow students to communicate effectively in
contexts that business or engineering prospective graduates are likely to encounter in their jobs. A user of English as a lingua franca thus has to accommodate to different other speakers from different linguistic and cultural backgrounds with different levels of competence in each speech situation. Real common features have been identified first and foremost regarding discourse style and pragmatics, suggesting that what unifies lingua franca speech is communication strategies rather than the result of any structural convergence [1].

2. ESP and Needs Analysis

It is generally acknowledged that English for Specific Purposes focuses on relating the process of teaching and learning English to the learners’ communicative needs. Hutchinson and Waters [2] state that if ESP teachers know why learners need English for, the content of the language course could be tailored accordingly and the teaching process should focus on these specific needs. As a result, curriculum content and developing teaching materials must be based on needs analysis. In Brown’s opinion [3], needs should be formulated in terms of goals and objectives which, in turn, could be considered the foundation for developing tests, materials, teaching activities and evaluation strategies.

The process of needs analysis or target situation analysis consists of identifying the target situation and then carrying out a rigorous analysis of the linguistic features of that situation. The needs analysis approach should not be perceived as a procedure delivered only once at the beginning of the seminar; it should rather be an on-going process repeated during the development of a language programme. The factor that distinguishes ESP from GE is the awareness of the need and not the existence of it [2]. The moment learners and teachers establish the context in which English is needed, their awareness will have an influence on what will be acceptable as “reasonable content in the language course” and what “potential can be exploited” [2]. Considering different studies, there is no necessary relationship between necessities as regarded by the ESP teacher and what the learners want or need. Learner motivation is an important aspect in the learning process; hence, the learners’ perceived wants cannot be ignored.

Focusing on the situation in which the learners are supposed to work after graduation reveals the target needs. Hutchinson and Waters [2] define target needs as those required by the learners’ in the context of use. They identify target needs as necessities and distinguish them from wants which are defined as what the learners believe they need. Although wants are more subjective, both necessities and wants should be considered in the process of needs analysis to establish what the students are like at the start of their language course, in order to investigate their strengths and weaknesses. They also describe the target situation in terms of necessities, lacks and wants. The authors [2] also make a distinction between target needs and learning needs. The target need refers to what the learner needs to do in the target situation and the learning need refers to what the learner needs to do in order to learn [2]. They further subcategorize target need into: (1) necessities, defined as what the learner has to know in order to function effectively in the target situation, (2) lacks, which are identified as the discrepancy between necessity and what the learner already knows, and (3) wants, considered as what the learner actually wants to learn or what they feel they need. The learner’s wants may or may not reflect those perceived by the ESP teachers [2].

Furthermore, Berwick [4] defines need as “the gap between what is and what should be”. The what is could be equated to the current state of the learner’s knowledge and skills and the what should be could be interpreted as the target situation requirements. The author makes a distinction between felt needs or expressed needs; needs that learners have, and perceived needs; judgment about the educational gaps in other people’s experience [4].

In Robinson’s view [5] the concept of needs “is established for a particular group of students and will be influenced by the ideological preconceptions of the analyst. A different group of analysts working with the same group of students but with different views on teaching and learning would be highly likely to produce a different set of needs”. He also discriminates objective needs, which are defined as all factual information about the learner, for example language proficiency, L1 background, age etc.
Alderson [6], on the other hand, differentiates four types of needs: i. formal needs, which refer to the need to meet the institution requirements such as to pass an exam; ii. actual or obligation needs, which refer to what a student has to do with the language once he has learned it; iii. hypothetical future needs, which is related to the need to become a better professional in the future; iv. wants, which consider what a student feels he/she wants to do or to learn. The first and the forth are types of needs during the process of learning or process-oriented type, while the second and third are types of needs that are future oriented.

According to Altman [7], learners should be placed properly based on their age, level of language proficiency, maturity, time available. Therefore he considers various types of learner needs based on individual differences within the framework of learner-centred language teaching. This requires the institution to make flexible educational arrangements to allow all learners’ access to learning that is appropriate to the types of needs they have. The adjustments of the learning resources are made accordingly to meet the individual differences related to time, aims, or expectations of learning.

The most frequent ways of gathering information about target needs are: questionnaires, interviews, observation, data collection and informal discussions with learners, colleagues, others. The questionnaire covers language skills area, out-of-class language experience, aspects of the language course, such as expectations and difficulties they experience during the course, and opinions about their language teachers.

According to Hutchinson and Waters [2] and Robinson [5], needs analysis should be an on-going process carried out during the life of each course since the learners’ needs are changing too. This can help teachers take the changes into account in a way that encourages students’ progress. Analysis of the target situation can tell us what students do with the chosen foreign language. Teachers also need to know how students learn to do what they do with English language. The role of needs analysis in a skills-centred approach is to provide a basis for discovering the underlying competences that enable students to perform in the target situation and to enable the course designer to discover the potential knowledge and abilities that the learners bring to the ESP class. This approach considers the learner as a user of language rather than as a learner of language.

Hawkey [8] considers needs analysis a tool for course designers. Therefore, it implies a “language training situation with reasonably specific occupational or educational objectives involving a reasonably homogeneous group of learners” [8]. Brindley [9] argues that objective needs should be used as a starting point in course design; thus, “if instruction is to be centred on the learners and relevant to their purposes, then information about their current and desired interaction patterns and their perceived difficulties is clearly helpful in establishing programme goals which in turn can be translated into learning objectives” [8]. He further states that needs analysis is important as a guide in setting broad goals and as a guide in the learning process. Given the information about learner needs a course designer will be able to produce a specification of language skills, functions, and forms as required in the learner needs profile.

Hughes [10] states that “materials for teaching speaking need to synthesize what can be extracted from this immense variety of spoken discourse types and contexts to form the basis of something that can manageably be presented, taught, and assessed”. Hughes [10] also suggests that the complexities of the skill itself mean that “materials should generally, and perhaps paradoxically, not be too ambitious in their aims”. As the author [10] points out, speaking is a high-risk activity which can never be retracted or erased, making some learners worry about speaking and losing face. Increasing learner speaking time is bound up with understanding both learner and teacher contributions to the quantity and quality of classroom interactions. In the teaching of writing, as in the teaching of speaking, there is tension generated by different views of what teaching should focus on, though these views have major implications for methodology. The main division continues to be between product, process, and genre approaches. In many ESP classrooms, the main approach to writing is still very clearly product oriented. The focus is on models, with little if any thought of the way in which texts function in society; specific genres are provided as prescriptive models intended for copying with
minimal adaptation, rather than as sources for generative discussion intended to further an understanding of the genre being explored.

Hutchinson [2] points out that ESP is “an approach to language teaching in which all decisions as to content and methods are based on the learner’s reason for learning”. The same idea is supported by Strevens [11] because he says, the “ESP is particular case of general category of special-purpose language training. The same principles apply no matter which language is being learnt and taught”. In addition to this definition, Dudley-Evans [12] gives a similar description of ESP. Most researchers seem to agree on the following aspect: ESP is based on a particular context and on the learners’ specific needs.

According to Dudley-Evans and St. John [12], there are eight components in today’s concept of needs analysis which have been grouped into five broad areas including: (1) target situation analysis and objective needs analysis, such as tasks and activities learners will use English for; (2) linguistic analysis, discourse analysis, genre analysis, knowledge of how language and skills are used in the target situations; (3) subjective needs analysis, including: learners’ wants, means, factors that affect the way they learn such as previous learning experiences, reasons for attending the course, expectations; (4) present situation analysis for the purpose of identifying learners’ current skills and language use; (5) means analysis, i.e. information about the environment where the course will run.

Furthermore, Stern [13] distinguished four types of ESP teaching objectives: proficiency, knowledge, affective and transfer. Proficiency objectives refer to the mastery of the four language skills: reading, writing, listening and speaking. Knowledge objectives include the acquisition of linguistic and cultural information. Linguistic knowledge objectives refer to language analysis and awareness of the systematic aspects of language, while cultural knowledge objectives refer to the control of socio-cultural rules (mastery of the norms of society, values and orientations and also the ability to recognize culturally significant facts). Affective objectives are about the development of positive feelings toward the subject of study. Transfer objectives concern the ability to generalize from what has been learned in one situation or another.

3. The Subjective Needs Analysis in Practical Application
When teaching students in technical fields, as well as students studying business students, all of the above four objectives are considered. Thus, it is important for students to become proficient in all the four skills, i.e. reading, writing, listening and speaking, while it is equally important for them to be aware of the cultural aspects, i.e. become proficient in the so-called soft-skills, as well. At the same time, having positive feelings about the taught subjects and being able to transfer knowledge and skills from one subject to another are just as essential. In order to reach these objectives teachers need to know what students need in terms of knowledge and skills in the taught language, and to this end, the best option is to run a needs analysis. Obviously teachers need to be flexible and adaptable if they are interested in satisfying the students’ needs with regard to the knowledge and the skills they feel are important when learning a foreign language, English in this particular case, and they also have to be willing to use the feedback they get from the students in order to improve the whole teaching-learning process.

After having taught a certain group of students for one academic year, we decided it was an appropriate time to run such a needs analysis. We consider that after two semesters, students can form a relatively objective viewpoint about the teacher, about the subject taught and about what they need in terms of the language they are studying. At the same time, since these students study English for four semesters, it is, from the teacher’s viewpoint, an appropriate moment in the development of the course to find out what students think about the teacher’s performance, about the course and about how it could be improved to better suit their needs.

Of the four types of needs analyses identified by Dudley-Evans and St. John [12], we chose the third, namely the subjective needs analysis, which focuses on the learners’ wants, reasons for attending the course, or expectations. Moreover, we considered that the teacher-student relationship, the classroom environment, and in that line of thought the students’ perception of their teacher are all
part of this type of needs analysis, i.e. the subjective one, and an integral part of a successful course. To this end, we designed a short questionnaire addressing a group of 179 second-year students from the Faculty of Engineering and from the Faculty of Sciences, studying in domains such as Mechanical Engineering, Electrical Engineering, Business Administration or Management, i.e. either Technical English or Business English. All responses were anonymous.

The questionnaire contained 4 items only: one referring to the students’ general impression on the university and their specific field of study, as a quasi-neutral introduction to the actual on-topic questions and which was not analyzed in this paper, being beside the topic; the second item referring to their general feelings or opinion regarding the English course and the teacher; the third referring to the specific aspects that they enjoyed about the English course or those they did not like, if any, and the fourth and most important regarding suggestions that they had for the improvement of the course and the increase of their level of satisfaction related to the English course. These suggestions should all have focused on types of activity the teacher should include in the course in order to increase participation and involvement, improve the quality of the learning experience for the students, as well as their overall level of satisfaction. As expected, there were instances when respondents chose a less formal approach and made irrelevant, non-course related suggestions, yet these were not included in our analysis.

Thus, the first question, which, as mentioned, focused on non-English course related aspects, will be omitted here. The second question, which was meant to assess the students’ level of satisfaction with the English course and the teacher, received mainly positive feedback, as one can notice in Figure 1 bellow. One should nevertheless not be mislead by the overall positive feedback, despite the fact that it is encouraging and generates positive feelings for the teachers themselves. A certain level of subjectivity can be expected from the respondents due to the fact that, even though questionnaires are submitted anonymously, generally speaking, students still consider the teacher’s feelings, especially since they know that they will interact with the same teacher for the following two semesters. Moreover, the type of needs analysis we decided to implement was the subjective one, as mentioned above, thus subjectivity on the part of the respondents was to be expected.

Thus, on the one hand, a general positive feedback can be generated by the fact that students do not want to offer negative feedback out of consideration for their teacher, and on the other hand, they may be afraid of repercussions in case they provide negative feedback. In certain instances, students may be influenced in their responses by the fact that they think this is what is expected of them, i.e. a positive answer is what the teacher expects. Despite these aspects, it can only be encouraging for the teacher to discover that his/her methods generate such reaction, yet one should not fall prey to it and consider that if the level of satisfaction is high, no need for improvement is required. It should be considered a greater challenge to improve in such a manner as to diminish as much as possible the percentage of dissatisfied students. As shown in the figure below, out of the total number of respondents, 158 offered positive feedback, i.e. 88% of all students taking part in the survey, while 21 (12%) declared a certain level of dissatisfaction. In most cases, reasons were provided: some were related to the choice of activities carried out during the course, others were related to the attitude and behaviour of their peers, while a few were related to such administrative issues as the timetable (i.e. the course being too early in the morning). None had any comments on the teacher’s performance, behaviour, knowledge or skill.
The third question referred to the aspects and activities the students appreciated, or enjoyed, or liked in particular during the English course. Most aspects referred exclusively to the course, while some shifted slightly and included some reference to the teacher in their responses, mentioning the aspects from the teacher’s behaviour or attitude that made them enjoy the course (such as the use of humour, for instance). While changing one’s behaviour or attitude may be improved to some extent, possessing a sense of humour is an aspect that cannot be controlled by the teacher, unfortunately; nevertheless, it has been proven that humour has always helped in achieving a positive atmosphere in the classroom, so one should strive to include it amongst his/her teaching arsenal.

As regards activities, these are truly controllable aspects in the teaching-learning process, which are exclusively in the hands of the teacher. As one can notice in Figure 2, students have expressed their appreciation of certain types of activities and at the same time a certain level of dislike for others. For some reason, grammar seems to be amongst the least favoured types of activities, probably because it is more rigid in that it requires students to learn and observe rules. When it comes to speaking activities, or presentations which require public speaking and a certain performance in front of an audience, be it even made up of peers (or maybe more so), students have two types of approaches: on the one hand there are those who are really confident and have a good level of English, who are eager to express themselves and share their opinions with the rest of the group, and on the other hand, there are the shy ones or those who are quite self-conscious about their level of English and who prefer to sit quietly and let the former express themselves. This is why activities meant to exercise the ability to communicate orally received such a low score, with only 9 respondents out of 179 favouring these activities. Besides, there is another psychological mechanism which functions in adult learners: the fear of being judged by their peers. In other words, students are aware that they make mistakes when they speak, and choose not to share their ideas and opinion for fear of being mocked at by their colleagues.
Reading activities, when it meant reading aloud, were also not very much favoured by respondents (i.e. 13 positive appreciations of these activities), receiving an overall score similar to the speaking activities and being justified basically by the same mechanism: just like speaking, reading exposes the subject to public judgement, and since many are aware that they have poor reading skills or lack confidence, they are afraid of the reaction of the audience. And just like in the case of speaking, students with good reading skills, coupled with a high level of confidence, fuelled specifically by the student’s skillfulness, have no problem with this type of activity, and thus will have a positive attitude towards it. Activities which involve writing, not necessarily activities designed to develop the writing skill, also received a low score (19 students mentioned this in their responses), yet this is justified by the students’ aversion to individual work (or homework, for that matter). As an argument supporting this final statement is the high score that teamwork received (35 out of 179 students): many students expressed their preference for activities that required them to work cooperatively, especially since a lot of these activities involved using their smart devices [14] in order to look for extra information or for unknown words. The reasons for preferring these types of activities vary from true interest in sharing ideas and dividing the workload, to actually taking advantage of this setting to slack and let others do the work.

The activity coming second in the students’ list of preferences was the one that falls under the umbrella of ”games”. Those games which required competition of any type and which involved team-playing were the most favoured amongst students. The reasons are quite obvious; beside, teamwork and team-play both give the participants the illusion of safety from public judgement (see above statements on speaking and reading). When dealing with vocabulary related activities, students expressed their preference for these because all vocabulary issues were related to their domain of interest, and they were all aware of the importance of studying field-related vocabulary, relevant in their field of study and possibly in their future jobs.

Activities meant to improve their listening skills were mentioned by 23 students in the group of respondents, which is encouraging and proves that they are aware of the need to improve this skill, while projects only by 10 of them. In this context, the term project refers to various tasks that students had to perform either on their own or in a group, and which usually generated a product-like outcome (presentation, essay, report etc.). For example, several students in technical fields had to work in groups in order to prepare a presentation of a science-fiction device, which included the actual design (created by them), the technical details, a description of how it functioned and what it was used for. Some even used short videos in order to illustrate all these aspects. Yet despite the fact that at the moment this type of project-based activity seemed successful from the teacher’s perspective, it was
appreciated only by few students because these activities are time-consuming, require vision and imagination, and most students are not very willing to invest much of their time in these. Nevertheless, when requested to suggest activities which would improve their knowledge and skills in English, the number of respondents recommending projects was double as compared to the number of those who mentioned these amongst their preferred activities (see specific comments for the fourth question).

The final question was actually the most important because it openly asked for suggestions from the students regarding activities that they considered useful to be approached in order to better meet their needs. This question was in correlation with the previous one, and while one could notice that students who preferred a certain type of activity requested more of the same type, there were situations when students requested others, not included in their list of preferences. The answers can be observed in Figure 3 below.

Some of the responses might come as a slight surprise, yet one can find explanations for all. For example, despite the fact that grammar is not really appreciated, some of the students, probably those who mentioned it amongst their preferred activities, requested more such activities, acknowledging the fact that no matter how tedious it might seem at a given time, a language needs structure, i.e. grammar, and one cannot properly learn a language without adequately mastering its rules.

Project-like activities were requested by 20 respondents, which represent 12% of participants, and twice the number of students who mentioned these activities as their preferred ones. We have approached this issue at the previous question. Yet one aspect worth mentioning in this context: since the number of students requesting more projects is twice the number of students who like this activity, it proves again the students’ maturity and awareness of the usefulness of these activities in developing their skills (not only language related but also cultural and social skills).

Almost a quarter of the respondents (35 students) stated they would like to participate in more activities which require teamwork. Some respondents explained their choices and said that they enjoyed these types of activities because they gave them the opportunity to share ideas, as well as the workload. It comes as no surprise that games were requested by almost a similar number of respondents (33 students), since this type of activity, besides reaching the educational objectives in a less formal manner, is also relaxing and fun. In terms of vocabulary related activities, since for the third question students demonstrated interest for these activities, acknowledging the need for field-specific vocabulary, it made sense that they would request more activities meant to enrich their vocabulary in their field of interest. On the other hand, speaking activities and presentations, despite the fact that these did not enjoy a high level of appreciation, as one can see from the responses provided for the third question, they were requested by 15 respondents, proving that students are aware of the need to exercise their speaking skills in general, as well as their public speaking skills.
Exercising the listening skill was also deemed important and 23 students (13%) requested that this type of activity be used more often during the English course.

Of the whole group of students participating in the needs analysis, 14 had no recommendations or suggestions. This does not necessarily mean a lack of interest; it may simply be a sign of either satisfaction with the activities included in the course, or a lack of inspiration. Some of the students in this group added some extra comments which actually make it easier to understand why they had nothing to say at this point: some said they had no suggestions for improvement because they liked what they had been doing up to that point, others admitted to not knowing what to suggest, while one considered it was not appropriate for a student to make suggestions regarding the activities a teacher should or should not include in his/her course since the latter is more capable of making such appreciations and it is the latter’s task to know what activities are useful for the students. We consider that even odd responses like this one offer suggestions, as well as feedback, which the teacher can and should have in mind when designing courses, depending on the circumstances.

4. Conclusions

The questionnaire was both a feedback questionnaire and a needs analysis. Its purpose was to identify the types of activities that students enjoy and consequently use them more frequently during the English course. It was also meant to find out what activities students consider worth including in the English course from the perspective of their own needs as they perceive them, the major goal being to redesign the course in such a way that it best fit the students’ needs. Thus, this analysis should result in a change of the design of the English course, and in order to measure its success, another questionnaire needs to be applied at the end of the second academic year to see whether the change was successful. Thus this endeavour will not remain unechoed, some follow-up actions being planned. Needs analysis should be seen as an indispensable aspect of ESP syllabus design not only in order to improve the students’ experience during the English course, but rather in order to link the present students’ academic needs with their needs in their prospective employment.

After applying the questionnaire we have discovered which activities are more successful and which should be included more often in the English course from the students’ viewpoint. The questionnaire has proven to be a useful instrument for the improvement of the teaching-learning process during the English course and will generate change. Yet what we consider probably the most surprising outcome of the questionnaire is not the type of activities the students favour, nor is it the type of activities they would like to focus on more during the English course. The truly surprising aspect, despite the fact that the type of questionnaire used was the so-called subjective one, is that students seem to be quite aware of their needs in terms of English knowledge and skills, i.e. they seem to have quite an objective viewpoint on what activities are useful and generate improvement of their skills and knowledge. Thus we appreciate that such needs analysis should be carried out as frequently as possible and responses should be taken into account when designing ESP courses, since the target group seems to be objectively aware of its needs.

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