

## **GERMAN FOR SPECIFIC PURPOSES (GSP) - A PATHWAY TO STUDIES IN ENGINEERING AT UNIVERSITY OF DUISBURG-ESSEN**

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Keywords: Language for Specific Purposes, German for Engineering, needs analysis

## **INTRODUCTION**

In the third millennium, mobility, internationality, globalization and diversity have become key features in debates of the strategic options to reinforce international cooperation between universities, and led to profound changes in the academic world with regard to teaching, learning and studying. Graduates require a wide range of skills in order to compete in a global environment. Specialised linguistic competences are considered as an important factor in the employability of graduates. Hence, it is an important concern of universities to offer language courses for specific purposes (LSP) in order to enable the students to acquire the necessary linguistic skills needed for their area of study.

Students with different linguistic and cultural backgrounds form the students' body to a large extent in the German higher education scene. They have to adjust to a foreign academic environment, they may not have developed efficient study skills in their home country, and they have to become familiar with academic conventions which are different from educational systems in their home country. Thus, it is not surprising that there is a great need for them to enhance their language skills, to enable them to communicate effectively in an academic or professional setting, and to support them to acquire strong intercultural competences. Students of engineering

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form a large portion of the international student body at German universities. With regard to foreign language skills, Riemer states that "the importance of multilingualism for the global engineer is not confined to learning English" [2] and that "monolingualism is likely to be an impediment for future graduate engineers in a world where intraregional connections provide stepping stones to facilitating globalisation" [3]. The monolingual dominance of English needs to be rethought. As for example, the five year dual degree program Engineering and German at the University of Rhode Island [4] have been implemented successfully.

The Faculty of Engineering at University Duisburg-Essen (UDE) has been responsive to these new challenges and is currently developing a concept for a new German language curriculum - **G**erman for **E**ngineers right from the **S**tart (GES) which places particular emphasis on providing an early support for acquiring subject-specific language skills. In order to develop and to set up GES-courses, the communicative needs and ways of realisation have to be investigated, considering the students' „perceptions of their needs and the practical possibilities and constraints of the teaching context“ [5]. Since 2000, the faculty of engineering at University of Duisburg-Essen (UDE) is offering the most comprehensive international engineering program at German universities under the name International **S**tudies in **E**ngineering (ISE). At the beginning of the year 2015, more than 2000 students are enrolled bachelor- or master-courses. For these degree courses, international students have to possess German language skills at B1 level as minimum requirement according to the Common European Framework of References for Languages (CEFR), as 50% of the ISE-degree-courses are offered in German language, starting from the second year of study. Before acceptance into the study programs students have to provide evidence of their knowledge of German (B1 certificate). The objective of this study was to create a foundation for assessing the relevance of future GSP language programmes.

## 1 LANGUAGES FOR SPECIFIC PURPOSES

The term language for specific (special) purposes (LSP) comprises various definitions and is often referred to English for specific purposes (ESP).

For the purpose of this paper, we will refer to the definition of Hutchinson and Waters [6] who defined ESP as "an approach to language teaching in which all decisions as to content and method are based on the learner's reason for learning". Currently, English serves as a *lingua franca* in fields like science, technology, and business, it appears obvious, therefore, that there is a high demand of ESP-courses worldwide. However, courses in Spanish for Specific Purposes (SSP), French for Specific purposes (FSP) and German for Specific Purposes (GSP) have been developed; they share the same basis as ESP. The key features of LSP-courses are designed to meet the specific linguistic needs of the students, to relate themes and topic to the respective field of study, and to enable students to function linguistically appropriate in the academic environment and in their study subjects. Though there are no sharp boundaries between teaching general language and specific language, there are some significant differences between both approaches. The goal of general language courses is to develop linguistic skills at a broader level, whereas the objectives of LSP courses are that learners acquire specific linguistic competencies which are not a routine part of general linguistic knowledge.

## 2 NEEDS ANALYSIS

It is widely accepted that needs analysis is “a defining, if not the defining, characteristics designing LSP-courses” [7] in order to identify the language skills students need to build proficiency in.

The starting point for course planning and material development is a needs analysis, which includes “target-situation analysis, present situation analysis[...] necessities, demands, wants, likes, lacks, deficiencies, goals, aims, purposes and objectives” [8]. In this study, a present situation analysis has been conducted in order to identify the students` linguistic preferences. The results of the needs analysis will serve learner-interests and provide a basis for a needs-based course design and material development. The type of analysis used in this study aims to identify (i) student factors (ii) how and what the students learn, (iii) students' perceptions and preferences (iv) students' needs and wants with reference to GSP courses [cf. 9].

## 3 THE STUDY

The major objectives of this pilot study undertaken over a period of three semesters (2014-2015) are:

- to explore students' subjective needs about specific teaching materials,
- to gain insight into students` perceptions and preferences of language learning, and
- to identify the needs of the students.

The study was conducted in order to get first insights into subjective needs of international students of engineering. The results presented in this paper are preliminary findings; they are incorporated in GSP-language courses (level A1-B1).

### 3.1 PARTICIPANTS

The needs assessment is conducted using a convenience sample as the participants are available and representative of the target population (international students of engineering).

The participants were 10 Indonesian, 12 Chinese and 35 Malaysian students ( $n=57$ ). 14 were female, 43 male. The Indonesian, Chinese and 15 of the Malaysian students were enrolled in the German language courses, 20 Malaysian students were enrolled in both, subject courses and language courses. The specific fields of engineering they were studying are: Electrical Engineering, Mechanical Engineering, Civil Engineering, and Computer Science. The anonymity of the data is ensured by indexing the participants' with ID1, ID2 etc.

### 3.2 METHODOLOGY

To investigate the perceptions, preferences and needs, data were collected through a questionnaire (using a 5-point Likert-scale) which contained closed questions. The questionnaire consists of six sections:

1. Background information (age, sex, nationality, languages acquired, field of study, current level of German, level of English)
2. Interest/importance of GSP (German for specific purposes)
3. Content of teaching material
4. Language priorities
5. Language skills
6. Perceptions and preferences (reading, writing)

### 3.3 FINDINGS AND DISCUSSION

The data reported in the following sections stem from Part II, III, IV and VI (reading) of the questionnaire. The overall results indicate no evidence of big differences with regard to the students' perceptions, preferences and desires with respect to the design and content of the teaching material. The evaluation of question 3 in the questionnaire took into consideration only 49 answers, as 8 students did not complete this section properly.

#### 3.3.1 Questionnaire part II: Interest and importance

In section II, the students were asked how much they are interested in taking GSP-courses and how they rate the importance of such language courses. There is little surprise that all students "are very much/much interested in GSP-courses", and they find that GSP-courses are "very important/important".

#### 3.3.2 Questionnaire part III: Content of material

In part III of the questionnaire, the students were asked what they expect from the specific instructional material, and which themes and topics they find useful or less useful. The statements given by the groups have been ranked according to their maximal differences between the study programs. As seen in figure 1, the majority of students of all study programmes agree that the topics "grammar, syntax", "specific vocabulary", "describing processes and procedures", "numbers and quantities", "classifying devices and equipment", "engineering materials and properties", "problem solving, advising and consultancy", and "on the job" should be in the focus of specific instructional material. This might indicate that those topics are of major relevance for engineering students regardless their specific engineering subject. Having said this we may assume that engineering students are interested in topics that they need regarding their study program. In contrast, the responses concerning the importance of the topics "shapes, dimensions", "engineering landmarks, building" "making predictions, future trends and technical innovations", and "phases of construction" differ across the areas of study. One explanation for this could be that

students` academic and linguistic needs are related to the university context, and they do not think about their future jobs.

We would also conclude that this result of (i) the differences of study fields, (ii) the gap between university and future profession, and (iii) the more specific needs students have in their respective field of study. The results have to be completed and to be validated by further research.

These findings offer some useful insight into the subjective needs of the students with regard to the themes and topics covered in specific language learning material.

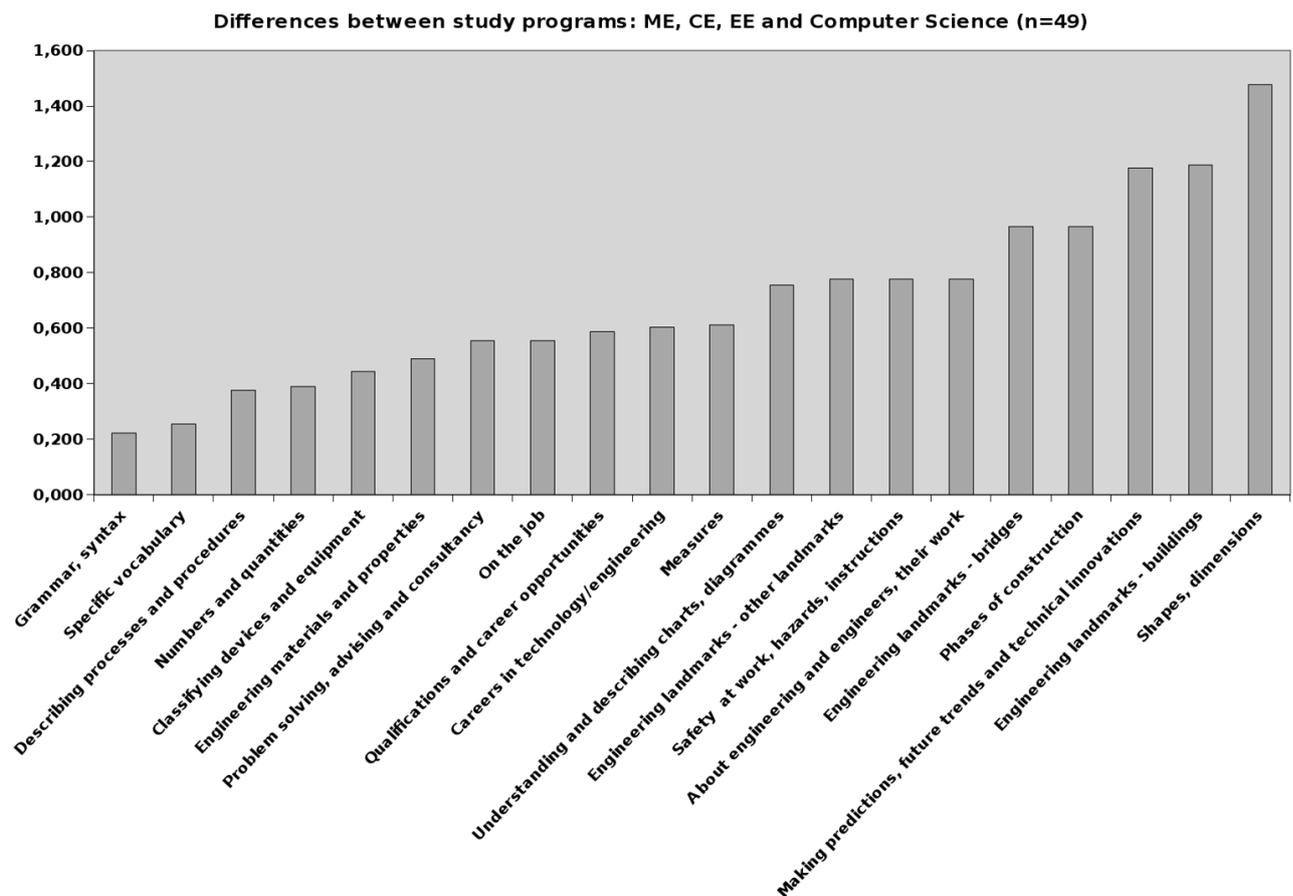


Figure 1: Content of material

### 3.3.4 Questionnaire part IV: Priorities of competences

In Part IV of questionnaire, students were asked to state which priorities they set with regard to improving or expanding their linguistic knowledge. The results are indicated in figure 2. Students of all language levels (A1-B1) show similar results, as they strive to improve their language competence in all four basic skills: listening, speaking, reading, and writing. The students of level B1 gave the highest response to question E (My priority is to improve my listening). The responses of the other groups (level A1, A2) are slightly lower. This could be interpreted that students who attend B1-language courses attend more lectures conducted in German and that they feel the need to obtain a certain competence to understand the lectures. With regard to the

field of study (Electrical/Civil/Mechanical Engineering), the overall results (cf. fig.2) reveal that the students focused on listening as the most preferred priority, followed by speaking, reading and writing.

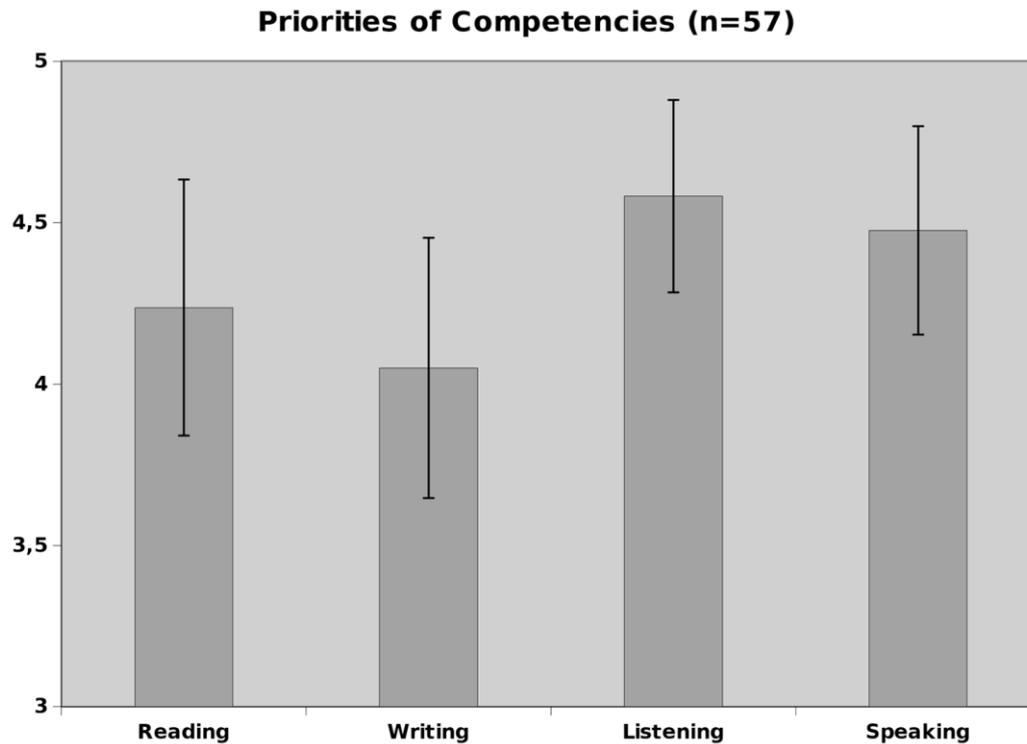


Figure 2: Priorities of competences

### 3.3.5 QUESTIONNAIRE PART VI: RELEVANCES READING

The analysis of the data (cf. figure 3, mean) indicates that the majority of students clearly prefers "guessing the meaning from the context", "identifying main ideas", and "relating unknown words to other languages" in reading comprehension. Less preferred strategies are "speed reading" and "making inferences". What we can infer from this is that the respondents are activating their linguistic and subject knowledge and that they, in particular in the first stages of foreign language learning, make use of their prior acquired knowledge. The responses are of great importance in developing GSP courses as reading is an essential component in the academic context. It should be taken into account, that the students already possess sensitivities to specific linguistic forms gained from their first language and/or English and that they transfer their prior acquired skills to the foreign language. "Skimming" considered as a most useful reading skills. Therefore, skimming and scanning should be stimulated in GSP courses.

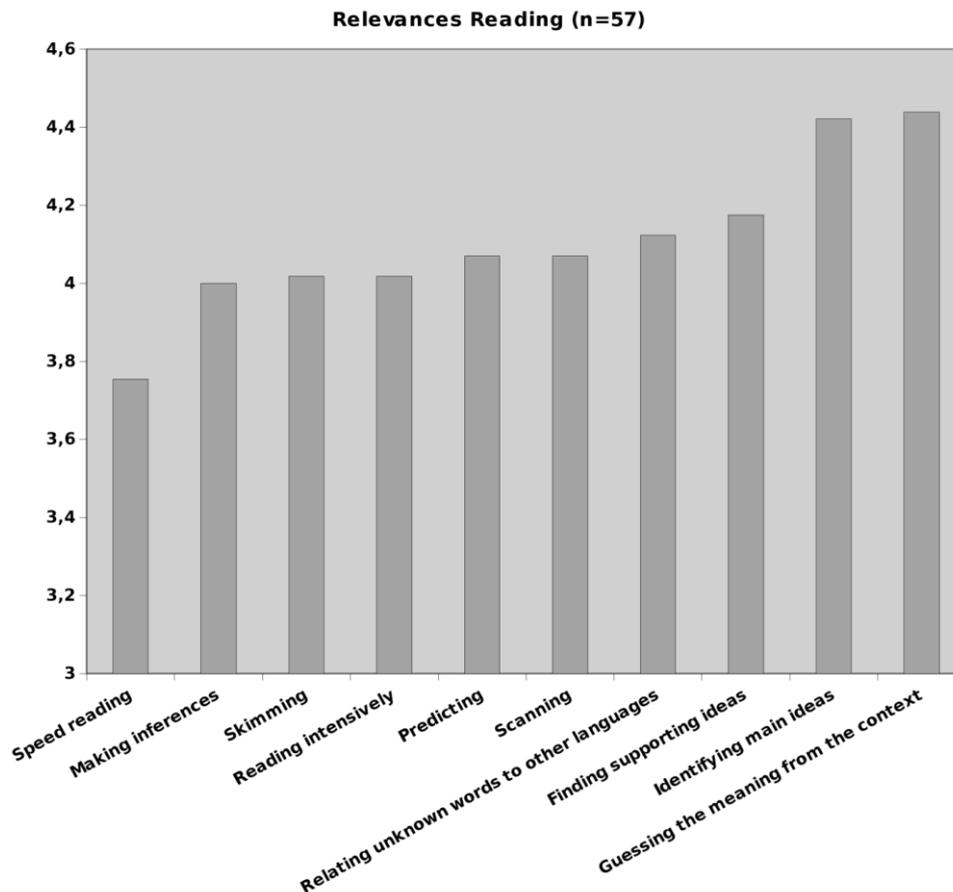


Figure 3: Relevance reading

#### 4 FINAL REMARKS

The analysis of our data indicate that the vast majority of international students of engineering who attend German language courses at beginner and intermediate level (A1-B1) favour GSP courses at an early stage of language learning. It seems that GSP courses right from the beginning of language learning are highly motivating for international students of engineering as specific features of the subject matter are integrated in German language instruction. The results presented in the preceding sections provide a clear basis to develop GSP courses and instructional teaching material. It must kept in mind that the study has certain limitations in terms of sample size and the limited quantitative results. But nonetheless the study provides initial results that GSP courses right from the start of language learning are considered highly desirable by the students. Although the results are tentative, they strongly advocate a more comprehensive study of teaching and learning German for specific purposes at an early stage of language learning.

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