Language Instruction for Finnish Students of Engineering

Claudia Hallikainen
Lecturer of German as a foreign language, Tampere Polytechnic - University of Applied Sciences (TAMK), International Cooperation and Languages Expertise Centre, 33720 Tampere, claudia.hallikainen@tamk.fi

Abstract - In this lecture you will be familiarized with the language teaching for students of engineering at the Tampere Polytechnic - University of Applied Sciences (=TAMK). More in particular attention will be paid to the necessity of learning languages, the range of the language teaching (number of lessons, credits), the courses on offer and the results aimed at. By way of example we describe the challenges to both teachers and students of German as a foreign language. Also the contents of the courses as well as the demands on the students will be described. Further on tested teaching materials and teaching methods best suited for the acquisition of languages will be presented. In the age of the computer and the Internet it is also important to investigate the possibilities of these new media with regard to language teaching and language acquisition. In that respect I would like to report briefly on a European project set up to search for new methods to learn just in time and on the job with mobile appliances.

Index Terms – Language courses, Learning on demand, Material, Methods.

The Necessity of Learning Languages

In this globalized world it is very important that Finns master and speak several foreign languages fluently. As a matter of fact only 5, 2 million people speak Finnish as a mother tongue and only very few people have learned Finnish as a foreign language so well as to be able to trade, exchange technological knowledge or communicate professionally without problems. That is why the Finns have to take the initiative and approach potential customers instead of waiting for them.

According to a survey carried out by the Confederation of Finnish Industries EK more than 80% of the Finnish firms demand that their new employees speak English, 65% Swedish and 40% of the firms require a good knowledge of German.

The knowledge of languages is highly esteemed by firms, because it helps to create confidence, deepen the interaction and build up a long-term cooperation. A versatile language instruction is regarded as essential for coming generations to be able to master the globalization. For all these reasons the Finnish polytechnics strive for a practical knowledge of languages important for working life and not the study of pure linguistics. In that respect special attention is paid to cultural peculiarities. Moreover the students are offered the necessary learning aids.

Nowadays pupils at high schools almost always learn English (as an obligatory foreign language) and Swedish (the second language of the country). In 2003 and 2004 only 17% of all pupils learned German, 8% French and 5% Russian. As a result at our polytechnic beginners’ courses for German are overcrowded, sometimes more than 40 students for one course, whereas courses for advanced students are less frequented, very often only 10 to 15 students attend these lessons.

At the polytechnic apart from their mother tongue (for 94% of the students this is Finnish, for 6% it is Swedish) students all have to learn the second language of the country (this being either Swedish or Finnish) and a second foreign language, almost always English. As part of the obligatory optional subjects the students can pick up a third foreign language. Here most students decide to learn German. This language is part of the normal curriculum and therefore offered free of charge as any other subject.

German for Finnish Students

I would like to describe the teaching of German as a foreign language for Finnish students of engineering at the Tampere Polytechnic, department of engineering and forestry. We offer different courses:

- German for beginners: level 1 (absolute beginners or false beginners, A1), 2 (A 1->A2) and 3 (A 2, consolidation of grammatical structures and vocabulary)
- a basic course (A2->B1, transitional level, introduction into technical German);
- German for intermediate students (B1);
- German for advanced students (B2; students, who have finished a practical training or spent a longer period in a German speaking country might also reach the C1 level.)
- a special course to prepare students for a trip to Germany, study visit or period of practical training (level depends on the participating students, different levels in one and the same course are possible).

Classification of the knowledge of a certain language is based on the Common European Framework of Reference for Languages: learning, teaching, assessment. This framework can be found on several web pages.
Each year about 300 students (= 10% of all students of engineering) choose to learn German. Their motivation is very high, because Germany is Finland’s most important trading partner and moreover most of the imported machinery is made in Germany. At the beginning and the end of each term I ask my students why they choose to learn German as a foreign language. Here are some of their answers which represent the typical reasons.

Taru Raittila: “I started studying German because it was the first change to start another language than English as a first language in my Elementary, and my parents were very eager to have a daughter who could speak German. When I think about the reasons now, I want to master the language since I find it not only useful (widely spoken in Europe), but also relatively easy to learn better now that I have studied it since a 9-year-old. Besides, I like the language and the country.”

Johanna Hautamäki: “I study German because it is a very common language in Europe and I might go working in Germany after I graduate.”

Mikko Määttänen: “I study German because there are so many people speaking it in Europe. In the future it is very important to speak different languages and I think German is one of the most important languages spoken in the world. If you have language skills it is easier to communicate with different people of different nationalities.”

Sanna Saanilahti: “I have always been interested in foreign languages and German is my favourite language. It is very useful because so many people understand it.”

For each course the student gets 3 credits. In order to obtain these credits he has to work 80 hours (45 minutes each): 40 hours of classroom activities, 40 hours of work at the computer, homework (papers, translations), preparation of examinations, visits to German cultural activities (with written report).

I. Contents and Material

Contents: Apart from mastering everyday language (social interaction), the student also has to familiarize with technical language (e.g. product presentation, assembly manuals) and business language (presentation of a firm) in both oral and written form. Oral communication forms: Small talk, presentations, discussions, meetings; written communication forms: e-mails, business letters.

Teaching material:
- Finnish handbooks: Fahrplan 1 and 2: level A1 and A2
- CD-ROM Deutsch im Display (German in Display): level B1 and B2
- A new handbook Deutsch im Display (technical German for engineers and engineer students) which will
be published next month and which I intend to use in different classes. The aim of this material is to acquire language proficiency and good communication skills in technical German. The students can increase their technical vocabulary and knowledge of phrases by identifying with the characters in the storyline. After completing the course, hard-working students will be able to handle demanding working life situations. The course introduces the students to a large variety of situations: telephoning, e-mailing, travelling, introducing people, asking the way and giving directions, describing and solving problems, small talk, technical discussions, staying at a hotel, negotiations, and eating out. The technical language covers general engineering, automation engineering, mechanical engineering and electrical engineering. The course consists of 10 chapters. A Finnish engineer is invited by telephone to a foreign power plant to solve a technical problem. We see her at the airport, at the hotel, at the gate of the company with her Finnish colleague, at meetings with foreign engineers, maintenance personnel and subcontractors. The last chapter deals with a business dinner and the rounding off of a successful journey. Each chapter contains the following parts: a dialogue, a segment relaying linguistic and cultural information with relevant phrases, expressions and grammatical topics, a reading text, an exercise segment and a word list.

- DVD SPIK = Sprachhandeln in Konfliktsituationen (Language Use in Conflict Situations): level B2 and C1

This DVD consists of 12 modules, each treating a different type of conflict. Each module contains two video films, audio recordings, reading texts and exercises. The conflicts are to be seen as inner and outer conflicts: difficulties at understanding the language and the partner’s reactions, the feeling of helplessness in foreign surroundings, being too shy to ask for information or respond to a verbal attack etc.

This teaching material is designed to help the student to overcome such difficulties as judging cultural differences and to adjust his attitude. The aim is to develop the student’s verbal skills and deepen his knowledge of a foreign culture, so that he will be able to react properly or master such conflicts.

With the aid of this material the students can prepare themselves to cope in conflict situations in German both at work and in his leisure time.

- CD-ROM Deutsch ist da (German is here): level A1 and A2

- interesting www-pages

When learning languages the emphasis is put not only on the study of the language itself, equally important is a thorough knowledge of the foreign culture.

Future: on demand of the students of the department of automobile industry we plan a special course “Deutsch KfZ-Technik” (German for automobile construction) and we are also developing material for mobile learning.

Whereas for the Swedish and Finish courses the learning groups are formed according to the different branches of studies, students from all departments and different branches of studies come together in one group to attend a German course. Technical texts and contents should either impart general technical knowledge or at least be specialized enough so that they can interest any student. The focus is on typical linguistic structures which can be trained with the aid of any particular vocabulary.

II. Which language skills should a student have mastered after he has finished a course for advanced learners?

He is supposed to be able

- to give information about himself, his studies, the polytechnic, his country (geography, history, customs and traditions) in detail
- to discuss everyday topics
- to present firms and products
- to answer the telephone (use typical phrases, spell names, understand and dictate numbers …)
- to write without mistakes (e-mails, e.g. dates, letter of application, curriculum vitae)
- to look after a foreign guest in a friendly, professional way
- to recognize problems in daily life and in the working environment, find and propose solutions
- to react properly in various situations taking into account intercultural differences

In the lessons we focus on listening comprehension, reading proficiency — most texts deal with technical topics — and speaking skills. At school following class rooms are at my disposal:

- A special language computer room with 20 computers (each computer with a license for “Deutsch im Display” and all other licensed language learning programs, access to the internet, digital dictionary MOT, headphone and microphone); beamer; television and video camera and video player.
- Several language laboratories (also with beamer) which I use mainly for listening comprehension and tests.
- Rooms especially conceived for conversation and presentation purposes and equipped with round tables, camera and beamer.

Students who prefer self-teaching have a Computer room with 20 computers (each computer with a licence for “Deutsch im Display” and all other licensed language learning programs, access to the internet, digital dictionary MOT, headphone) at their disposal.

Some of the courses are partially virtual courses. Here I can make use of “Moodle” and “Marratech”.

Session R2J

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A new project: Just in Time reBLending

= Blended Learning Methods and Mobile Tools in Vocational Education

Surveys and experience of daily business in EU show the lack and need of effective and efficient ways to learn for example languages and culture sensitive communication skills. These needs are especially visible in companies and in vocational education including learning-on-the-job. In this project the aim is to find answers and develop solutions to these questions. New information technology especially mobile devices, offer better possibilities to learn on-the-job than localized teaching and opens new possibilities to enhance the interaction between actors. To guide such learning processes a new generation of pedagogical methods, practices and learning tools are needed. Intelligent learning and automated tutoring tools (such as web-based and mobile devices) are required for teaching and tutoring employees as well as students learning on-the-job in SMEs.

Developing new pedagogical methods should always take place within a context. Germany with its 82 Million consumers is an important business player in Europe and therefore German is an excellent ‘pilot content’ for this project. Learners of German do not benefit from being surrounded by the language in every day situations, as is the case with English. Furthermore, the new EU countries increase the need of the knowledge of German.

The main aim of the project is to design, create and test e-learning content, blended learning methods and mobile learning tools for vocational education in the context of the German language and culture. In fact the goals are twofold and are developed in the same process interactively in the relation to each other:

1. to solve the problem of lacking web based learning and tutoring methods customized for the use in mobile environment by creating new learning and tutoring environment to be used in an open and flexible learning environment and culture for learning on the job. The method will be supported by the Mobile Supported Learning Environment (MSLE)

2. to develop new motivating and rewarding methods to learn German language and culture sensitive communications skills in authentic working environments (learning-on-the-job) and mobile learning tools for vocational education in the context of German language and culture.

The challenge is to combine individual/separate and very versatile learning processes (e.g. language learning and the working skills required in a profession as well as problem-solving skills and sustainable development) with formal and informal learning in companies and in vocational education including learning-on-the-job. The mobile learning tools, methods and the concept of the Mobile Supported Learning Environment (MSLE) will be usable in a wider context in any subject domain of vocational education after the project.

The goals of this project will support open and flexible learning just-in-time in working environment (learning-on-the-job) and create a supportive learning culture, where learning can take place in authentic working situations. Exchange of expertise and experience between training organizations (e.g. vocational institutions and polytechnics) and companies facilitate creation of individually blended learning conditions for a student.

The project provides the target groups with new methods for blended learning, tutoring, assessment, and documentation. Moreover it provides new working methods based on the individual learners’ learning process. The methods will be used in the MSLE. The environment includes learning tools, an automatic tutoring system, templates and pedagogical methods that are easy-to-use. The very elementary idea of MSLE is that the learning environment is not limited to virtual learning environment on a computer, but it extends to authentic working situations. The students’ concrete work tasks are facilitated and guided by mobile learning tools. These methods motivate students to learn, because they solve authentic problems just-in-time. The project also provides learning materials in the form of Learning Objects (LOs), which are interactive unitary pieces of the learning material. These can be used in various devices such as computers, mobile phones, PDAs and communicators (multiple platforms). Learning Objects are also open source products. Both teachers and students can develop new objects.

REFERENCES