



universität
wien

DIPLOMARBEIT

Titel der Diplomarbeit

“Content and Language Integrated Learning in Higher Education:
Lecture Comprehension at the Faculty of Business, Economics and
Statistics, of the University of Vienna“

Verfasserin

Milena Čiča

angestrebter akademischer Grad

Magistra der Philosophie (Mag.phil.)

Wien, 2012

Studienkennzahl lt. Studienblatt: A 343

Studienrichtung lt. Studienblatt: Diplomstudium Anglistik und Amerikanistik

Betreuerin: Ao.Univ.-Prof. Mag. Dr. Ute Smit

Acknowledgements

This thesis would not have been possible without the precious help of many dear people.

I would like to express gratitude to my supervisor, Prof. Dr. Smit and thank her for invaluable assistance, advice and guidance. Without her knowledge and help, this thesis would not have been possible.

Deepest gratitude is also due to my dear friend and professor, Dr. Bryan Jenner for sharing his excellent ideas with me, for motivating and encouraging me from the day I first attended a lecture in Linguistics.

I wish to express my love and gratitude to my beloved family, for their understanding, support and endless love throughout my studies. Also, I would like to thank my boyfriend and his family for their love and support.

Special thanks to my best friends who have always been there for me.

**“You cannot teach a language,
only create the condition under which it might be learnt”
(Von Humboldt 1898)**

TABLE OF CONTENTS

1. INTRODUCTION	13
2. ENGLISH IN EUROPEAN HIGHER EDUCATION	15
2.1. CONTENT AND LANGUAGE INTEGRATED LEARNING	16
2.2. INTERNATIONALIZATION	19
2.3. STUDENT AND STAFF MOBILITY	20
2.4. EMPLOYABILITY OF GRADUATES	22
2.5. TEACHING AND RESEARCH MATERIALS	23
3. HIGHER EDUCATION IN AUSTRIA AND THE BOLOGNA PROCESS	25
3.1. BOLOGNA AND EMI IN AUSTRIA	27
3.2. BOLOGNA AND EMI AT THE FACULTY OF BUSINESS, ECONOMICS, AND STATISTICS	28
3.3. INTERNATIONALIZATION OF THE FACULTY OF BUSINESS, ECONOMICS AND STATISTICS	39
3.4. MOBILITY AT THE FACULTY OF BUSINESS, ECONOMICS, AND STATISTICS	40
4. ACADEMIC LISTENING COMPREHENSION	44
4.1. STRATEGIES FOR DEALING WITH COMPREHENSION DIFFICULTIES	48
4.2. OVERVIEW OF RESEARCH STUDIES ON ASSESSMENT OF LECTURE COMPREHENSION	49
4.3. SELF-ASSESSMENT AS A METHOD FOR ASSESSING LECTURE COMPREHENSION	52
5. METHODS AND MATERIALS	55
5.1. THE QUESTIONNAIRE AND THE RESEARCH DESIGN	55
5.2. PROCEDURE	59
5.3. PARTICIPANTS	61
5.4. STATISTICAL ANALYSIS	63
5.5. RESULTS AND ANALYSIS	66
5.6. THE LECTURE COMPREHENSION CONSTRUCT	73
5.7. CLARIFICATION QUESTIONS	81
5.8. THE VISUAL DIMENSION OF THE LECTURES	84
5.9. LECTURE COMPREHENSION SCORES ACCORDING TO L1	86
5.10. PRE-LECTURE ACTIVITIES AND LECTURE COMPREHENSION	88
5.11. THE PREFERENCE OF ATTENDING EM LECTURES OVER L1 LECTURES	90
5.12. MOTIVATION	91
5.13. REASONS FOR ATTENDING AN EM LECTURE	93
5.14. EXPOSURE TO ENGLISH	94
5.15 FORMS OF ENGLISH INSTRUCTION IN HIGH SCHOOL	100
5.16. LIKES, DISLIKES AND COMMENTS ABOUT EM LECTURES	102

6. SUMMARY OF THE FINDINGS	107
6.1. APPLICATION OF THE FINDINGS	111
6.2. CONCLUSIONS AND RECOMMENDATIONS FOR FURTHER RESEARCH	114
BIBLIOGRAPHY	118
APPENDIX	128
ABSTRACT	148
ABSTRACT IN GERMAN	150
AUTHOR'S CURRICULUM VITAE	152

LIST OF TABLES AND FIGURES

1. List of tables

Table¹ 1: EM lectures of the Business and Administration programme	37
T 2: L1 of the respondents and the number of respondents of the particular L1	63
T 3: Internal reliability and correlations for the lecture comprehension construct	65
T 4: Mean scores and standard deviations for L1Index and EngIndex	68
T 5: Testing the significance for the discrepancy between the scores for L1Index and EngIndex	69
T 6: Testing whether the mean scores of L1Index and EngIndex are significantly different from each other	70
T 7: Lecture comprehension (LC) scores L1Index and EngIndex	71
T 8: Testing normality of distribution for LIndex and EngIndex	73
T 9: Comparison of the mean scores and standard deviations for the items tapping into the lecture comprehension construct for L1 and English	75
T 10: Time and work invested while attending a lecture in English compared to the one in L1	78
T 11: Clarification questions about unfamiliar words and expression and content	80
T 12: Comparison of the mean scores and standard deviations for the items tapping into the lecture comprehension construct for L1 and English of the Austrian, Norwegian, and German sample	82
T 13: Opportunity to ask questions during and after lectures	84
T 14: Importance of lecturer's transparencies/PowerPoint slides or other visual aids for understanding of the lectures	86
T 15: Comparison of scores for L1Index and EngIndex according to respondents' L1	88
T 16: Reading in preparation for lectures in L1 and English	89

¹ Hereafter: T

T 17: Respondents' answers to the question: If you have the chance to choose between a lecture held in English and a lecture held in L1, how often do you choose the one held in English?	91
T 18: Correlations between EnglIndex and motivational factors	93
T 19: Reasons for attending an EM course	94
T 20: Respondents' answers to the question: How many English books do you read per year?	96
T 21: Exposure to English through reading of print media and on the Internet	97
T 22: Exposure to English via watching movies, videos, and TV programmes	98
T 23: Use of English for speaking and writing	100
T24: Forms of English instruction in high school	102

2. List of figures

Figure 1: Distribution scores for lecture comprehension in L1 and English	71
--	----

1. Introduction

Educational settings in which a foreign language is used as a medium of instruction can be considered as both old and new (Dalton-Puffer 2007: 2). One of the oldest examples of this phenomenon was the use of the Sumerian language around 5000 years ago for teaching theology, botany and zoology to Akkadian conquerors (Mehisto, Marsh & Frigols 2008: 9). On the European continent it goes back to medieval times, when Latin was established as the dominant language of education (Dalton-Puffer 2007: 2).

Looking back on the tendency towards conceptually monolingual European education systems of the 19th century (with the exception of the multilingual Habsburg monarchy) the phenomenon of teaching and learning in a foreign language can, however, also be considered as innovative (Mey & Brown 2009: 536). The “monolingual mindset” (Edwards 2004: 3) of the 19th century Europe has, however, been challenged in the centuries that followed. Nowadays, an educational trend in which a language other than the students’ mother tongue is used as a medium of instruction has been widely adopted worldwide.

This trend has been fueled by globalization and internationalization, as well as by socio-political processes such as, in Europe for example, the decision of the Commission of the European Union to foster plurilingualism among the citizens of the member states (Wolff 2002: 47). This was done by setting an objective towards teaching and learning of content subjects through foreign languages (European Commission 1995: 47) in a “community in which no single language or language community should dominate the others” (Ammon & McConnell 2002: 6). In spite of this, English has been made the most dominant foreign language in schools and universities in European countries. The widespread dominance of English as the *Lingua Franca* in the educational settings,

especially with regard to the European higher education (Ammon & McConnell 2002; Fortanet 2008; Karabinar 2008; Ritzen 2004; Wilkinson & Zegers 2008) is the central topic of this thesis.

The present thesis opens with an analysis of the reasons behind the implementation of an instructional approach that uses English as a medium of instruction (EMI) at tertiary level in Europe. In this analysis I use the categorization of the reasons for the implementation of EMI given by Coleman (2006), as follows: CLIL, internationalization and the market in international students, student and staff mobility, teaching and research materials, and graduate employability. The prior aim of this thesis is to investigate lecture comprehension at one higher-education institution in Austria, namely the Faculty of Business, Economics and Statistics, of the University of Vienna. I therefore examine some of the reasons for implementation of EMI at this particular institution as well as in Austrian higher education as a whole. Afterwards, I present the theoretical framework for the different aspects of lecture comprehension, especially those investigated in the empirical research I conducted at the aforementioned higher-education institution. Finally I present a detailed report on this empirical research and discuss conclusions drawn from the findings of this research.

2. English in European Higher Education

Globalization processes have compressed time and geographical distances between people and brought them closer together. These processes have further shortened the trade and business paths between different countries from all the continents in the world. International joint ventures and international companies formed by mergers and acquisitions began to grow in number in every corner of the world. As a result, an increased number of international business partners have established a common language of communication – English. Nowadays, “it is hard to think of any business person who is not ready to exchange information in English”. (Ruiz-Garrido & Palmor-Silveira 2008: 159).

The influence of globalization came to be omnipresent. This could be seen in the areas of politics, science, education, and so on, since these areas also began to gain an international dimension, characterized by the use of English as a global *Lingua Franca*. The higher-education institutions also recognized the worldwide importance of English and began to use this language as a medium of instruction. In Europe, after the 1999 Bologna Declaration on the convergence and reform of European higher education many colleges and universities dramatically increased the number of courses offered in English (Hellekjaer 2010: 11). Besides the fact that English is the most widely spoken language, with 47% of the European citizens who can speak it (Fortanet 2008: 22), there are diverse reasons for implementation of an instructional approach that uses English as a medium of instruction (EMI). Coleman (2006: 4-6) argues that these reasons range “from the ethical and pedagogical through the pragmatic to the commercial” and can be categorized as follows: CLIL, internationalization and the market in international students, student and staff mobility, teaching and research materials, and graduate employability. The following sections of this chapter I discuss the above given reasons in more detail.

2.1. Content and Language Integrated Learning

The term Content and Language Integrated Learning (CLIL) was coined in 1995 by Anne Maljers and David Marsh, who, together with a team of researchers involved in the CLIL Compendium Project, explained CLIL as

any dual-focused educational context in which an additional language, thus not usually the first language of the learners involved, is used as a medium in the teaching and learning of non-language content (Marsh 2002: 2).

Such an educational approach was applied in the USA, where it was solely used in order to create an opportunity for “minority language students [to] acquire proficiency in a dominant target language” (ibid.: 58). Across the Atlantic, however, CLIL has been a part of the European Integration Policy and a means of facing the challenge of “promoting foreign language learning [and creating a] continent without frontiers, where all citizens, workers or students, can live, work and study wherever they choose”, as was proposed by the European Union Commission and Council (Fortanet 2008: 21).

Over the last decade, numerous linguists have stressed the importance of implementation of CLIL at all educational levels across the globe, especially since it has been recognized that by integrating curriculum content and foreign language can have a positive impact on both, subject knowledge and foreign language proficiency (Coonan 2002; Coyle 2005; Dalton-Puffer 2007; Marsh, Maljers, and Hartiala 2001; Wilkinson 2004). It has been claimed that CLIL provides a “platform for learning by doing”, which is why some have likened it to learning a foreign language using a similar naturalistic path which has been used to learn the first language (Marsh 2002: 76). This kind of naturalistic language learning in CLIL classrooms is also described as a “a language bath

[...] which enhances the development of communicative competence” (Dalton-Puffer 2007: 3). Furthermore, CLIL has been evaluated as a highly interactional approach with the aim to

increase the students' exposure to the language and to create a motivating, low-anxiety environment in which attention is paid to the message conveyed rather than the accuracy of the linguistic forms used. In this way the language competence of the students is to be enhanced [...] (Jexenflicker 2009: 1).

The term CLIL was adopted in the European discourse as an umbrella term for a “whole gamut of terms” (Dalton-Puffer 2007: 1) (e.g. Content Based Instruction (CBI), Bilingual Integration of Language and Disciplines (BILD), Teaching Content in a Foreign Language (TCFL), among many others²) that have been used in this context. In Austrian educational circles, there are four labels associated with CLIL (Eurydice 2004/05: 3f):

- **EAA** Englisch als Arbeitssprache (English as a Working Language)
- **EMI** English as a Medium of Instruction
- **EAC** English Across the Curriculum
- **LAC** Language Across the Curriculum

The acronym EMI is with regard to this thesis the most important label associated with CLIL, as it is an umbrella term used to refer to the educational setting at the tertiary level in which content courses such as Law, Economics, Mathematics, and so on, are delivered in English (Eurydice 2004/05: 3). Coyle, Hood & Marsh (2010: 24) argue that EMI as an instructional approach has a different objective than CLIL. The difference in objectives is that EMI focuses on learning the content, in contrast to CLIL, where there is a focus on both language and content learning. This may be due to the assumption that

² Cf. www.content-english.org for a list of 44 terms used worldwide for educational settings where a language other than mother tongue is used as a medium of instruction

university students have already mastered the language and are equipped to focus solely on the content. The language is therefore seen merely as a medium for delivering the content. The lecturers of the economics and business studies are usually subject experts, who deliver content through English (Dafouz Milne & Núñez Perucha 2010: 214). They are, however, “generally not aware of what the language learning aspect entails for their teaching” (Smit 2003: 47).

Some universities recognize the need to tailor the content lectures in a foreign language according to their students' needs, which is substantial for the successfulness of the implementation of EMI. For example, the Faculty of Business, Economics and Statistics, of the University of Vienna, that is the subject of the empirical research included in this thesis, uses an EMI approach with a focus on content as well as an ESP (English for Specific Purposes) approach with a focus on language (for example, for business English courses).

In general, higher-education institutions undergo a process of internationalization in order to prepare their students for international communication and trade. Another reason for internationalization is to increase an institution's competitiveness of the market for higher education and attract more international students (Coleman 2006; Costa & Coleman 2010; Hellekjaer & Wilkinson 2001). The following section provides a discussion of internationalization of higher education and the market in international students.

2.2. Internationalization

After the Bologna Declaration was signed and the European Higher Education Area (EHEA) was established, universities in Europe began undergoing growing processes of internationalization and modernization. These processes are directly linked to the initiative of implementing EMI into their curricula (Costa & Coleman 2010; Coleman 2006; Phillipson 2009). It has been claimed that EMI approach has been increasingly popular in economics and business studies (Ruiz-Garrido & Palmor-Silveira 2008; Unterberger & Wilhelmer 2011) because it served to prepare students for the international market and for communication with international business partners.

An initiative of implementing EMI also represents a means of creating a competitive advantage by attracting international students (Hellekjaer & Wilkinson 2001: 400). Coleman (2006: 3) explains that the need to attract international students is realized in the fact that on the higher-education market nowadays, there is an excess of supply over demand, and universities have to work constantly in order to be better than the competition. This means that the higher-education market operates like any other services market. Here, according to GATS (General Agreement on Trade in Services), education is supplied as an “internationally tradable service” (Knight 2008: 13). By paying tuition fees, students act like customers. They make their purchase decisions according to the university rankings, brand name, and so on, but also according to the institution’s offer of the EM programmes.

International staff and students attracted by the EM programmes enhance “institutional prestige” (Coleman 2006: 5) and universities’ revenues increase through tuition fees/contributions paid by international students. Apart from being a source of university revenues, international students may stay in the

host country after graduating and fill positions for which there is scarcity at the national level. They may become political allies and promote foreign policy issues, as well as creating and improving trade and international business connections (Andrade 2006: 113). Such an international exchange of knowledge can contribute to widely needed international education and understanding (Andrade 2006: 133) and intercultural awareness (Hellekjaer & Wilkinson 2001: 399), which could be a “beacon, illuminating a world of cultural difference and a common global humanity, building blocks for a just and peaceful world” (Peterson et al. 1999: 76).

2.3. Student and staff mobility

Over the past few decades, there has been an increase in mobility of all members of the disciplinary community. On the one hand, academic and professional staff experience more mobility owing to the increased number of staff exchanges, academic visits, and congresses. Besides academic and professional staff, more and more students decide to study in a foreign country or spend a semester or a year abroad via exchange programmes (Wilkinson & Zegers 2008: 3) such as Erasmus or CEEPUS.

The Erasmus programme has been designed to stimulate the mobility of European students, by encouraging and enabling university students to spend a short-term study period in another country within the European Union and Turkey (Kelo et al. 2006: 4). Since 2005, the CEEPUS mobility programme has promoted and facilitated mobility of university students and teachers who do not hold citizenship of a European Union member country, in particular Albania,

Bosnia and Herzegovina, Croatia, Macedonia, Montenegro, and Serbia (ibid.: 180).

Due to such exchange programmes there is an increasing number of students and teachers of different disciplines studying and/or working outside their home country, because they are interested in an international career or simply in order to increase their employability chances. Some higher-education institutions, like the Faculty of Business, Economics and Statistics, of the University of Vienna, strongly recommend to their students to go on exchange programmes abroad, not only to stimulate the students to take even more courses in their first foreign (and business) language, that is English, but also to go and study in their second (and business) language, that is French, Spanish, Italian, or Russian. For this reason, some students spend a semester in, for example Italy, where they take courses in both Italian and English. In such a way they simultaneously gather some valuable intercultural experience and increase their competitive advantages in the labor market.

After exchange programmes had proved to be quite successful, new policies were promoted in order to support the growing need for mobility and the increasing mobility as such. International double-degrees have been established that require students to spend a certain period of their studies at two universities situated in two different countries, after which they obtain a degree from both of them. Owing to the creation of the European Higher Education Area within the Bologna process, such students' double degrees are recognized internationally (http://www.ond.vlaanderen.be/hogeronderwijs/bologna/documents/Bologna_lea_flet_web.pdf, 12 September 2011).

The implementation of the student-mobility programmes has been a central element of European policy in the last few decades. It has been re-asserted in

the 2003 European Commission Action Plan and recapped in the 2003 Berlin Declaration (Coleman 2006: 9), stressing the need to increase language learning across different academic disciplines (Eurydice 2005b: 27). During their residence abroad, students seem to improve their language proficiency (Coleman 2006: 9). Most of the exchange programmes are offered in English in order to attract more students from diverse countries, therefore students tend to increase their English language proficiency. English language proficiency is very important for graduates, since “[t]hat is the language we have to use if we want to prepare our students for an international career in a globalizing world” (Kruseman 2003: 7). In the following section, graduate employability with regard to EMI will be discussed.

2.4. Employability of graduates

One of the frequent reasons for implementation of EMI in higher education has been related to increasing the employability chances of graduates in the international labor market (Ammon & McConnell 2002; Costa & Coleman 2010: 10). The correlation between EMI and raising employability chances is based in

the common belief that teaching subject courses in English can promote students’ motivation in learning the English language, and hence improve their proficiency, while at the same time facilitating their academic performance and increasing their competitiveness in the job market (Chang 2010: 58).

Furthermore, graduates with competence in foreign languages, especially in an international language like English, have a competitive advantage because they can work with international partners in their own country but also across national borders (Räisänen & Fortanet-Gómez 2008: 1). As English as a *Lingua Franca* has become important in the global economy and international business, it became clear that “business students in particular need good English skills for

their professional careers” (Unterberger & Wilhelmer 2011: 93). Suvinity (2010: 44) adds that EMI is used as a way of preparing students for global industries but also for scientific communities. This is because scientific research materials and consequently teaching materials are predominantly published in English.

2.5. Teaching and research materials

More than ten years ago Graddol (1997: 45) observed that:

[t]he need to teach some subjects in English, rather than the national language, is well understood: [...] up-to-date text books and research articles are obtainable much more easily in one of the world languages and most readily of all in English.

He further observed the following correlation: owing to the increased number of up-to-date teaching and research materials in English language, “one of the most significant educational trends world-wide is the teaching of a growing number of courses through the medium of English” (ibid.). Nowadays, universities increasingly opt to implement EMI instead of translating necessary materials. As already mentioned, the Faculty where the empirical research for this thesis has been conducted, uses EMI and accordingly instructional materials in English. There are courses, such as those in microeconomics and macroeconomics, which are offered in both English and German and students can choose between the two. Interestingly, the book used in one of these courses, is *Microeconomics*, by Jeffrey M. Perloff, which is written in English, but is used also when the lectures are given in German.

In general, one of the reasons why the lecturers opt for the book in English rather than the one in national language may be that some books needed for

specific lectures cannot be obtained in the national language, but only in in English. In his research on lecture comprehension, Chang (2010: 69) says that, compared to the other departments, the students of the Business Management (BM) department, of a private university in northern Taiwan, prepared for their lectures by reading only the English version of their textbook because the Chinese version was not available. Compared to other departments, where teaching materials were available in both Chinese and English, the students of the BM department reported a greater improvement in their English reading skills and lecture comprehension in EM courses.

3. Higher Education in Austria and the Bologna Process

In the last decade, the university system in Austria has undergone some major changes. A substantial revision of the university curricula began in 1997 when the Austrian Parliament passed a major curricular reform (University Studies Act - UniStG of 1997). In 1999 the Bologna Declaration was signed and there was a whole new system of higher education.

One of the main novelties after the 1999 Bologna Declaration was the introduction of the two-tier system of studying for undergraduate and graduate degrees. Before that, Austria had a traditional one-tier system, which was characterized by long study programmes like *Diplomstudium* (diploma programme), which did not distinguish between an undergraduate and graduate phase (Pechar & Pellert 2004: 323). In contrast, the programme of the new two-tier system outlined in the Bologna Declaration, called for

[the] adoption of a system essentially based on two main cycles, undergraduate and graduate. Access to the second cycle [...] require[s] successful completion of the first cycle studies, lasting a minimum of three years (Ash 2006: 259).

The first cycle refers to a **bachelor's programme**, whereas the second refers to a **master's programme**. In 2000/2001, Austrian universities started adopting bachelor's programmes, began transforming diploma programmes using a bachelor's/master's pattern, and started to introduce new study programmes according to this pattern (Pechar & Pellert 2004: 317). The benefits of the implementation of the new system were assumed to be realized especially through the new six-semester-long bachelor's programmes, with the aim to "reduce the number of early leavers and raise the number of 'nominal' academics" (Ash 2006: 261). This need for increasing the number of academics originated from the OECD (Organization for Economic Cooperation and

Development) reports that suggested that Austria did not have an “abundance of students at tertiary level” (Pechar & Pellert 2004: 322) despite the fact that most Austrian universities employ an open-access policy³.

Another important novelty in the Austrian higher education system that arrived with the Bologna Declaration is the European Credit Transfer System (ECTS). After 1999, all new bachelor’s/master’s study programmes were obliged to implement the ECTS, and after 2002 the same was compulsory for diploma programmes. The ECTS system in itself was developed with an aim to primarily enhance students’ institutional mobility, (Törmänen & Tuovinen 2000-02: 3) and is considered to be in direct correlation with the implementation of English as a medium of instruction at higher education institutions.

On the whole European continent, the student mobility enhanced. However, students began reporting problems with the recognition of credit points. Only three years after the deadline for the realization of the European Higher Education Area was set and eight years after the Bologna Declaration, one could read in the EUA (European University Association) report on the state of European Higher Education in 2007 that 47% of European exchange students had problems with the recognition of the credits they earned after having studied outside their home university. In addition to problems of accreditation procedures, “[l]anguage barriers [...] continue to pose major obstacles to mobility, even when programmes are now offered in English” (Crosier et al 2010: 45).

The current situation at the Faculty of Business, Economics and Statistics with regard to student mobility indicates low rates of student participation in

³In contrast to Germany which has a NumerusClausus, The Austrian entitlement system is characterized by the open access policy for all students who hold the *Matura*

exchange programmes abroad, although there is a significant difference between the numbers of incoming and outgoing exchange students. The reasons for the small percentage of students' engaging in the exchange programmes are to a certain extent analogous to those outlined above. In addition, there are some significant observations made by the staff of the International Exchange Programmes Support Office that give valuable insight into the phenomenon of student mobility at this particular higher education institution. These will be discussed in detail later in this chapter.

3.1. Bologna and EMI in Austria

According to the research by Ammon & McConnel in 1999/2000, immediately after the Bologna Declaration was signed, 10 out of 37 higher-education institutions in Austria offered programmes in English (Coleman 2010: 6). Such programmes are usually referred to as 'international' programmes (Alexander 2008: 77; House 2003: 570).

Since these 'international' programmes offer courses which are no longer in German as the language of instruction but mostly in English (House 2003: 570), their prior aim is to attract more international students. In Germany and Austria, there was a need to increase the percentage of international students attending higher education institutions by 10% (Alexander 2008: 85) and 'international' programmes that offer instruction in English were seen as a possibility to fulfill that need. EMI programmes were also considered as a means for improving the international ranking of both English and German:

[o]riginally these programs, or at least some of them, had been set up to rely solely on English, with no role at all for German. However, German was generally introduced as an obligatory

component. [...] Because the programs have been successful in attracting new foreign students, who otherwise would not have studied [...] [here], they have at the same time helped to increase the number of learners and speakers of German as a foreign language (Ammon & McConnell 2002: 174).

Implementation of EMI programmes is, as explained, institution-specific. In the following section, the reasons for adopting EMI at the Faculty of Business, Economics and Statistics, of the University of Vienna will be discussed.

3.2. Bologna and EMI at the Faculty of Business, Economics, and Statistics

After 1999, all programmes of study at the Faculty of Business, Economics and Statistics were reorganized according to the implementation requirements of the Bologna process. Already in the winter semester of 2006/2007 all one-tier graduate and undergraduate programmes were transformed and reorganized in the two cycles, after which students were able to enroll in PhD or Doctorate programmes.

At present, in the first cycle of studies, students may choose between four bachelor's degree programmes, namely Business Administration (BA), International Business Administration (IBA), Economics, and Statistics. In the second cycle, there is a master's programme in Quantitative Economics, Management, and Science, given entirely in English and two master's programmes, namely in BA and IBA, given in German and English. Finally, there are five PhD programmes in Management, Logistics, and Operation Management, Statistics and Operations Research, Economics and Finance. (<http://wirtschaftswissenschaften.univie.ac.at/en/degree-programme/programmes-of-study/>, 12 September 2011)

Statistics from the summer semester of 2011 indicate that most of the students were enrolled in the Business Administration and International Business Administration degree programmes. From the total of 4863 students, 3763 (78,33%) were enrolled in these two programmes, slightly more of them in the Business and Administration programme. 232 (4,83%) of them were enrolled in the Statistics programme and 868 (17,99%) in the Economics degree programme (http://studien-lehrwesen.univie.ac.at/fileadmin/user_upload/studienundlehrwesen/Statistische_Daten/studstat_72_2011S.pdf, 12 September 2011).

The new curricula of the four degree programmes include special clauses concerning the language(s) of instruction and all of them specify that English is used as a medium of instruction alongside with German. However, the clauses concerning the language(s) of instruction are not the same for all four degree programmes. I will therefore discuss the differences between these clauses in more detail, starting with the curriculum for the BA degree programme. According to the Article 7(1) and (2) of the BA curriculum:

4. If not specified otherwise, the languages of instruction are German and English. (2) It is recommended to complete lectures given English (http://wirtschaftswissenschaften.univie.ac.at/fileadmin/user_upload/fak_wiwi_neu/studienangebot/bakkbw06.pdf, 12 September 2011).

Here can be observed that students of this degree programme receive instruction in two languages, German and English. Further, it can be assumed that it is generally optional to complete lectures given in English, since the Article 7(2) includes a recommendation, not an obligation to complete lectures given in English. As I will show later in this chapter, there is only one lecture

besides Business English module that must be completed in English only. All other lectures given in English are optional.

The curriculum of the IBA programme includes somewhat different regulation about the language(s) of instruction. According to the Article 7(1) of the IBA curriculum, “the languages of instruction are German and English, if not specified otherwise”

(http://wirtschaftswissenschaften.univie.ac.at/fileadmin/user_upload/fak_wiwi_neu/studienangebot/bacibw08.pdf, 12 September 2011). However, this does not apply to:

- (1) LSP (Language for Specific Purposes) lectures according to § 6 (3.1) Zif. 1 (Business communication [module] in the second foreign language).
- (2) Lectures of the specialization phase International Management, which are given exclusively in English (ibid.).

One can observe here that the students of the IBA programme receive instruction in several languages: German, English, and another foreign language for the Business communication module. This module is part of the specialization phase, and can be completed in French, Russian, Italian, and Spanish. Students may also complete lectures in a language different than those given before, as explained in the Article 7(2):

It is possible to accredit lectures, which have been successfully completed in a foreign language other than English in a non-mother-tongue, respectively, non-German speaking foreign country (ibid.).

Furthermore, the students of the IBA programme have to write two bachelor papers in a language other than their mother tongue. According to the Article 8(5) of the IBA curriculum, there “are to be written in English, but can be written

in another foreign language in case the supervisor agrees” (ibid.). Besides the observation that students of the IBA degree programme receive instruction in at least one more foreign language than the students of the BA programme, it can be further concluded from the Articles 7 and 8 that completion of lectures in English and one additional foreign language is not just recommended, it is a must.

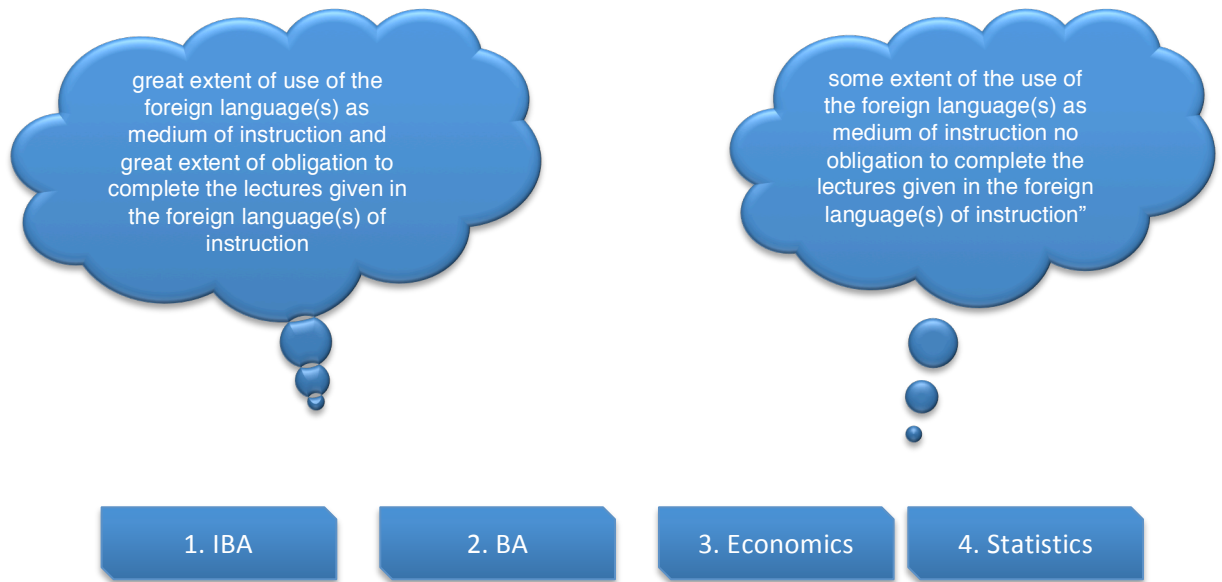
In general, it can be concluded that the main differences between the clauses for the language(s) of instruction for the BA and IBA degree programmes are: (1) the extent of the use of the foreign language(s) as medium of instruction and (2) the extent of obligation to complete the lectures given in the foreign language(s) of instruction.

In order to determine whether these conclusions apply to the differences between the clauses for the language(s) of instruction of the all four degree programmes, it is necessary to consider the curricula of the degree programmes in Statistics and Economics. According to the Article 1(2) of the Statistics curriculum, an “additional educational objective of the degree programme is the mastery of English as a language for statistical purposes”. (http://wirtschaftswissenschaften.univie.ac.at/fileadmin/user_upload/fak_wiwi_neu/studienangebot/bakkstat06.pdf, 12 September 2011). However, the use of English as a medium of instruction is possible, but not obligatory. In comparison to the regulation given in the BA and IBA curriculum, the Article 1(2) of the Statistics curriculum specifies that a foreign language used for instruction, may be also used for students’ presentations, which are to be assessed solely according to the content competence and not according to the language proficiency (ibid.). There is no specification of the use of language(s) of instruction other than German and English.

With regard to the Economics curriculum, in the Article 13 it is stated that “[d]uring the degree programme, a minimum of 8 ECTS has to be completed in lectures given in English”. (http://wirtschaftswissenschaften.univie.ac.at/fileadmin/user_upload/fak_wiwi_neu/studienangebot/bakkvwl06.pdf, 12 September 2011). From this regulation, it can be concluded that it is obligatory to complete lectures given in English, at least to a certain extent.

After considering the clauses regulating the language(s) of instruction of the four degree programmes offered at the Faculty of Business, Economics and Statistics, the conclusions drawn before stay the same. Again, the main differences between these clauses of all degree programmes are: (1) the extent of the use of the foreign language(s) as medium of instruction and (2) the extent of obligation to complete the lectures given in the foreign language(s) of instruction.

If one would rank these four degrees according to the two given differences, with 1 standing for “great extent of use of the foreign language(s) as medium of instruction and great extent of obligation to complete the lectures given in the foreign language(s) of instruction” and 4 standing “some extent of the use of the foreign language(s) as medium of instruction and no obligation to complete the lectures given in the foreign language(s) of instruction”, the four degree programmes would be ranked as follows: 1. IBA, 2. BA, 3. Economics, 4. Statistics (see illustration).



With regard to the above given conclusions about the language(s) of instruction and obligation to attend these, it can be observed that the Faculty as a whole has adopted two instructional models:

1. Model with German as a medium of instruction together with compulsory and optional EMI courses and compulsory LSP courses (in business English and sometimes in an additional foreign business language) (in the bachelor's programmes)
2. EMI model – where all the courses are taught in English (for example, in the specialization phase of the IBA programme or in the master's programme)

In order to provide further insight into the instruction in English the respondents of the present research study and students at the Faculty in general are faced with I will now present an overview of the EM courses at the Faculty of Business, Economics and Statistics. The overview of the lectures will include only lectures that were offered in the summer semester of 2011, since that was

the period when the field research for this empirical study took place. Also, the overview will only include lectures of degree programmes of Business and Administration (BA), and partially of International Business and Administration (IBA), as these two programmes have almost identical introductory and core phases, and a very similar specialization phase. Also, the majority of students were enrolled in these two programmes in 2011, and, as it will be shown later in Chapter 5, most of the respondents who took part in this research study indicated that they were enrolled in the BA and IBA degree programmes.

The following table includes courses that are part of the 2011 curriculum of the BA programme of all three phases of the study programme: introductory and orientation phase (STEOP), core phase, and specialization phase. All the courses included in the table are 2 hours/4 ECTS or 4 hours/8 ECTS courses. All these courses are characterized by continuous assessment of coursework. These are the so-called “prüfungsimmanente Lehrveranstaltungen (PI)” i.e. courses with continuous assessment, which are defined as:

courses, which are assessed based on various written or oral exams taking place during the lecture. In case of non-sufficient attendance, the PI lecture is to be assessed negatively (§ 8 of the University Vienna Statute)

The language of instruction is also given in the table, but this will be discussed in more detail later in this chapter of the thesis. The next item of information about the EM courses included in the table is whether there are online support materials, such as e-learning platforms. Finally, the maximum number of participants who can sign up for these courses is given. The maximum number of participants shows that there is a restricted admission for these courses, which is specified in the curriculum for Business and Administration programme and is also in accordance with the University Act 2002 (http://wirtschaftswissenschaften.univie.ac.at/fileadmin/user_upload/fak_wiwi_ne

[u/studienangebot/BW_Bachelor_Version2011.pdf](#), 12 September 2011).

According to the Article 9(1) of the BA curriculum, the maximum number of participants to be admitted to the continuing and advanced university courses is 50, to seminars 24, and to Business English and continuing and advanced university courses in the module Basics of Information Technology 30. The maximum of 200 participants is to be admitted to all other university courses (ibid.). I included this information in the table, because it is important to keep in mind that there is difference in listening to a lecturer in a course with 200 participants than in a course with 30 participants. One of the reasons for this, as Lee (2009: 42) explains, is that “the size of the audience influences the rhetorical and linguistic choices lecturers make in university settings“. At the same time, courses with smaller number of participants enable the use of more interactive teaching and learning methods. Such methods may have a positive influence on students’ understanding and learning of content and language.

The article 9(1) further shows that there are different types of university courses (Universitätskurse UK), namely:

- Introductory university courses (Einführende Universitätskurse EK)
- Continuing university courses (Fortführende Universitätskurse FK)
- Advanced university courses (Vertiefende Universitätskurse VK)
- Seminars (Seminare SE)

The main differences among the types are in the genre of instruction (see chapter: Academic listening comprehension) and in assessment. The EK courses are introductory courses, which are most often followed by the continuing FK courses. FK lectures can be taken simultaneously with VK courses and the difference between them is that VK courses have a specific type of assessment, which is very often based on a team or group project.

Seminars (SE) aim at developing students' skills in researching into a specific subject matter, presenting the findings of the research, and writing a report or an essay.

Table 1: EM courses of the Business and Administration programme

Lecture	Phase	Hours/ECTS	Assessment	Language	Online support material	Participants #	Lecture type
Principles of Economics	STEOP	2 H /4 ECTS	CACW	English	E-Learning	200	EK
Marketing (Part 1)	Core	2 H /4 ECTS	CACW	English	Missing info	350	EK
Marketing (Part 2)	Core	2 H /4 ECTS	CACW	English/German	Missing info	50	FK
Introduction to Microeconomics	Core	4 H /8 ECTS	CACW	English/German	Missing info	50	UK
Introduction to Macroeconomics	Core	4 H /8 ECTS	CACW	English/German	Missing info	50	UK
Business English 1&2	Core	2 H /6 ECTS	CACW	English	Missing info	30	EK&FK
International Strategy and Organization	Specialization	2 H /4 ECTS	CACW	English	E-Learning	24	SE
Strategic Management of International Enterprises	Specialization	2 H /4 ECTS	CACW	English	E-Learning	24	SE
International Financial Management	Specialization	2 H /4 ECTS	CACW	English	E-Learning	200	EK
International Financial Management	Specialization	2 H /4 ECTS	CACW	English	Missing info	50	VK
Advanced Personnel Economics	Specialization	2 H /4 ECTS	CACW	English	E-Learning	24	SE
International Retail Prices	Specialization	2 H /4 ECTS	CACW	English	E-Learning	50	FK
International Personnel Management	Specialization	2 H /4 ECTS	CACW	English	E-Learning	50	SE
Principles of Finance	Specialization	4 H /8 ECTS	CACW	English	E-Learning	200	EK
Production Analysis	Specialization	4 H /8 ECTS	CACW	English	Missing info	50	VK
Supply and Chain Management	Specialization	4 H /8 ECTS	CACW	English	Missing info	50	FK
Enterprise Resource Planning Systems	Specialization	2 H /4 ECTS	CACW	English	E-Learning	30	EK
IT-Governance	Specialization	2 H /4 ECTS	CACW	English	Missing info	50	VK
IT-Governance	Specialization	2 H /4 ECTS	CACW	English	Missing info	30	SE
Decision and Game Theory	Specialization	2 H /4 ECTS	CACW	English	Missing info	30	UE
Decision and Game Theory	Specialization	4 H /8 ECTS	CACW	German	Missing info	120	UK
Money and Banking	Specialization	2 H /4 ECTS	CACW	English	Missing info	70	UK

As can be observed from the table above, the majority of courses are those types of courses with a smaller number of participants, which contributes to increasing interactivity. Moreover, there is quite a high number of VK and SE courses with an aim to develop students' interactive communicative skills through team and group projects, presentations, and essays.

In addition, it can be observed that there is one course in English in the STEOP phase, namely Principles of Economics, which is offered solely in English. As previously mentioned, this is the only one course the students must complete in English, while the rest of the EM courses are optional. Interestingly, in the core phase, Marketing EK is offered only in English, whereas Marketing VK, which follows only after a student successfully passes Marketing EK, is offered in English and in German. This, however, may be specific to the lectures of summer term 2011.

Introduction to Microeconomics and Introduction to Macroeconomics are offered in both English and German. As mentioned, in these two courses, sometimes the instruction materials, such as books or mock exams in English are also used even when the courses or the exam is given in German. As explained above, the reason for this might be, that new books are generally published predominantly in English (Graddol 1997: 45; Hellekjaer & Wilkinson 2001:399).

With regard to lectures in the specialization phase, the first thing that one can observe is a similar case to the Marketing lecture in the core phase. One course, namely Decision and Game Theory, is offered as a UE (applied university course) only in English, but the same lecture as a UK (university course), which precedes UE, is offered only in German.

In general there are more EM lectures in the specialization phase than in the first two phases. However, these belong to different obligatory and elective

modules, which students combine for the final phase of the bachelor's programme. Some students, therefore, have a greater number of EM lectures than other (in the last phase and on the whole), depending on how they choose and combine their specialization modules.

There are also a number of lecturers who use e-learning platforms for offering lecture support materials, such as PowerPoint slides, or additional materials, such as materials for further reading. This is interesting to see because research findings indicate that students use these to improve their understanding of the lectures. For example, the research conducted in Sweden shows that the students, who have an access to such support materials, often use them to read before or after lectures to compensate for difficulties with EM lecture comprehension (Airey & Linder 2006). This is confirmed by the findings of the empirical research that took place at the Faculty of Business, Economics and Statistics, which will be further discussed later in this thesis.

In general, e-learning platforms as such constitute very useful communication facilities between students and lecturers and among students themselves, since there are often forums where information regarding lectures, team/group projects, presentations, homework, and so on, can be exchanged. Depending on the lecture, the languages of communication in such forums may be German, English or any other language.

3.2. Internationalization of the Faculty of Business, Economics and Statistics

The University of Vienna is made up of 18 faculties and centers, subdivided into different departments. The Faculty of Business, Economics and Statistics comprises departments of business and administration, finance, economics,

statistics and operations research, business law, and industrial sociology. At present, the disciplinary community of the faculty consists of approximately 320 staff involved in carrying out research and teaching of approximately 4800 students. More than 30% of the students come from abroad. For the purpose of comparison, the rest of the institutes of the Vienna University today welcome approximately 84000 students, with about 26% of them come from abroad (<http://www.univie.ac.at/universitaet/zahlen-und-fakten/>, 12 September 2011).

It has been claimed that the Faculty⁴ actually has a higher percentage of international students than any other Austrian university. This is because it caters to students' needs by offering them the chance to attend lectures in German and in English for which credit may be given. In fact, a great number of lectures are delivered in English and there are many master's and PhD programmes that can be completed entirely through English. Internationality is one of the fundamental principles of the Faculty. Furthermore the Faculty "is currently linked by cooperation agreements with about 80 universities in every continent" (<http://wirtschaftswissenschaften.univie.ac.at/en/faculty/mission-statement/>, 12 September 2011). These agreements are used for exchange programmes that include both students and teachers as well as for joint-research projects (ibid.).

3.3. Mobility at the Faculty of Business, Economics, and Statistics

At the Faculty of Business, Economics and Statistics there is an International Exchange Programmes Support Office⁵, which offers information and advice to

⁴Hereafter: the term "(the) Faculty" will be used to refer to the Faculty of Business, Economics and Statistics

⁵Hereafter: the term "(the) Office" will also be used to refer to the International Exchange Programmes Support Office

students with regard to possibilities of studying or doing an internship abroad. The Office also provides information about exchange programmes for the teaching staff and about the procedures for acquiring international grants for projects. Moreover, students who come to study here for a short period of time can also find all the information they need at the Office, in particular regarding the details of their exchange programme, about the courses, course registration, and the language requirements. The staff also actively promotes the services of the Office by giving presentations about exchange programmes for the students during particular lectures. They also provide and distribute different brochures and leaflets with information about student mobility programmes. In such a way, students are constantly advised to engage in spending a semester or more abroad. Finally, the same recommendations can be found in the curricula of the degree programmes. The study curricula of the programmes in BA and IBA include clauses (§ 6 and § 7 (1) respectively) in which semester abroad is recommended. The curriculum for IBA includes an additional clause § 6 (3)) which enables students to do a two-month internship abroad instead of the International Management module in the specialization phase. The internship must be done in a country, in which the official language is neither German nor the student's mother tongue.

According to their previous experience, the staff of the International Exchange Programmes Support Office concluded that “the lack of language proficiency in German and English often results in bad learning outcomes which means that exchange students often fails exams” (<http://international.bwl.univie.ac.at/en/incoming/erasmus/language-requirements/>, 12 December 2011). Owing to this observation, and in order to “avoid this [outcome] in the future [...] [they] came to a conclusion that it would be the best to require some language proficiency certificates from incoming exchange students” (ibid.). Therefore, the incoming exchange students ought to

submit relevant language proficiency certificate(s) before their arrival to Vienna as follows:

1. Students who wish to follow courses offered in German will have to at least present a certificate of language proficiency in German at level B2/2 CEFR (Common European Framework of Reference for Languages).
2. Students who wish to follow courses taught in English will also have to at least present a certificate of language proficiency in English at B2/2 CEFR (ibid.).

Interestingly, however, the same rule does not apply to the international students who do not come within an exchange programme. In order to be admitted to the University of Vienna, some international students (those from non-German speaking country, especially those who do not hold a secondary education diploma from a German-speaking country or from a German or Austrian school abroad), are required to present a language proficiency in German at level B2 or higher (<http://studentpoint.univie.ac.at/en/application/voraussetzungen/knowledge-of-german/>, 12 September 2011). However, they are not required to present certificate(s) about their language proficiency in English. One may assume that the reason behind this is that in most of the schools in the world, English is taught as a foreign-language for a number of years, and it is hence assumed that students will have a required level of language proficiency after they obtain their high school diploma. Such an assumption may be considered quite valid if one observes the results of a recent survey on the extent of foreign language learning in the curricula of primary and secondary education. The results indicate that in Europe “a majority of primary school children in ten countries are learning English” (Eurydice 2005a: 44). Moreover, the survey shows graphically that “English is the most taught language in virtually all countries [...] [,]

[f]urthermore, in both primary and secondary education its dominant position is becoming even stronger” (ibid.). In accordance with the presumably sufficient level of English proficiency by international students and their B2 level of proficiency in German, one may assume that international students ought not to have significant difficulties in studying in German and English at the Faculty of Business, Economics and Statistics.

After years of experience with international students at the Faculty as a teacher of Business English, observed that international students tend to have quite a high level of proficiency in English at the beginning of their studies, but the longer they study in German, the poorer their knowledge of English becomes (personal communication). He further explains that international students are more proficient in English than in German in the first couple of semesters at the Faculty, but then they tend to concentrate on improving their German in order to pass their exams successfully. This is because in the first phase of their studies there is only one obligatory course in English, which everybody has to pass in order to go on to the next phase of the bachelor’s programme. Additionally, one may argue that since the language of communication in the country and at the Faculty is German, international students increase their use of German, which may negatively influence their ability to use and learn in English. Interestingly, the findings of the research, presented later in this thesis, show that there is no difference in the extent of understanding lectures in English between international students (with a mother tongue other than German) and those with German as their mother tongue.

4. Academic listening comprehension

The aim of the empirical research conducted at the Faculty of Business, Economics and Statistics, of the University of Vienna, was to investigate whether the students experience difficulties when they are listening to the lectures given English compared to those given in their first language (L1), and if so, to what extent. This was done by examining seven different aspects of lecture/academic listening comprehension in English and in L1. Self-assessment was used as a method for measuring lecture comprehension, which will be discussed in more detail later in this chapter.

The seven aspects measured were familiarity with vocabulary, clarity of pronunciation/word segmentation, speaking speed, ability to follow lecturer's line of thought, the speed of the presentation of information, difficulty in taking notes, and content understanding (Hellekjaer 2010). The same aspects of lecture comprehension were investigated by Hellekjaer (2010) and the empirical research included in this thesis is a replication of his research. I will explain this in detail in Chapter 5 and now I will discuss these aspects of lecture comprehension in more detail.

For the first aspect of academic listening comprehension, which involves understanding of vocabulary, listeners require lexical knowledge. Lexical knowledge can be explained as listeners' knowledge of words and their ability to recognize and understand these words in a listening text (Flowerdew 1994: 10). In order to understand a listening text, listeners do not solely need the knowledge of vocabulary/lexical knowledge, but also phonological knowledge. Phonological knowledge involves the listeners' ability to recognize phonological features of a listening text, such as, to distinguish unit boundaries phonologically, to recognize the stress and intonation patterns, and so on. (ibid.). This aspect of academic listening was investigated by asking the

students to assess whether the lecturers pronounce words and expressions clearly.

Lexical and phonological knowledge are important for the so-called bottom-up processing (Bilbow 1989: 91) of a listening text, when the listeners need to recognize and decode the listening text. After that, the listeners engage into top-down processing, which involves “interpretation of meanings, concepts and reasoning” (ibid.: 90). Successful top-down processing should therefore enable the listeners to understand the content and to follow the lecturer’s line of thought. Therefore, in the present research the students were asked to assess how difficult it is for them to understand the content and to follow the lecturer’s line of thought.

The two aspects of listening comprehension concerning the lecturers’ speaking speed and the speed of the presentation of information are related to an additional skill the students require when they listen to the lecturers, which Flowerdew (1994: 10) defines as real-time processing of a listening text. In general, a listening text has an ephemeral nature, which means a listener has less control over a text than a reader who can revise the text, skip its parts, backtrack, and so on (ibid.). This may imply that the listeners have even less control over a listening text when the information is presented too fast or when the speaker speaks too fast. Because of the lack of control over the listening text, the listeners may experience comprehension difficulties.

Flowerdew (1994: 14) claims that a listener needs to employ an additional skill of note-taking, which takes place simultaneously with the listening comprehension process. For that reason, this aspect of lecture comprehension was investigated as well, by asking respondents to assess how difficult it is for them to take notes during lectures. Even though the process of note-taking has changed after the introduction of, for example, PowerPoint slides, I will not

discuss this here but in Chapter 5, because the visual dimension of lectures was measured separately from the seven aspects of lecture comprehension. Furthermore, it was observed that some lecturers at the Faculty did not use visual aids during lectures. One of the lecturers of the Faculty explained to me that they intentionally did not use visual aids to illustrate graphs or to show the way to calculate something, because this could be even more confusing for the students. They therefore preferred using the blackboard to calculate or draw step by step, which could enhance students' understanding.

Before continuing to the discussion of strategies listeners may employ in case they need to overcome comprehension difficulties, it is important to note that the seven aspects of lecture comprehension explained above cannot be applied to every genre of instruction in the university setting.

Namely, there are different genres of instruction in the university settings. Genre of instruction can be understood as “a class of communicative events, the members of which share some set of communicative purposes”, examples of which “exhibit various patterns of similarity in terms of structure, style, content and intended audience” (Swales 1990: 58). There are university lectures, which have traditionally and stereotypically been characterized as “highly monologic”, meaning that in such lectures “one speaker monopolizes the floor with occasional questions or comments from other speakers” (Simpson et al. 2002: 7). During monologic lectures, academic listening predominantly involves listening and taking notes. For many years, most university lectures were ‘monologic’. However, after looking more into listeners’ needs, the focus was shifted towards enabling students to participate in lectures and advocating more interactive lectures.

Today, there are still lectures that conform to the ‘monologic’ stereotype, but there are also those that diverge from the stereotype and are more interactive.

Depending on the genre of instruction and on the participation of listeners in the communicative event, Lynch (2011: 79) defines lectures as one-way and two-way listening events. Therefore, 'monologic' lectures can be classified as one-way listening events, whereas lectures that involve team projects, seminars, tutorials, and so on, can be classified as two-way (reciprocal) listening events. While 'monologic' lectures usually involve students listening to the lecturers and taking notes, interactive lectures require the use of a variety of reciprocal listening skills in the communicative events. In these communicative events, a variety of participants may be included. Thus, the communicative event may involve two students working on a project or a presentation together; it can also be a meeting of a student and supervisor, and so on.

As we could see from the courses at the Faculty of Business, Economics and Statistics, there is an increased number of interactive lectures which can be defined as two-way listening events, especially those that are held in English. However, the empirical research study that is a part of this thesis investigates primarily academic listening as a one-way listening event. The participants in this research were asked to assess their academic listening proficiency, according to the degree to which they understood what has been communicated to them by the lecturer and according to their ability to take notes. Since the students were asked to assess their lecture comprehension according to their general experience, it should be kept in mind that they might have had experience with both 'monologic' lectures (one-way listening) and with interactive lectures (two-way listening).

4.1. Strategies for dealing with comprehension difficulties

According to Hellekjaer (2010: 13) “listening proficiency [...] will [...] depend on language proficiency on the one hand, and strategy use on the other”. He claims that strategies which students use during a listening event may be correlated with their language proficiency. Thus, he explains that less proficient listeners tend to focus on “word level clues to build understanding” (ibid.). They may also employ translation of what they hear in their first language. More proficient listeners tend to use “compensatory strategies to infer [meaning of] what is not immediately understood” and they also tend to use “cognitive and meta-cognitive strategies such as comprehension monitoring and elaboration to repair or enhance comprehension” (ibid.)

Buck (2001: 105) explains that comprehension depends on the combination of language proficiency and strategic knowledge. However, the differences in performance most often correlate with linguistic competence and not with the strategies applied. Therefore, he argues, it “makes more sense to put the emphasis on testing language competence rather than strategic competence” (Buck 2001: 105). He also suggests a default listening construct, adaptable to different listening contexts, and defines listening as the ability to:

- 1) process extended samples of realistic spoken language, automatically, and in real time, 2) understand the linguistic information that is unequivocally included in the text; and, 3) make whatever inferences are unambiguously implicated by the content of the passage (Buck 2001: 114).

Hellekjaer (2010: 13) states that he used this construct definition as a starting point for developing a questionnaire for the research he conducted for assessing lecture comprehension in English compared to L1 because his research study is set in the context of academic lectures and it focuses on the respondents’ actual

experience with their real-time lectures in English and their first language. Furthermore, his research study uses a questionnaire with a combination of items that tap into linguistic processing on the one hand, and content understanding on the other. These items are self-assessment items, which were designed by Hellekjaer to measure lecture comprehension and which included different aspects of listening during lectures.

There are a number of research studies which have investigated lecture comprehension at the tertiary level. Some of these studies suggest that students experience problems with regard to lecture comprehension. There are also some that indicate that students have difficulties understanding the lectures because of their language problems. Some studies show that teachers also experience difficulties in teaching because of language problems. In order to illustrate this, I present an overview of recent research studies, which aim was to assess lecture comprehension at tertiary level.

4.2. Overview of research studies on assessment of lecture comprehension

In order to examine the students' understanding of EM lectures, Airey & Linder (2006) conducted a qualitative research study with Swedish university-level physics students. The aim of this research was to investigate students' lecture comprehension and learning in English compared to Swedish. The findings indicate that some students experience difficulties regarding various aspects of lecture comprehension, as, for instance, when taking notes or asking questions during lectures. Because of this they developed additional strategies, as Airey (2009: 79) states. One strategy was "that a number of students, though silent in the lecture, came forward at the end of each session to ask questions". Other strategies involved preparatory and follow-up reading, as well as discussions in

order to increase their comprehension. According to Hellekjaer (2010: 234), this kind of change in students' study habits or strategies, along with possible improvement of their English language proficiency, can explain previous research findings that suggest that students manage to adapt to EM instruction over time. At the same time, he claims, it "remains clear [...] that many students have initial problems with EM instruction that they may, or may not, overcome" (Hellekjaer 2010: 234).

What is particularly interesting about this study is that "the students initially report[ed] no difference in their experience of learning of physics when taught in Swedish or English" (Airey & Linder 2006: 555). However, the videos of the students that were taken during lectures and "the students' own accounts of their learning experience during simulated recall indicate a number of problems related to learning in English rather than Swedish" (ibid.)

Another investigation of students' understanding of EM lectures in higher education includes a quantitative study conducted and reported by Hellekjaer (2010), which took place in 2008 in Norway and Germany. In this research, Hellekjaer examines student lecture comprehension by using a self-assessment method for comparing their comprehension in English and in their first language (L1). While the sample comprises 354 respondents from higher-education institutions in Norway and 47 in Germany, the results do not show any substantial difference between lecture comprehension scores in English and L1, but still indicate that there are a number of students with some difficulties understanding EM lectures (Hellekjaer & Räsänen 2010: 7). The finding that the students experience similar difficulties in English and in their L1, led the author to argue for the "need to improve the quality of lecturing in English and L1 as well as the lecturers' and students' English proficiency" (Hellekjaer & Räsänen 2010: 7).

Furthermore, Hellekjaer (2010: 12) and Wilkinson (2005) argue that the lecturers' insufficient language proficiency has a negative impact on the effectiveness and quality of EM instruction as a whole. Hellekjaer (2010: 12) further gives an overview of studies that suggest the problematic nature of EM content teaching with regard to linguistic deficiencies. He explains that a study conducted by himself and Wæsteergaard (2003) found that a rapid increase in EM lectures leads to problems with the quality of lectures and ultimately to student complaints. In addition there is an insufficient number of lecturers with adequate linguistic proficiency. Furthermore, he refers to another smaller study he conducted in 2007, as well as to two Dutch Ph.D. theses: Klaassen (2001) and Vinke (1995), which deal with specific difficulties lecturers experience when teaching in English.

All these studies found that lecturers experienced constraints during EM content teaching, especially since "they found they lacked the ability to vary their language or explain in different ways or from different perspectives" (Hellekjaer 2010: 12) and that "[m]any also experienced language difficulties in less formal situations such as group discussions and conversations" (ibid.). In a qualitative study on EM content teaching, Wilkinson (2005) reports that lecturers felt frustrated owing to their inability to speak spontaneously and express nuances.

Hellekjaer (2010: 12) further reports that Vinke's (1995) research study found that lecturers could cover and deliver less subject material in English than in the L1, regardless of their language proficiency. On the other side, all three aforementioned studies suggest that lecturers' and students' language proficiency is less important for comprehension than is the quality of the lecture as such:

being able to speak English fluently, does not by itself make a good lecturer, nor does advanced proficiency guarantee that students understand a poorly delivered lecture. [...] our research indicates that changing the language of instruction only exacerbates difficulties that are already present i.e. that a bad lecture in L1 becomes even worse in English (Hallekjaer & Räsänen 2010: 8).

4.3. Self-assessment as a method for assessing lecture comprehension

The present research study uses self-assessment as a means of investigating on university students' understanding of lectures in English, especially in comparison to their understanding of lectures in their first language (L1). Blue (1994: 18) explains that despite some widely recognized observations suggesting that learners may lack objectivity and expertise, it is important to encourage self-assessment, especially as it may be a useful tool for acquiring information about students' language capabilities and about their language constraints. He further argues that in cases where it can be seen that non-native students have problems with self-assessment, these difficulties may be caused by a number of factors involved in the procedure of self-assessment. According to Blue (1994: 30), one such factor is their nationality, as certain nationalities tend to overestimate their level of foreign language proficiency, whereas others tend to underestimate it. Moreover, he holds that another factor that may influence self-assessment is related to "who learners compare themselves with" (ibid.), for example with native speakers, other students, and so on. Chen (2008: 9) explains that students' assessment behavior may be governed by their psychological characteristics and personal traits.

In terms of the reliability and validity of self-assessment among non-native students, various research studies yielded rather contradictory findings. On the one hand, for example, there are research studies that have confirmed that there is agreement between students' self-given ratings and ratings given by their teachers (Airey & Linder 2006; AllFallay 2004). Moreover, there are studies that report that there is agreement in the test scores students expected to be awarded and the scores they were actually awarded (Bachman & Palmaer 1989; LeBlanc & Painchaud 1985). On the other hand, there are studies that found a difference between students' self-assessment of their language proficiency and the assessment they received from others (cf. Blue 1988, 1994; Patri 2002). The findings of the different studies indicate that there is no clear answer concerning the question whether students can assess their language proficiency accurately or not.

However, Hellekjaer (2010: 16) claims that "self-assessment [...] gives reasonably valid information in low stakes situations", as is the case in the present study (Bachman 1990; Oscarson 1997). He further explains that self-assessment can be used instead of a listening comprehension test, because there are studies (Ross 1998; Marian et al. 2007) that found "self-assessment to be reliable predictor of listening proficiency" (ibid.).

Finally, both Hellekjaer's study and the present study use a specific form of measurement for language proficiency. This form of measurement involves a set of items focusing on specific tasks, which are then tapped into a construct of different aspects of lecture comprehension. With regard to these specific aspects of lecture comprehension, Bachman (1990: 148) says:

[s]elf-relating questions that ask test takers to judge how difficult various aspects of language use are for them appear to be better indicators of specific language abilities than are questions that ask how well they can use various aspects of language.

It was thus assumed by Hellekjaer (2010: 16), and the same assumption can be applied to the present study, that by using self-assessment items and indices for measuring respondents' proficiency or difficulties with English and L1 lectures, it would be possible to expect valid and useful results concerning student lecture comprehension at higher-education institutions. He adds, however, that in order to come to a firmer conclusion about lecture comprehension a validation study should be conducted where scores obtained through self-assessment items would be correlated against a listening test.

5. Methods and Materials

This chapter of the thesis includes a report on the methodology and materials used in the empirical research conducted at the Faculty of Business, Economics and Statistics, of the University of Vienna. As explained before, aim of the empirical research conducted at the Faculty was to investigate whether the students experience difficulties with understanding of lectures given in English compared to those given in their first language (L1), and if so, to what extent. In the following sections of this chapter a description of the questionnaire used and the research design will be provided, followed by the description of the procedure and the participants. This is followed by a statistical analysis of the data obtained in the empirical research. Afterwards, there is a summary of the findings and a discussion of their applicability. Finally, conclusions and recommendations for further research are provided.

5.1. The questionnaire and the research design

The present quantitative study uses a slightly modified version of a questionnaire designed by Glenn Ole Hellekjaer from the University of Oslo. Hellekjaer used the initial questionnaire in his research that was conducted at three Norwegian and two German institutions of higher education in the spring and fall semesters of 2008. The questionnaire comprises self-assessment items to compare participants' comprehension in English and in their first language (L1). With regard to the research design, the study uses a one-group, post-test, quasi-experimental research design for conducting a one-time survey which, in contrast to experimental designs, lacks random assignment of participants, comparison between groups, and so on (Skadish et al 2002: 106-107).

For the purpose of this research, the specific questions were slightly modified, some were omitted, and some were added; however, all questions, including self-assessment items that measure lecture comprehension, were replicated from Hellekjaer's questionnaire (see Appendix for a complete list of questionnaire items from both this research study and the one conducted in Norway). In such a way, there was a possibility to compare some of the results obtained from the research conducted in the respective countries. The possibility of comparing the results of the present research with the results obtained in two other countries was one of the reasons why I decided to use Hellekjaer's questionnaire. Furthermore, this particular questionnaire was used in order to gain insights into students' perceptions about EMI, into the difficulties they experience understanding lectures in English as well as into whether they employ some strategies to overcome these difficulties (such as reading in advance or asking clarification questions). These insights are valuable since, as Chang (2010: 59) explains, there are few available studies, and very few large-scale surveys, with a focus on students' perceptions, problems, and strategies in EM courses.

Because of the high percentage of international students at the Faculty of Business, Economics and Statistics, the questionnaire was in English. It comprised 57 multiple choice and 6 open-ended items. It was initially designed to take approximately 10 minutes to fill in (Hellekjaer 2010: 237). After conducting his research study in both Norway and Germany, Hellekjaer stated that the questionnaire was designed to take about 15 minutes to complete. In the course of conducting the present research study, it could be observed that respondents needed between 15 and 20 minutes to complete the questionnaire. The questionnaires were distributed at the beginning of the lectures, and the students were informed about the purpose and procedure of the research project. Upon receiving their consent, they were asked to fill in their answers.

The questionnaire is divided into six sections. The first section includes questions about the students' field of study, subjects they had in the spring semester 2011, and about the university/college they were studying at.

In the second section, there are questions about students' background, regarding the form of English instruction they received in English in high school and at the university. There are also questions about students' exposure to English via reading, writing and communicating in English. Finally, this section includes questions about students' age, gender, mother tongue, about where they attended high school, and about whether they use English in social and job-related situations.

The third section comprises questions about students' motivation for learning English, especially regarding their opinion about the utility of English for their future career. It also includes questions about their prior experience with EM courses and the reasons for attending them.

The fourth and the fifth sections of the questionnaire include self-assessment items for measuring lecture comprehension. These items were designed to measure lecture comprehension of lectures held in German/mother tongue and in English, by using different aspects of academic listening. The aspects of academic listening used are: vocabulary, clarity of pronunciation/word segmentation, lecturer's speaking speed, ability to follow a lecturer's line of thought, the speed of presentation of information, difficulty in taking notes, and understanding of content (Hellekjaer 2010: 238). The seven items comprising the aforementioned aspects of academic listening are identical for questions regarding both instruction in L1 and in English. In such a way, it was possible to use the L1 scores as a benchmark to determine whether, and to measure to which degree, the use of English instead of L1 affects comprehension (ibid.). A four-level Likert item is used to measure the level of difficulty regarding

academic listening/lecture comprehension, with 1 indicating a high level of difficulty and 4 indicating no difficulty.

The wording of the seven items selected for measuring lecture comprehension in German/mother tongue is almost identical to the wording items for English-medium instruction. The selected items⁶ are the following:

- 50. Indicate on the scale **to what extent you find words and expressions** in the English **language** lectures **unfamiliar**.
- 51. Indicate on the scale **to what extent words and expressions are clearly pronounced and understandable in the English language lectures**.
- 52. Indicate on the scale to what extent do you experience **that the lecturer in English language lectures speaks too fast**.
- 54. Indicate on the scale to what extent you can **follow the lecturer's line of thought during English** lectures.
- 55. Indicate on the scale **to what extent you understand the** content of the English lectures.
- 56. Indicate on the scale to what extent **the information in the English lectures is presented so quickly** that it hinders your understanding.
- 59. Indicate on the scale **how difficult you find taking notes** during English lectures.

The fourth and the fifth sections further include items that were designed to obtain information about whether students asked questions for clarification during and after lectures and whether they read in preparation for the lectures.

Finally, the sixth section comprises some additional open-ended questions about students' general perceptions about the lectures in English, which they were asked to answer in case they had time to do so.

As can be seen from the questions included in the questionnaire, the prior aim was to assess respondents' lecture comprehension of EM courses and gain insights about the respondents' experiences with and reactions to EMI as a whole.

⁶The wording and the formatting (the bold print) of these seven items in the questionnaire are completely replicated from the questionnaire in Hellekjaer (2010).

In order to carry out the statistical analysis of the data obtained from the survey, SPSS was used for calculating firstly Cronbach's alpha coefficients and factorial analysis, and afterwards for deriving correlations, calculating means, standard deviations, and percentages.

5.2. Procedure

The survey took place in the spring semester 2011 at the Faculty of Business, Economics and Statistics in Vienna, Austria. The official website of the Vienna University as well as personal experience resulting from undertaking a degree programme in Business and Administration at the aforementioned Faculty were used to identify undergraduate level lectures held in English.

Paper questionnaires were handed out to the students, as it was suggested by Hellekjaer (2010: 13) that, in such a way, a reasonably high rate of reply would be ensured. This is because most studies have shown that paper questionnaires elicit a higher response rate among university students than do online surveys (Matz 1999; Tomsic et al. 2000; Underwood et al. 2000).

The questionnaires were handed out during lectures and to study groups. In the case where questionnaires were distributed during lectures, the lecturers were previously contacted to ask for permission to survey their students. All the lecturers were contacted in person during their office hours.

All the lecturers contacted agreed that the distribution of questionnaires should take place at the beginning of the lecture, that is in the first 15 minutes of the lecture. Before the questionnaires were handed out, the students present were informed that the questionnaires to be distributed are part of a research project for a diploma thesis to be written for the Department of English and American

Studies at the University of Vienna. It was further explained that the aim of the project is to learn more about students' lecture comprehension in non-language courses that are taught in English at higher-education institutions.

The students were then asked to answer the questions to the best of their ability and as correctly as possible. They were further asked to answer the questions on the basis of their general experience with the courses they had in English and in German/their mother tongue respectively. Also, they were informed that participation in the survey was voluntary and anonymous, that they could decide freely if they wanted to fill out the questionnaire, that they could stop answering questions at any time or leave out questions for which they did not want to provide an answer. Finally, the students were thanked for their participation and told that if they had additional questions regarding the purpose, the procedure, and the results of the research project, they could contact the researcher via email (the email address was written on the blackboard).

Almost all the respondents at lectures filled out the questionnaire. In some cases, however, approximately 10% of registered students were not present. Hellekjaer (2010: 237) states that during his survey, in most cases, less than half of the registered students were present during the lectures where the questionnaires were distributed. The probable reason for the high percentage of the students present at the time when this particular survey took place is that this was the period of midterm exams and the students were hoping to get as much valuable information as possible about the coming exams. Moreover, most of the lectures at the Faculty of Business, Economics and Statistics are based on continuous assessment, which means that attendance is compulsory, and if students do not attend lecture more than 1 – 3 times, they are negatively assessed and have to repeat the lecture in the following semester.

5.3. Participants

The questionnaires were distributed to 220 students, 200 of them filled in the questionnaires completely, 5 respondents with English as their first language were excluded from the statistical analysis, and the total sample is, therefore, 195. Out of these 195 respondents, 96 (49.2%) are female and 99 (50.8%) are male. All the respondents are undergraduate level students.

The sample comprising 220 students cannot be considered representative of all students at higher-education institutions in Austria who have had experience with EMI, because we do not know for certain how many out of 350.457 students at higher-education institutions in Austria (Statistik Austria 2011) already have had experience with EMI. Furthermore, the survey was conducted at only one Faculty of the Vienna University and the sample was not drawn at random. On the contrary, it was decided in advance which participants or groups of participants, would be contacted, as well as when and where they would be contacted. Such a sampling method gives a purposive sample of typical instances or cases and not a random sample, which is considered to have limited external validity (Ary et al. 1996; Shadish et al. 2002). Limited external validity means that the ability to generalize is limited. This further means that the conclusions of the present study hold only to a certain degree for other students who have had experience with EMI at the Austrian higher-education institutions.

Almost all participants (192) in the survey were enrolled at the University of Vienna, whereas only a few (3) were enrolled the Vienna University of Economics and Business. With regard to the field of study, the majority of the respondents (109) said they were studying Business and Administration, 66 of them were studying International Business and Administration, and 5 of them were studying Economics, while the rest (15) was undertaking another degree

programmes. The age of respondents is between 19 and 43 years of age (mean: 23.6; SD: 3.5) and they were in their 1st to 12th (mean: 4.9; SD: 2.5) semester of their degree programme.

Interestingly, only 94 respondents said that their first language (L1) was German, whereas other 94 respondents said that a language other than German was their first language. Moreover, 4 respondents stated that there were two languages they considered as their L1 and 3 respondents stated they considered more than one language other than German as their L1. The following table summarizes the respondents' answers to the question: "What is your first language?" (item 6).

Table 2: L1 of the respondents and the number of respondents of the particular L1

Slovenian	1	Korean	1	Bulgarian	3	Polish	3
Croatian	1	Ukrainian	2	Romanian	4	Luxembourgish, French, German	1
Arabic	10	Chinese	1	Spanish	2	Ukrainian and Russian	1
Romanian	1	Serbian	3	Hungarian	5	German and Croatian	2
Russian	1	Danish	11	French	2	German and Bosnian	1
Turkish	5	Georgian	2	Albanian	2	German and Serbian	1
Bosnian	12	Slovak	1	Portuguese	1	German	94
Azeri	9	Czech	7	Serbo-Croatian	3		

As can be seen from the table, there are over 20 L1s other than German. However, not only are these L1s different from German, they belong to different language families and subfamilies. Hence, for example, there are Turkic

languages like Azeri and Turkish, Slavic languages like Bosnian, Croatian, Serbian, Russian, Slovak and so on, Romance languages like Spanish, Portuguese, Romanian, French, and so on. Furthermore, 89 (46%) respondents said that they attended school in Austria, while 106 (54%) stated that they attended school in another country, such as Germany and many others.

5.4. Statistical analysis

As explained before, the questionnaire included seven items that were identified for measuring lecture comprehension of both lectures held in German / mother tongue (L1) and for those held in English. These seven items use different aspects of academic listening comprehension. Hellekjaer (2010: 15) explains that the items were “designed to tap into the listening comprehension construct”. This means that they were designed to be considered as a group measuring one underlying construct, which is lecture comprehension.

In order to determine whether a number of items can be considered as a group measuring one underlying construct, it is necessary to determine how closely related these items are. This can be determined by calculating the Cronbach's alpha coefficient for the particular group of items. Cronbach's alpha is not a statistical test but a measure of internal reliability (or consistency). A sufficiently “high” value of alpha coefficient can be used as evidence that all items in the group measure the same latent construct (Sprinthall 2007: 314). The Cronbach's alpha coefficient of the seven items measuring lecture comprehension in English is 0.84 ($\alpha=0.841$), which is a quite “high” value, indicating that all the seven items measure one underlying construct. For L1, the value of alpha is slightly lower, 0.83 ($\alpha=0.828$), which again confirms that items can be tapped together and can therefore be considered as a single variable.

The following table includes corrected item-total correlations and the values of Chronbach's alpha if a particular item is deleted for L1 and for English. The corrected item correlations of all the items included in the lecture comprehension construct for L1 and English are positive and lie between 0.2 and 0.6. This means that they measure one underlying trait and can be merged into single additive indices. Also, all the values of the Chronbach's alpha when one particular item is deleted are lower than the initial estimate of reliability of 0.84 ($\alpha=0.841$) for English and 0.83 ($\alpha=0.828$) for L1. This means that including (not omitting) each one of these items increases internal reliability and that the items are closely related and can be considered as a group.

Table 3: Internal reliability and correlations for the lecture comprehension construct

English	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Item 1: familiarity with vocabulary	0.598	0.819
Item 2: clarity of pronunciation	0.467	0.838
Item 3: lecturer's speaking speed	0.596	0.819
Item 4: ability to follow the lecturer's line of thought	0.641	0.812
Item 5: content understanding	0.661	0.809
Item 6: the speed of the presentation of information	0.667	0.808
Item 7: difficulty in taking notes	0.543	0.827
L1	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Item 1: familiarity with vocabulary	0.611	0.799
Item 2: clarity of pronunciation	0.480	0.820
Item 3: lecturer's speaking speed	0.585	0.803
Item 4: ability to follow the lecturer's line of thought	0.638	0.795
Item 5: content understanding	0.619	0.798
Item 6: the speed of the presentation of information	0.597	0.802
Item 7: difficulty in taking notes	0.497	0.817

In the original research conducted at Norwegian and German higher-education institutions, Hellekjaer (2010: 15) states that, for the Norwegian sample, the Cronbach's alpha coefficient is 0.84 ($\alpha=0.84$) for English and 0.76 ($\alpha=0.76$) for L1. For the German sample, the Cronbach's alpha coefficient is 0.84 ($\alpha=0.84$) for English and 0.89 ($\alpha=0.89$) for L1. All the values of α from the three surveys suggest high loading on the same underlying variable, which means that there is a high internal consistency and subsequently reliability.

Since high values of Cronbach's alpha do not imply that the measurement is unidimensional i.e. that the items are linearly correlated, factorial analysis, in particular, principal axis factoring was used to determine the shared variance through a set of seven items for measuring lecture comprehension. As a part of factorial analysis, the Kaiser-Meyer-Olkin Measure of Sampling Adequacy was derived. This is a statistic that is used to make sure that factorial analysis is useful for the data of the present research study and which indicates the proportion of variance that can be caused by the underlying factors – the seven items for measuring lecture comprehension. The value of this statistic is 0.87 for both English and L1. This indicates that factorial analysis is useful for statistical analysis. Principal axis factoring shows that the percent of total variance accounted for each factor is 44% for English and 42% for L1. This further implies that the seven items for English/L1, which loaded on the same underlying trait, can explain 44%/42% of the total variance of the lecture comprehension construct. In comparison, in the Norwegian sample the percent of total variance accounted for each factor is 52% for English and 43% for L1, whereas in the German sample, the percent of total variance accounted for each factor is 52% for English and 61% for L1.

Given that both the Cronbach's alpha coefficient and factorial analysis confirmed that the seven selected items measure different aspects of the lecture

comprehension construct, as Hellekjaer (2010: 16) also argues, it is possible to “merge them, without weighting, into additive indices” and use them as a group to measure lecture comprehension. Hellevik (1999: 303-310) further argues that additive indices contribute to reducing potential measurement errors, which also improves validity as well as reliability. By designing two indices for English and L1, it would be possible to use the group of seven items as a single indicator of one underlying construct, which will simplify the statistical analysis.

The two indices for L1 and English are the two dependent variables for listening comprehension in English and L1. The designed indices are named *L1Index* for L1 and *EngIndex* for English. These labels are created by Hellekjaer (2010), and the same are used in this research study in order to make the comparison between the results of the respective studies easier.

5.5. Results and analysis

The level of difficulty regarding lecture comprehension is measured by using a four-level Likert item, with 1 indicating a high level of difficulty and 4 no difficulty. The mean score of *L1Index* and *EngIndex* were calculated and compared. The analysis of mean scores found a small difference between *L1Index* and *EngIndex*. For *L1Index*, the mean score was 3.2 (SD=0.5) and for *EngIndex*, the mean score was slightly smaller, 3.0 (SD=0.5). Hellekjaer (2010: 16) reports that for the Norwegian sample, the mean score for *L1Index* was 3.4 (SD=0.6) and for *EngIndex* 3.1 (SD=0.5), whereas for the German sample the mean scores were 3.0 (SD=0.7) for *L1Index* and 2.8 (SD=0.6) for *EngIndex* (see Table 4).

Table 4: Mean scores and standard deviations for L1Index and EnglIndex

Country	L1	English
Norway	3.4 (SD=0.6)	3.1 (SD=0.5)
Austria	3.2 (SD=0.5)	3.0 (SD=0.5)
Germany	3.0 (SD=0.7)	2.8 (SD=0.7)

The table above shows that the Norwegian respondents do not have great difficulties with both EM as well as with L1 instruction, since their scores are the closest to the value of “4”, which stands for “no difficulty”. The slightly lower scores for both L1 and English of the Austrian sample indicate slightly higher levels of difficulty with both EM as well as with L1 instruction, in comparison to the Norwegian sample. These scores also suggest that the respondents of the higher-education in Austria experience less difficulty in lecture comprehension than the respondents from the higher-education institutions in Germany.

The scores of the German sample indicate that the respondents experience more difficulties in lecture comprehension in L1 as well as in English, as compared to both the Norwegian and Austrian samples. As Hellekjaer (2010: 16) observes, it is interesting to note here that despite being master level students, the lecture comprehension scores of the German respondents indicate higher levels of difficulty, compared to the majority of undergraduate level students of the Norwegian sample, and all undergraduate students of the Austrian sample.

The mean scores and standard deviations from the table above should be, however, considered with caution because of the difference in the number of respondents of the three respective samples. In general, one should be very careful when comparing means across samples without being able to test

whether the difference between scores is statistically significant. Here it is not possible to test the difference and the discrepancy between scores of all the three samples, since I do not have Hellekjaer's data. The above given comparison of the descriptive statistics across samples therefore has its limitations. At the same time, it may serve to provide an insight into the respondents' lecture comprehension scores from the respective samples.

As stated before, the present research study is to a great extent a replication of Hellekjaer's research. Therefore, Hellekjaer's results will be used as a benchmark for the results obtained through the present study and comparison between the results of the three research studies will also be made. However, each time I provide a comparison between the results, I will also make a brief comment on the limitations of the particular comparison.

With regard to the Austrian sample, it was possible to determine whether the mean scores for L1Index and EngIndex are significantly different from each other and whether the discrepancy between the scores is statistically significant. The latter was calculated by computing an additional variable labeled "Discrepancy_L1Index_EngIndex" and determining the lower and upper bounds of its confidence interval (see Table 5).

Table 5: Testing the significance for the discrepancy between the scores for L1Index and EngIndex

Discrepancy_L1Index_EngIndex		Statistic
95% Confidence Interval for Mean	Lower Bound	0.1339
	Upper Bound	0.2836

Since the confidence interval of this variable does not include the zero value (the lower as well as the upper bound are greater than 0), the discrepancy between L1Index and EngIndex is statistically significant.

In order to determine whether the mean scores of L1Index and EngIndex are significantly different from each other the lower and upper bounds of the confidence intervals of the respective indices were calculated (see Table 6).

Table 6: Testing whether the mean scores of L1Index and EngIndex are significantly different from each other

	95% Confidence Interval of L1Index and EngIndex	
	Lower bound	Upper bound
L1Index	3.1658	3.3075
EngIndex	2.9560	3.0996

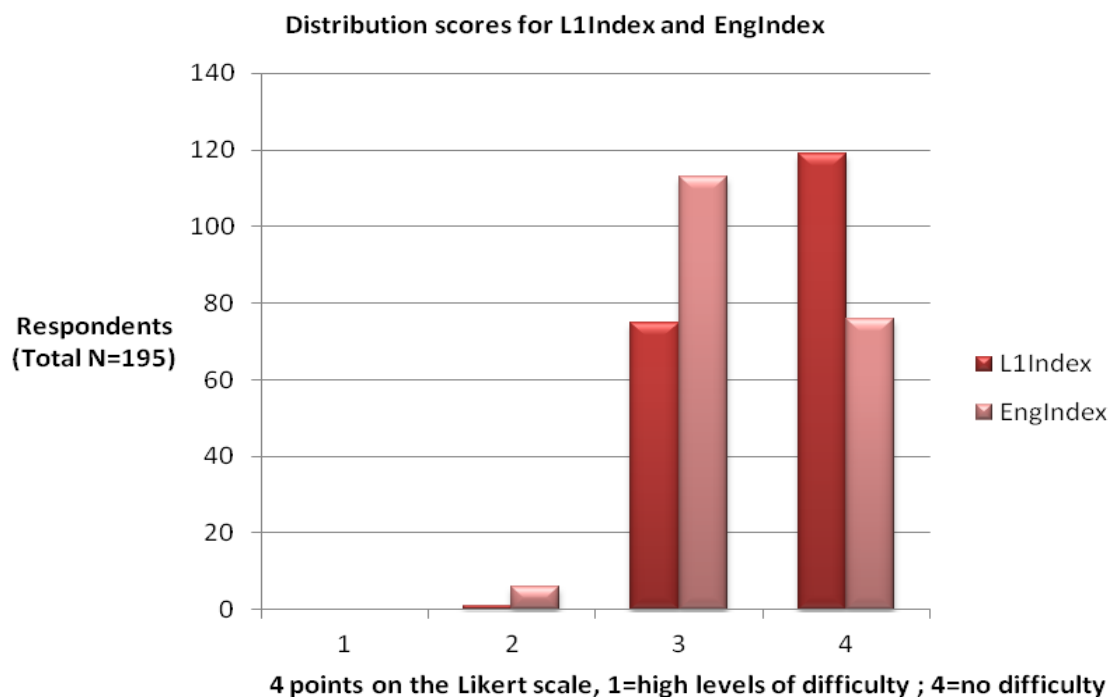
As can be seen in the table above, the confidence interval of L1Index lies between 3.1658 and 3.3075 and the confidence interval of EngIndex lies between 2.9560 and 3.0996. Since the confidence intervals of the respective indices do not overlap, meaning they do not share elements, the conclusion is that the mean scores for L1Index and EngIndex are significantly different from each other. In addition, a paired sample T-test was used to test the significance between the mean scores of the two variables. The results of the test confirmed the conclusion that the mean scores are significantly different from each other with $p < 0.05$.

In order to further determine the level of lecture comprehension difficulty of the students of the Faculty of Business, Economics and Statistics, the distribution of scores for L1Index and EngIndex are presented in the following table and figure.

Table 7: Lecture comprehension (LC) scores L1Index and EngIndex

LC scores	L1		English	
1	0	} 76 (39%)	0	} 119 (61%)
2	1		6	
3	75		113	
4	119	= 119 (61%)	76	= 76 (39%)

Figure 1: Distribution scores for lecture comprehension in L1 and English



The score distribution shows that for L1 the distribution is skewed in favor of high scores, even though 39% of the respondents have some difficulties in comprehension of lectures held in L1 (as indicated by a score of 3 or below). For

lectures in English, however, lecture comprehension scores indicate a higher level of difficulty, with 61% of respondents having a score of 3 or below. Hellekjaer (2010: 16) reports that in the Norwegian sample, the distribution of L1 is also skewed in favor of high scores, here however, only 24% of respondents scored 3 or below. The Norwegian scores for English indicate a higher level of difficulty than in L1, with 42% of respondents scoring 3 or below.

One can see here that both Norwegian and Austrian distribution scores indicate somewhat higher level of difficulty in lecture comprehension of EM courses than in those held in L1. However, the discrepancy between distribution scores for L1 and English is slightly greater for the Austrian than for the Norwegian sample. In comparison to both Austrian and Norwegian samples, in the German sample, there is a higher percent of respondents with the score of 3 or below, which indicates comprehension constraints in both L1 and English. There are 44% of respondents with a score of 3 or below for L1 and 72% with the score of 3 or below for English. There is also a greater discrepancy between the distribution scores of the German sample in comparison to the other two samples. Here, again it should be noted that the number of respondents the in Austrian, Norwegian, and German samples is different and that therefore the results above should be interpreted with caution.

By observing Figure 1 from the previous section and by looking at the mean scores, it can be assumed that scores for L1Index and EngIndex are not normally distributed, and that the distribution of scores is neither bell-shaped nor symmetrical. This assumption was confirmed by a nonparametric test, namely one-sample Kolmogorov-Smirnov Test. As it can be seen from the table below, the test confirmed that scores for L1Index and EngIndex are not normally distributed (with $p < 0.05$ for both indices)

Table 8: Testing normality of distribution for LIndex and EngIndex

	Kolmogorov-Smirnov ^a		
	Statistic	df	Sig. (p)
L1Index	0.102	195	0.000
EngIndex	0.132	195	0.000

a. Lilliefors Significance Correction

Even though the distribution of these two variables is not normal, it is possible to use parametric tests, for example for calculating correlations, since the sample is large enough.

In order to determine the relationship between the indices for L1 and English, Pearson's correlation coefficient (r) was derived. This is the measure of the strength of association between two variables (<http://hsc.uwe.ac.uk/dataanalysis/quantinfasspear.asp>, 14 January 2012).

As shown in one of the previous sections, the data obtained through the present research are not normally distributed. In cases where data are not normally distributed, one should use nonparametric tests for testing correlation instead of using a parametric test such as calculating Pearson's correlation coefficient (r). However, if sample size is large enough (if e.g. $N > 50$), parametric tests can also be used even if the distribution of the variables is not normal (StatSoft 2012). In this case, since the sample is large enough ($N=195$), a parametric test can be used for testing correlations. Since there are different opinions on when a sample is large enough for using parametric instead of nonparametric tests for testing data that are not normally distributed, I used both parametric and nonparametric tests for testing my data, and the test gave the same results at same significance levels. I chose to present the results from the parametric tests

since they were used by Hallekjaer and thus it was easier to compare my results with his.

It was concluded that due to the positive value of 0.45 for Pearson's r , there is a positive relationship between the scores for L1Index and scores for EngIndex. The correlation is significant at 0.01 level ($p < 0.01$). The positive relationship between these two variables indicates that the scores for variables increase or decrease together, which means that the higher the scores for L1Index are, the higher the scores for EngIndex will be. In other words, the fewer difficulties students have with understanding L1 lectures, the fewer difficulties they have with understanding English lectures. It is interesting to observe such positive relationship between L1Index and EngIndex especially because the sample for this research study involves respondents with many different L1s.

5.6. The lecture comprehension construct

In order to examine which aspects of the lecture comprehension the respondents experience most difficulties with, the mean scores and standard deviations of each item included in the lecture comprehension construct are separately considered and presented in the following table. Afterwards, the results of the Austrian sample are compared to the results obtained by Hallekjaer (2010) for the Norwegian and German samples.

Table 9: Comparison of the mean scores and standard deviations for the items tapping into the lecture comprehension construct for L1 and English

Items and item numbers in the questionnaire	Total sample: 195				Are the mean scores significantly different?	Is the difference between the mean scores significant?
	L1		English			
	Mean	SD	Mean	SD		
To what extent do you find words and expressions unfamiliar? (Items 37, 50)	3.2	0.7	2.9	0.6	Yes	Yes
To what extent are words and expressions clearly pronounced and understandable? (Items 38, 51)	3.2	0.7	2.9	0.7	Yes	Yes
To what extent does the lecturer speak too fast? (Items 39, 52)	3.3	0.7	3.0	0.7	Yes	Yes
To what extent can you follow the lecturer's line of thought? (Items 41, 54)	3.3	0.7	3.1	0.7	Yes	Yes
To what extent do you understand the content of the lectures? (Items 42, 55)	3.4	0.7	3.1	0.7	Yes	Yes
To what extent is the information in the lectures presented so quickly that it hinders your understanding? (Items 43, 56)	3.2	0.8	3.1	0.7	No	No
How difficult do you find taking notes during lectures? (Items 46, 59)	3.2	0.7	3.1	0.7	No	No

The table above shows that scores for English are lower for all seven items of the sample. The largest discrepancy between the scores (0.3) for L1 and English is for the items measuring familiarity with words and expressions (items 37, 50), for the related items measuring clarity of pronunciation of words and expressions (items 38, 51) and for the items measuring difficulties due to lecturer's speaking speed (items 39, 52). In general, over the past years, many research studies have shown that university students' have most listening difficulties because lecturers speak too fast, due to their pronunciation, and because students find the vocabulary used by lecturers unfamiliar (Shen et al 2005: 466) which is also confirmed through the present study.

The largest discrepancy of 0.3 for L1 and English is also for the scores measuring to what extent students understand the content of the lectures (items 42, 45). One may argue that students might experience difficulties understanding the content of the lecture owing to the difficulties they experience with unfamiliar words and expressions, unclear pronunciation, as well as because lecturers speak too fast, as discussed above.

A small difference in scores (0.2) for L1 and English can be seen in the items measuring ability to follow the lecturer's line of thought (items 41, 54). Finally, almost no difference in scores (0.1) for L1 and English can be observed for items measuring if the speed of the information presented hinders comprehension (items 43, 55) and how difficult it is to make notes during lectures (items 46, 59).

As can be seen from the table above, it was further investigated whether the mean scores for above given pairs of items for L1 and English⁷ are significantly different from each other and whether the discrepancy between them is statistically significant. The discrepancy between the scores was tested for significance because Hellekjaer (2010) and myself use the discrepancy to argue the extent of comprehension constraints students experience in English compared to L1. For example, we argue that a greater discrepancy between the scores for L1 and English (given that the scores for L1 are greater than the scores for English) indicates a greater extent of comprehension difficulties. The calculation was done in the same way the mean scores for L1Index and EngIndex were tested for statistical significance in the previous section (by investigating whether their confidence intervals overlap, by running a paired

⁷ By using the term "pair of items", I refer to items measuring for example the same aspects of lecture comprehension, but one part of a pair of items is measuring the aspect in L1, whereas the other is measuring the aspect in English

samples T-test, and investigating whether the confidence interval of the discrepancy between the scores include the value of zero).

The mean scores for L1 and English of the four items with the discrepancy of 0.3 (the items measuring familiarity with words and expressions, items measuring clarity of pronunciation of words and expressions, the items measuring difficulties due to lecturer's speaking speed, and the items measuring difficulties understanding the content) are significantly different from each other. Furthermore, the discrepancy between the mean scores for L1 and English is also statistically significant.

The table above shows that the slightly smaller discrepancy of 0.2 between the items measuring ability to follow the lecturer's line of thought in L1 compared to English is significant and that the mean scores of the two items are also significantly different. However, the very small discrepancies of 0.1 between the mean scores of the pairs of items for L1 and English measuring if the speed of the information presented hinders comprehension and those measuring how difficult it is to make notes during lectures are not statistically significant, since their confidence intervals include the value of 0. Also, the mean scores of these pairs of items for L1 and English are not significantly different.

Therefore, it can be concluded that there is a significant discrepancy between the mean scores for the pairs of items measuring familiarity with words and expressions, the items measuring the clarity of pronunciation, the items measuring difficulties due to lecturer's speaking speed, the items measuring difficulties understanding the content, and the items measuring ability to follow the lecturer's line of thought. Due to the significant discrepancy between the scores and given that in this research L1 scores are used as a benchmark to measure how use of English affects students' lecture comprehension, it may be further concluded that the five aspects of listening comprehension – vocabulary,

clarity of pronunciation/word segmentation, speaking speed, ability to follow the lecturer's line of thought, and understanding of content – seem to be affected by the use of English as the medium of instruction. The two aspects of listening during lectures that were included in the lecture comprehension construct - the speed of presentation of information and difficulty in taking notes – seem not to be affected by the use of English instead of L1 as a medium of instruction.

To sum up, the results given above indicate that the respondents experience a certain degree of difficulties with regard to specific aspects of lecture comprehension. Also, the students tend to experience these particular aspects of listening comprehension to a greater degree when the lecture is in English compared to L1 (as it has been demonstrated by the significant discrepancy between the mean scores of the lecture comprehension indices). Owing to this, it is further necessary to investigate whether the students invest more time and work while attending lectures in English compared to L1.

The following table gives the respondents' answers to the question about the amount of time and work invested in EM lectures compared to lectures in their L1.

Table 10: Time and work invested while attending a lecture in English compared to the one in L1

How much time and work do you invest in an EM lecture compared to the L1?	Just like in L1 1	2	3	Much more time and work than in L1 4	N
	31 (16%)	72 (37%)	74 (38%)	18 (9%)	195 (100%)

As can be seen from the table above, 84% of the respondents invest more time and work while attending a course in English when compared to L1. Hellekjaer

(2010: 19) states that 63% of Norwegian and 72% of German respondents find courses in English more laborious than courses in their L1. Furthermore, in order to measure if there is an association between the aforementioned item and EngIndex, Pearson's correlation coefficient (r) was derived. With $r = -0.28$ ($p < 0.01$, $N=195$) it was concluded that the item measuring how laborious English courses are as compared to L1 correlates negatively with EngIndex, which means that when the scores of EngIndex increase, the scores for this item decrease. In other words, the lower the respondents' EngIndex scores are, the more time and work they invest when attending an EM course as compared to L1.

In Norway with $r = -0.4$ ($p < 0.01$, $N=352$) and in Germany with $r = -0.47$ ($p < 0.01$, $N=46$), Hellekjaer (2010: 19) observes that there is a strong negative correlation between this item and EngIndex, which again indicates that the lower the EngIndex scores, the more laborious respondents find the instruction in English.

To sum up, the conclusions that can be drawn from the results discussed above are: (1) the respondents tend to invest more time in EM lecture compared to lectures in L1, and (2) the amount of time and work they invest is negatively correlated with the EngIndex. From the responses given in the table above, one cannot know why they find the EM lectures more laborious. Is it, for example, because they need to spend more time for reading or translating specific words or expressions? Also, do they invest more time due to difficulties with understanding the language, the content, or both?

Even though it is not possible to provide answers to these questions, it is important to keep them in mind when interpreting the previously discussed results. The issue of the amount of time and work invested in EM lectures compared to L1 will again be addressed later in this thesis with regard to the

issue of how often students read in preparation for the lectures in L1 and English.

In the table below, the mean scores of the Austrian, Norwegian and German samples are given in order to provide insights about the aspects of lecture comprehension that were found to be the most difficult by the respondents involved in Hellekjaer's research. Here again it is not possible to test the difference between scores of all the three samples, since I do not have Hellekjaer's data. Thus, the following table and the comparison between the scores need to be considered and interpreted with caution.

Table 11: Comparison of the mean scores and standard deviations for the items tapping into the lecture comprehension construct for L1 and English of the Austrian, Norwegian, and German sample

Items	Austrian sample N=195				Norwegian sample N=364				German sample N=47			
	L1		English		L1		English		L1		English	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
To what extent do you find words and expressions unfamiliar?	3.2	0.7	2.9	0.6	3.3	0.8	3.0	0.6	3.2	0.8	2.7	0.6
To what extent are words and expressions clearly pronounced and understandable?	3.2	0.7	2.9	0.7	3.4	0.7	2.9	0.7	3.1	0.8	2.8	0.6
To what extent does the lecturer speak too fast?	3.3	0.7	3.0	0.7	3.6	0.7	3.4	0.7	3.4	0.7	3.1	0.7
To what extent can you follow the lecturer's line of thought?	3.3	0.7	3.1	0.7	3.4	0.6	3.1	0.7	3.1	0.8	2.9	0.7
To what extent do you understand the content of the lectures?	3.4	0.7	3.1	0.7	3.5	0.6	3.3	0.6	3.2	0.6	2.9	0.6
To what extent is the information in the lectures presented so quickly that it hinders your understanding?	3.2	0.8	3.1	0.7	3.4	0.7	3.3	0.7	2.9	0.7	2.8	0.8
How difficult do you find taking notes during lectures?	3.2	0.7	3.1	0.7	3.4	0.8	3.1	0.8	3.0	0.7	2.7	0.7

It is interesting to observe that again, for all three samples, the scores for English are overall lower than for L1. Like the Austrian respondents, Hellekjaer (2010: 18) notes that, both Norwegian and German respondents' main difficulties are unfamiliar words and expressions, followed by difficulties with unclear pronunciation. These are further followed by problems with following the lecturer's line of thought and by difficulties in taking notes. Finally, both the higher scores and the smaller the discrepancy between them for the items measuring content understanding, the influence of speaking speed on understanding, and how fast information is presented, indicate that these are more problematic areas in the German sample than in the Norwegian sample (ibid.).

As already explained, the above given comparison of the descriptive statistics across samples has its limitations. However, it may serve to provide an insight into the lecture comprehension difficulties students experience. Furthermore, it is important to highlight that the above given findings of the present and Hellekjaer's research show that respondents from all three samples seem to, to a certain degree, experience difficulties with some aspects of lecture comprehension. Also, they experience these difficulties regardless of the language of instruction. This means that the students experience similar difficulties in English and in L1, only to a different extent (the extent is indicated by the discrepancy between the scores). This has an implication that it is necessary to assess the quality of university lectures in general and to include factors other than language of instruction that may lead to constraints in understanding of the lecture content.

5.7. Clarification questions

It was explained by Hellekjaer (2010: 18) that an additional indication of difficulties in lecture comprehension could be measured by asking about the respondents' need to ask clarification questions during lectures. The questionnaire includes two pairs of items measuring the respondents' need to ask clarification questions during lectures in L1 and in English. There is a pair of items about their need to ask questions about unfamiliar words and expressions. The other one is about the students' need to ask questions about the unclear content. For both pairs of items, a four-point Likert scale is used, with 1 standing for "need to ask questions all the time" and 4 standing for "never wanting to ask questions". In order to determine the relationship between the indices for L1 and English and the respondents' need to ask questions, Pearson's correlation coefficient (r) was derived.

Table 12: Clarification questions about unfamiliar words and expression and content

Items	Total sample N=195	
	<i>L1Index</i>	<i>EngIndex</i>
How often do you want to ask about unfamiliar words and expressions during lectures?	0.60**	0.53**
How often do you want to ask about unclear content during lectures?	0.55**	0.47**

** Correlation is significant at the 0.01 level (two-tailed)

The table above displays quite strong positive relationships (indicated by a quite high value of the Pearson's r) between the items measuring the need to ask questions about unfamiliar words and expressions and lecture comprehension indices. Also there is a strong relationship (indicated by, in comparison to the previous items, a slightly smaller but still quite high value of the Pearson's r) between the items measuring how often the respondents want to ask about

unclear content and both indices. The positive correlations between the scores for L1Index and EngIndex and the scores for asking clarification questions are significant at 0.01 level ($p < 0.01$)

The significant positive correlations indicate that the scores for L1Index and EngIndex and the scores for asking clarification questions increase or decrease together. As explained earlier, the lower scores of the items about asking questions for clarification indicate a greater need to ask questions during lectures, whereas higher scores indicate less or no need to ask clarification questions. On the one hand, this leads to a conclusion that, the higher the scores for L1Index and EngIndex (indicating less difficulties in lecture comprehension), the higher the scores for asking clarification questions (indicating less or no need to ask about unfamiliar words, expressions and about unclear content). On the other hand, this means that, the lower the scores for L1Index and EngIndex (indicating more difficulties in lecture comprehension), the lower the scores for asking clarification questions (indicating a greater need to ask about unfamiliar words, expressions and about unclear content).

These results point to students having a need to ask clarification questions during both L1 and EM lectures. Owing to this, I agree with Hellekjaer's (2010: 18) recommendation to make room for clarification questions in the lecture context as a whole, regardless of the language of instruction. Also, greater attention must be given to subject-specific vocabulary and terms in L1 and in EM lectures (Hellekjaer 2010: 18).

Since the results from the table above indicate that students need to ask clarification questions, it was further investigated how students assessed the possibility to ask questions during and after lectures in both L1 and English. The table below shows the mean scores and standard deviations calculated for the

pair of items measuring the possibility to ask questions during and after lectures in L1 and English respectively.

Table 13: Opportunity to ask questions during and after lectures

Item and item number in the questionnaire	Total sample N=195			
	<i>L1Index</i>		<i>EngIndex</i>	
	Mean	SD	Mean	SD
Indicate on the scale if you get the chance to ask questions during and after lectures (item 47, 60).	3.2	0.8	3.2	0.8

The two items indicating the possibility to ask questions after and during the lectures used a four-point Likert scale, 1 standing for “difficult to ask questions” and 4 standing for “easy to ask questions”. The mean scores from the table above indicate that there is no difference in the opportunity to ask questions in both L1 and English instruction. The mean scores of 3.2 indicate that it is overall quite easy to ask questions.

Lynch (2011: 84) explains that it is not only necessary to allow and make room for the students’ questions and their oral participation as such in the lecture, but also that it is necessary to encourage students to ask the lecturer for clarification in order to enhance the chances for effective listening. Morell (2004: 326) further claims that during a lecture, it is “the lecturer [who] can enhance participation and [thus] facilitate comprehension”. Therefore, as Lynch (2011: 84) further asserts, it is not enough to give students a chance to ask questions, but it is also crucial to train content lecturers to make it easier for students to ask questions. This can be done for example by developing specific rhetoric and communication skills, such as inserting question pauses during the lectures.

5.8. The visual dimension of the lectures

Nowadays, there is a widespread use of PowerPoint slides in the university setting (Lynch 2011; Chang 2010). At the Faculty of Business, Economics and Statistics there are many PowerPoint supported lectures. The PowerPoint slides are not only used during lectures, but are often uploaded on online learning platforms and can be used for students as a preparation material for the exams. Some lecturers even upload their PowerPoint slides at the beginning of the term, so that the students can print them out and take them to the lectures. This enables students to selectively take notes by adding notes directly to the printed-out slides.

Lynch (2011: 82) explains that students' learning process as a whole can benefit from the use of PowerPoint slides and that there is a number of research studies that suggest that the visual dimension of lectures is very important for students' understanding of the content. Therefore, visual aids need to be more exploited than, for instance, audio-based materials for both teaching and assessment (ibid.). He further argues that since visuals such as PowerPoint slides have become a major part of lecture discourse in the university setting, more research needs to be done on the impact of the visual dimension of the EM lectures on students' comprehension.

Hellekjaer's research in Norway and Germany as well as the present research deal with the visual dimension of EM lectures and with the relationship between the use of PowerPoint slides and lecture comprehension. The questionnaire includes a pair of items about the importance of visuals, such as PowerPoint slides, for the understanding of English and L1 lectures respectively. Hellekjaer (2010: 19) explains that the extent to which respondents depend on visual aids to support lecture comprehension can be seen as an indication of language

difficulties. The following table shows respondents' answers to the question about the importance of the lecturer's transparencies, PowerPoint slides or other visual aids for their understanding of lectures.

Table 14: Importance of lecturer's transparencies/PowerPoint slides or other visual aids for respondents' understanding of the lectures

How important are the lecturer's transparencies/PowerPoint slides or other visual aids for your understanding of the lectures (items 45, 58)?	Very important for my understanding 1	2	3	Not important for my understanding 4	N
L1	33 (17%)	59 (30%)	63 (32%)	40 (21%)	195 (100%)
English	40 (21%)	68 (35%)	55 (28%)	32 (16%)	195 (100%)

The answers from the table above suggest that the majority of respondents see visual aids as a significant element of the lecture, especially with regard to their understanding of what is presented. While 84% of the respondents said that visuals are important for their understanding of lectures in English, 79% of them also said that visuals are important for their understanding of L1 lectures. It can be argued that in general, as Hellekjaer (2010: 19) also claims, importance of visuals can depend on the discipline or a topic in question. However, since the respondents were asked to answer the questions according to their overall previous experience, it can be concluded that for the majority of respondents, the visual aids are important, irrespective of the language of instruction.

Furthermore, this pair of items was correlated with L1Index and EngIndex respectively. Not so strong positive correlation between L1Index and the item for L1, with $r = 0.31$ ($p < 0.01$, $N = 195$), and slightly stronger correlation of the item for English with the EngIndex, with $r = 0.35$ ($p < 0.01$, $N = 195$) indicate that when the

scores for indices measuring lecture comprehension in L1 and English increase/decrease, the scores of the items measuring the importance of visuals for understanding increase/decrease. Given that higher scores for the items measuring the importance of visuals indicate that visuals are not important for respondents' understanding, such correlation further indicates that, students who experience fewer difficulties with lecture comprehension (given by higher L1Index and EngIndex scores), experience less need to support one's understanding of lectures with visual aids. Put differently, the lower the level of proficiency (given by lower L1Index and EngIndex scores), the greater the need to support one's understanding of lectures with visual aids.

5.9. Lecture comprehension scores according to L1

In one of the previous sections of this thesis, mean scores and standard deviations for L1Index and EngIndex were calculated and discussed. Since the scores of these indices measuring lecture comprehension were derived for the whole sample, in this section, the independent T-test is used in order to determine whether there is a significant difference in the L1Index and EngIndex scores according to respondents' L1.

As explained before, the sample includes 94 respondents who said that their first language (L1) is German and other 94 respondents who said that a language other than German is their first language. There are also 4 respondents who stated that there are two languages they consider as their L1 and 3 respondents who stated they consider more than one language other than German as their L1. The following table displays the results of the independent T-test which is used to compare scores between groups and shows whether the differences are statistically significant.

Table 15: Comparison of scores for L1Index and EngIndex according to respondents' L1

Indices	L1	N	Mean score	Std. Deviation
L1Index	German	94	3.3**	0.49
	Other	94	3.1**	0.49
	German and Other	4	3.6	0.32
	Others	3	3.6	0.08
EngIndex	German	94	3.1	0.51
	Other	94	3.0	0.51
	German and Other	4	3.3	0.58
	Others	3	3.1	0.49

** The difference is significant at the 0.01 level

The first observation that can be made from the table above is that there is a small but significant difference between the mean scores for L1 between students with German as their L1 and with those with a different L1 (as shown in the highlighted rows in the table). With regard to lecture comprehension scores in English, there is no significant difference in mean scores for English between respondents with German as their L1 and those with a different L1.

Hellekjaer (2010: 20) points out that according to the results obtained through an independent sample T-test there is “no difference between students with Norwegian as their L1 and those with a different L1 with regard to lecture comprehension in English”. Hellekjaer’s results are particularly interesting since in one of his previous studies where he interviewed EM lecturers’ in Norway 2007, he found that they have been skeptical about the language proficiency of the exchange students but did not believe that Norwegian students have problems due to language difficulties. In the German sample, there is a clear and significant difference in mean scores for English, with higher scores for those having German as their L1. As in the present study, “in both samples the

respondents with a different L1 than Norwegian or German have [significantly] lower scores for lecture comprehension in the L1” (Hellekjaer 2010: 20).

With regard to the results obtained, it should be again noted that the German sample is quite small and that the Austrian sample includes more than half of respondents who stated they have an L1 different than German, as well as that they speak over 20 different L1s.

5.10. Pre-lecture activities and lecture comprehension

Research suggests that student lecture comprehension can be negatively affected by unfamiliar or unexpected lecture structures. It was therefore suggested that students should, for example, read in preparation in order to familiarize themselves with such structures (Flowedew 1994: 292). In the present research study, the students were asked whether they read in preparation for their English and L1 lectures and their answers are displayed in the following table.

Table 16: Reading in preparation for lectures in L1 and English

How often do you read in preparation for lectures (items 36, 49)?	Never	2	3	Always	N
L1	27 (14%)	48 (24%)	89 (46%)	31 (16%)	195 (100%)
English	16 (8%)	63 (32%)	85 (44%)	31 (16%)	195 (100%)

As the table above shows, 84% of respondents read in preparation for their L1 lectures and 92% of them read in preparation for their English lectures. The mean scores are 2.6 for L1 and 2.7 for English. The discrepancy between the scores is not significant. Since L1 scores are used as benchmark for interpreting the English scores, one can conclude that the frequency of students' reading in preparation to lectures is not affected by the use of English as a medium of instruction.

Airey and Linder (2006) found that some students read before or after lectures in order to compensate for difficulties with EM lecture comprehension. Chang (2010: 72) explains that the results obtained from his research on lecture comprehension indicate that there seems to be a correlation between English textbook reading and EM lecture comprehension. He further suggests that reading the lecture materials in preparation for the lecture could be helpful for enhancing students' comprehension.

The results from the present study, indicate a small but significant correlation between reading in preparation and lecture comprehension scores for English, with Pearson's $r=0.19$ ($p<0.01$, $N=195$). Correlating L1Index with the item measuring how often students read in preparation for L1 lectures gave non-significant correlation. Hellekjaer (2010: 244) says that for the Norwegian sample there is little difference between L1 and English with regard to preparing for lectures. Further, there is a low but significant correlation, with $r=0.18$ ($p<0.01$, $N=351$), between L1Index and the item measuring how often students read in preparation for the lectures. Further, there is a low and non-significant correlation between this item and EngIndex in the Norwegian sample (ibid.).

He thus concludes "preparing for lectures by reading improves lecture comprehension in the L1, but not in English" (ibid.). The results obtained in the present study lead to a conclusion that it is quite the opposite – that reading in

preparation may enhance students' lecture comprehension in English, not in the L1. From these results, it may be concluded that, as Chang (2010) also suggested, reading may help students enhance comprehension of lectures in English.

5.11. The preference of attending EM lectures over L1 lectures

Students at the Faculty of Business, Statistics and Economics, depending on the particular degree, have the opportunity to decide whether they are going to attend lectures in English or in German, in contrast to those lectures that are only offered in English. Therefore, the participants of the present survey were asked how often they decided upon attending an English lecture rather than an L1 lecture and the scores of this item were then correlated with the EnglIndex. The respondents' answers are given in the following table.

Table 17: Respondents' answers to the question: If you have the chance to choose between a lecture held in English and a lecture held in L1, how often do you choose the one held in English?

Possible answers to the item 48	Never	2	3	Always	N
	11 (6%)	59 (30%)	71 (36%)	54 (28%)	195 (100%)

It is interesting to see from the results that 28% of the respondents would always choose a lecture in English over the same lecture offered in L1. 66% of the respondents would also choose an EM over an L1 lecture, but not every time. Furthermore, since there is a strong positive correlation between this item and

the EngIndex, with $r = 0.56$ ($p < 0.01$, $N = 195$), it can be concluded that the respondents with the higher scores for EngIndex, more often choose English lectures than L1 lectures. In order to see whether the possible reason for preferring lectures in English over L1 is the utility of English for the respondents' future careers, the following section will deal with motivation for attending an EM lectures, especially with regard to its utility for students' future careers.

5.12. Motivation

As explained before, the third section of the questionnaire comprises questions about students' motivation for learning English, especially regarding their opinion about the utility of English for their future career. As Hellekjaer (2010: 21) also argues, it was assumed that specific motivational factors will have a positive correlation with the EngIndex. Also, it was assumed that higher scores for EngIndex would correlate positively with the item measuring respondents' interest to work abroad and the item measuring their interest to use English as their working language. The correlations between motivational factors for learning English and the EngIndex are presented in the following table.

Table 18: Correlations between EngIndex and motivational factors

Questions	Pearson's correlation factor (r)
How useful do you believe knowing English will be in your future career?	0.24**
How interested are you in working outside your own country in your future career?	0.33**
Are you interested in working in a job where English is your working language?	0.49**
Do you think knowing English will be important for new jobs?	0.30**
Is the extra work involved in taking an EM course worthwhile?	0.22**

** Correlation is significant at the 0.01 level

The aforementioned assumptions were confirmed by the results displayed, since the students with high EngIndex scores (those who have less difficulties in understanding EM lectures, which implies that they are more proficient in English) are also the more motivated respondents with regard to working abroad and in an English-speaking environment. One can observe that high lecture comprehension scores also positively correlate with the belief that English is important when applying for new jobs and with the belief that taking an EM lecture is worthwhile.

In comparison to the above given correlations, Hellekjaer (2010: 21) reports lower but significant values of Pearson's correlation coefficients for the Norwegian sample, and a lack of significant correlations for the Germans sample. He further states that even though a lack of significant correlations in the German sample can be due to the small sample size, it is interesting to note here that German respondents seem to find English less important for their future careers than Norwegian and Austrian counterparts.

5.13. Reasons for attending an EM lecture

The third section of the questionnaire also included questions about the respondents' reasons for attending an EM lecture. The following table summarizes the answers to the first three questions.

Table 19: Reasons for attending an EM lecture

Possible answers to the items 26-29	I am/was an exchange student	To improve my English	I am/was interested in this specific course
Respondents' answers	17 (9%)	111 (57%)	91 (47%)

As one can see from the table, there are many students who find that attending an EM lecture is an opportunity to improve their English, or they attend an EM lecture out of interest in the lecture as such. Only a small number of respondents said that they attended a lecture in English because they are or were in an exchange programme, which again confirms the fact that there is a high percentage of so-called international students at the Faculty of Business, Economics and Statistics who are duly enrolled in degree programmes and are not solely there during a short period of time as it is characteristic of exchange students.

In addition to the previous three reasons, which were offered to the respondents, they could also give any other reasons they have had for attending a lecture in English. Some of the reasons are given below (for the full list of answers see Appendix).

“My university has mandatory subjects that you can only take in English”⁸

“No course in German”

“I understand/speak/write english better than german”

“Prefer to learn eng. terminology”

“easier than German”

If one observes the selected answers and the full list of respondents' answers that is provided in the Appendix, one can see that respondents' attend EM courses because it is obligatory to take exams in English in a certain amount of semester hours/ECTS according to the curricula of their degree programmes. Additionally, some respondents said that they understood English better than German and that lectures in English were easier for them than in German.

5.14. Exposure to English

A number of studies have shown that exposure to English can be considered a very important factor with regard to speakers' proficiency levels. Elley & Mangubhai (1983: 53) observed that reading story books can positively influence reading and listening comprehension. In the research study that was conducted by Shen et al (2005: 464) it was also concluded that there is a correlation between college students' English scores and their out-of class learning activities, such as watching movies, reading magazines or news in English, writing emails in English, etc. Rubio & Lirola (2010: 32) argue that successful learning of a foreign language can be influenced by watching the

⁸University: University of Vienna; degree programme: IBA

original version of films or television programs or by watching with subtitles. Hellekjaer (2010: 21) claims that lecture comprehension can be influenced by the exposure to and use of English. The items measuring respondents' exposure to and use of English included in the questionnaire are discussed below. The answers provided by the respondents from the Austrian, Norwegian, and German samples are given in the table below.

Table 20: Respondents' answers to the question: How many English books do you read per year?

Sample/Answers to the item 16	None	1-3	4-6	7-12	13 or more
Austrian sample (N=195)	21%	52%	15%	9%	3%
Norwegian sample (N=364)	7%	28%	28%	22%	15%
German sample (N=47)	34%	47%	15%	2%	2%

According to the table above, it seems that the Norwegian respondents read more English books per year than the Austrian and German respondents. However, the comparison is limited since the size of these samples is different and I do not have the Norwegian and German sample in order to test, for example, the significance of the difference between mean scores.

The data obtained from the present research was used in order to determine whether there is a correlation between exposure to English and comprehension of lectures in English. Pearson's correlation coefficient (r) was calculated with EngIndex as the dependent variable and the item measuring exposure to English through reading books as the independent variable. With $r = 0.48$ ($p < 0.01$, $N = 195$), it was concluded that there is a strong positive correlation between comprehension proficiency in English and reading books in English. In other words, the more books the respondent read per year, the higher their

EnglIndex score. It is important to further look at other forms of exposure to English that are included in the items in the table below.

Table 21: Exposure to English through reading of print media and on the Internet

How often do you read English periodicals, magazines, and newspapers (item 17)?					
Sample/Answers	Never	Sometimes	Monthly	Weekly	Daily
Austrian sample (N=195)	10%	51%	10%	17%	12%
Norwegian sample (N=364)	11%	39%	17%	19%	14%
German sample (N=47)	15%	70%	4%	6%	4%

How often do you read English on the Internet (item 18)?					
Sample/Answers	Never	Sometimes	Monthly	Weekly	Daily
Austrian sample (N=195)	3%	26%	9%	22%	40%
Norwegian sample (N=364)	3%	13%	5%	24%	56%
German sample (N=47)	2%	40%	13%	23%	21%

According to the results from the table above it seems that the Norwegian and Austrian respondents are more exposed to English through reading print media or reading on the Internet than their German counterparts. Furthermore, the results of the present study indicate that both of the aforementioned items correlate positively with the EnglIndex. In the case of the item measuring the frequency of reading English print media, Pearson's correlation coefficient $r = 0.36$ ($p < 0.01$, $N = 195$) indicates a positive correlation between this item and the EnglIndex. The item measuring the frequency of exposure to English via reading on the Internet with $r = 0.40$ ($p < 0.01$, $N = 195$) has an even stronger positive correlation with the EnglIndex. Both correlations suggest that exposure to English through reading as such positively influences on English proficiency i.e. on lecture comprehension.

It is very interesting to observe the following item about the exposure to English through watching movies, videos, or TV programs in English, especially in terms of its relationship to EngIndex. As already explained, research has shown that English language proficiency can be positively influenced by watching movies or TV programs in the original version or with subtitles. In Europe, however, there are countries that tend to use subtitling of movies, such as Norway, Sweden, Croatia, Serbia, Romania, Greece, Denmark, Romania, Slovenia, Portugal, or the Netherlands, whereas there are countries where dubbing of movies or programs is used, such as Germany, Austria, Switzerland, Spain, Italy and France (Micola et al 2008: 12).

Micola et al (2008: 12) argue that subtitling is preferred in smaller-language countries (e.g. Croatia) or in smaller countries who share large languages, whereas dubbing is preferred in large-language countries (e.g. Spain). They further argue that subtitling as such has a strong positive impact on English skills, and that overall, the citizens of the subtitling countries speak better English than those of the dubbing countries (Micola et al 2008: 23). Given that in Norway subtitling is preferred, whereas in Germany and Austria, dubbing is preferred, it was interesting to see how respondents of the present survey answered the question in the following table.

Table 22: Exposure to English via watching movies, videos, and TV programs

How often do you watch English language movies, videos, or TV programs? (item 18)?					
Sample/Answers	Never	Sometimes	Monthly	Weekly	Daily
Austrian sample (N=195)	3%	21%	18%	31%	20%
Norwegian sample (N=364)	2%	19%	22%	27%	30%
German sample (N=47)	11%	41%	21%	21%	21%

It is interesting to observe in the table above that in contrast to other forms of exposure explained before, there seems to be no significant difference between the answers of respondents of the respective samples. Let us now observe the correlations of EngIndex as a dependent variable with this item, in order to examine the relationship between listening proficiency English and exposure to English through watching English language films, programs, or videos.

The Pearson's correlation coefficient for the Austrian sample, $r = 0.41$ ($p < 0.01$, $N=195$), indicates a quite strong correlation between language proficiency and media exposure to English. Hellekjaer (2010: 22) says that for the German sample there is also a quite strong correlation between the item measuring media exposure and EngIndex with $r = 0.42$ ($p < 0.01$, $N=47$), whereas for the Norwegian sample there is a lack of correlation with $r = 0.08$ ($p < 0.01$, $N=364$). He explains that the lack of correlation can be explained, in one part at least, due to the higher English proficiency in Norway than in Germany. The lack of correlation between EngIndex and this item is interesting since "extensive exposure to English through the media is considered an important explanation for Norwegians' supposedly high levels of proficiency (Hellekjaer 2010: 21).

The next two items that were measuring respondents' exposure to English in this section of the questionnaire measure how often the respondents write and speak in English, since it was also assumed that these items will correlate positively with respondents' English proficiency in terms of EngIndex scores. The following table summarizes the answers to the questions regarding these forms of exposure of the Austrian, Norwegian, and German samples.

Table 23: Use of English for speaking and writing

How often do you speak English (item 20)?					
Sample/Answers	Never	Sometimes	Monthly	Weekly	Daily
Austrian sample (N=195)	5%	28%	13%	34%	20%
Norwegian sample (N=364)	2%	19%	22%	27%	30%
German sample (N=47)	4%	36%	17%	21%	21%

How often do you write in English (item 21)?					
Sample/Answers	Never	Sometimes	Monthly	Weekly	Daily
Austrian sample (N=195)	7%	34%	12%	29%	18%
Norwegian sample (N=364)	5%	25%	12%	29%	29%
German sample (N=47)	11%	47%	11%	19%	13%

By observing the percentage of the respondents' who speak and write in English on a monthly, weekly, and daily basis in contrast to sometimes and never, one can see that Norwegian respondents seem to be most exposed to English through speaking and writing. After them come the Austrian respondents, and then the German respondents. Here it is again important to note, that the German sample with 47 respondents is the smallest of all three.

In terms of correlation, these two items measuring exposure to the English language correlate positively with the EngIndex for all three samples. In the German sample, with $r = 0.53$ ($p < 0.01$, $N=47$) for speaking English and EngIndex and $r = 0.54$ ($p < 0.01$, $N=47$) for writing and EngIndex, it can be concluded that there is a strong positive correlation between these two items and the EngIndex (Hellekjaer 2010: 22). An almost equally strong correlation is given in the Austrian sample, with $r = 0.47$ ($p < 0.01$, $N=195$) for speaking English and EngIndex and $r = 0.46$ ($p < 0.01$, $N=195$) for writing and EngIndex. For the

Norwegian sample, the correlation coefficient is also positive; however, with a somewhat smaller value of $r = 0.26$ ($p < 0.01$, $N = 364$) for both speaking and writing in English and EngIndex as a dependent variable.

The last two items about respondents' exposure to English measure whether they use English in social and job related situations. The results show that 55% of the respondents use English in social situations, whereas 42% of them use English in job related situations. One may assume that one possibility for a relatively small percentage of students who use English in social and job related situations is that they tend to use German or other languages more often. Knowing that there are many students who have L1s other than German at the Faculty of Business, Economics, and Statistics and that many respondents of this survey also stated they have L1s different than German, one may assume that they use their L1 to converse with the colleagues who speak the same L1 or that they use German more often than English as the *Lingua Franca* at the Faculty or elsewhere when they engage in social encounters.

5.15. Forms of English instruction in high school

In the second section of the questionnaire, respondents were asked about the forms of English instruction they received in high school. They were asked whether they received instruction in a non-language subject (item 13), whether they attended high school in an English speaking country for a longer period of time (item 14), and whether they attended an English language high school (item 15). Their answers are summarized in the table below.

Table 24: Forms of English instruction in high school

Items/Respondents' answers	Yes	No	Total
Instruction in non-language subject	43 (22%)	152 (78%)	195 (100%)
High school in English speaking country	25 (13%)	170 (87%)	195 (100%)
Attending an English language high school	29 (15%)	166 (85%)	195 (100%)

As the table above shows, a rather small percent of respondents received instruction in English in high school. There is, however, a possibility that respondents have received EM instruction in forms other than those given above, or that they have had EM courses during their primary level education. The information from the table above also specifies neither the amount of EM subjects attended nor the field of study attended in English.

Nevertheless, an assumption may be made that the specific difficulties experienced by the respondents with EM instruction at tertiary level might be influenced by their limited experience with EM courses in high school. High school education is followed immediately by university education for most students and EM courses in high school could be considered a valuable preparation for students in terms of academic listening practices and strategies, taking notes, memorizing, and interpreting in a foreign language. In order to enhance the successfulness of EMI programmes, it has been suggested that there is a need for cooperation between different educational sections, in particular between secondary and tertiary education (ENLU closing conference, Workshop 5 2006: 2).

5.16. Likes, Dislikes and Comments about EM lectures

The last three questions of the questionnaire were optional – the respondents were asked to answer them or to provide comments about EM lectures only if they had time. Firstly, they were asked to describe in their own words what they liked the most about their lectures in English. Some of the answers provided by the respondents are given below (for the full list see the Appendix).

What do you like the most about your lectures in English? (item 64)

“I really liked the articles (from Oxford Uni) in Business English 2, furthermore I enjoyed the slides in Micro & Macroeconomics”

“It’s a challenge because it’s more difficult; plus I like to improve my English”

“that I can learn more words, especially business voc”

“Sentence structure is simpler. Terminology is internationally used”

“as english is very important in business today it is necessary to extend your english knowledge”

“I feel that courses in english are presented more clearly because English as a language is “easier” than German”

“I understand it better than German”

“Usually teachers are easier understood. They talk slowly”

“As far as german is not my mother tongue, but the 2nd foreign language I prefer to read and prepare myself for the course reading English books”

As can be seen from the answers provided by the respondents, what they like the most about lectures in English is that they are challenging, that they can improve their English knowledge, especially (business) vocabulary, and that lecturers are easier to understand because either they speak slowly and clearly or because the students feel more comfortable with English or can understand English better than German. Again, it may be assumed that students whose L1 is not German have stated that they understand courses better in English than in German. However, there are also students who said that they prefer studying materials like books and articles in English rather than in German and here one should not automatically assume that they were the students with L1s other than German. As previously discussed in this thesis, many up-to-date textbooks or articles are more easily accessible and exist in a greater number in English than in other languages. Thus it also may be the case that students, regardless of their mother tongue, prefer materials in English, simply because there are more and more up-to-date materials in English than in German.

It is interesting to observe here that students said that EMI helped them improve their English language proficiency. These findings were also reported by Chang (2010) and Wu (2006). It can therefore be concluded that EM lectures may have a positive influence on English language proficiency of university-level students. This conclusion seems quite plausible, especially because during EM lectures the students produce and receive authentic language in the context of a real-time communication (Brandl 2007; Swales 1990).

Secondly, the respondents were asked to describe in their own words what they like the least about their lectures in English. Again, some of the answers provided by the respondents are given below (for the full list see the Appendix).

What do you like the least about your lectures in English? (item 65)

“Monologue (but possible to ask)”

“Some Prof. don’t have a very nice accent and makes it sometimes a bit difficult to understand what they are actually talking about”

“If the teacher can’t speak proper English and has bad pronunciation”

“That the teacher is speaking and writing too fast”

“Sometimes the texts were too difficult; as exam the questions are sometimes asked with difficult vocabulary”

“Not easy to write information during presentation”

The answers that were given by the respondents about their dislikes regarding lectures in English reflect the previous results presented earlier in this study. One of the lecture comprehension problems students experienced with regard to EMI related to lecturers’ unclear pronunciation. It is therefore not surprising that students said they disliked some lecturers’ pronunciation of English. Also, the respondents’ EngIndex scores indicated that they experience difficulties due to lecturers’ speaking speed and again they stated that they disliked it when the lecturers speak too fast. Moreover, the respondents said that sometimes difficult vocabulary is used, which is again reflected in the lower scores in EngIndex in comparison to L1Index regarding the item about unfamiliar words and expressions. Finally, the answers provided to this question show that the students do not like monologic lectures or when it is difficult for them to take notes during lectures.

In one of the comments above, a student states that he/she dislikes when “the teacher can’t speak proper English”. This is an interesting comment, especially because students who participated in Chang’s study on lecture comprehension reported that their professors did not speak proper English and that this is the reason why they had difficulties understanding EM lectures. Because of this, Chang (2010: 77) claims:

This stands as a cautionary reminder to university administrators that in addition to careful selection of teachers qualified for offering EMI courses, universities should also provide their faculty members involved in English-medium instruction with better resources and support. Apart from various teaching strategies, training programs in English presentation skills should also be offered.

Wilkinson (2005) reports that the lecturing staff in his research study felt they needed additional training to improve their language skills. For example, they needed training to enhance the clarity of their speech and to expand their vocabulary range. Unfortunately, the present research only includes students' perceptions of the lecturers' linguistic competence. It would be interesting to interview the lecturers at the Faculty of Business, Economics and Statistics and investigate how they felt about their English competence and whether they needed additional training for teaching in English.

Thirdly, the respondents were asked to provide additional comments if they had time left. Only ten respondents provided some general comments, some of which are given below while the list of all comments is given in the Appendix.

Do you have any other comments or things to add? (item 66)

"Considering the new BA⁹ programmes it would be good to offer more courses in English, some more English students could come to Vienna"

"If you study IBW¹⁰, I think it is important to have lectures in English too! This way you can improve or maintain your English, so when you finish your studies you can work internationally and cooperate with international firms!"

"English books are more interesting"

"I wish we had more courses in English in BWL Programm"

⁹Business and Administration

¹⁰Internationale Betriebswirtschaft

“check Professor’s knowledge before giving him a lecture in a foreign language”

These comments show that some students see EM lectures as a good way to improve their language proficiency. Further, some students would like to have more courses in English and some prefer books that are written in English. The last comment indicates that students tend to be critical about lecturers who are teaching courses in a foreign language, probably due to the fact that students believe that lecturers sometimes have limited English proficiency or unclear pronunciations, as indicated by the respondents’ answers to the two previous questions.

In the following sections of the thesis, there will be a discussion of the main findings of the research study and their implications with regard to improving the quality of EM and L1 instruction. Furthermore, a brief discussion of the external validity (generalization of results) will be given. Finally, conclusions regarding the research study will be drawn and recommendations for further research will be provided.

6. Summary of the findings

The aim of the empirical research conducted at the Faculty of Business, Economics and Statistics, of the University of Vienna, was to investigate whether the students experience difficulties when they are listening to the lectures given English compared to those given in their first language (L1), and if so, to what extent. This was done by examining seven different aspects of lecture/academic listening comprehension in English and in L1. Self-assessment was used as a method for measuring lecture comprehension and in spite of some limitations of the method discussed earlier, the research yielded some interesting findings.

The main finding of this study is that Austrian students have to a certain extent difficulties with particular aspects of lecture comprehension. With regard to different aspects of listening comprehension during EM lectures when compared to L1, the findings show that the most frequent source of difficulty for Austrian respondents involves unclear pronunciation of words and expressions, unfamiliar words and expressions, and lecturer's speaking speed. Moreover, the respondents find it difficult to follow the lecturer's line of thought and have difficulties understanding the content. It may be assumed that difficulties understanding the content may be caused by the initial difficulties with vocabulary, unclear pronunciation, and lecturer's speaking speed. Hellekjaer's (2010) findings suggest that, like Austrian respondents, Norwegian and German respondents experience difficulties with EM instruction mostly due to unclear pronunciation and/or word segmentation and unfamiliar vocabulary. Hellekjaer (2010: 23) explains that such difficulties may be related to respondents' academic listening proficiency (in the first, second, third language, etc.), but also that such difficulties may be due to inadequate lecturing skills and/or to lecturers' pronunciation as such. He further reports that respondents surveyed in Norway

and Germany have difficulties in with following a lecturer's line of thought and with taking notes. Interestingly, in the present study with Austrian respondents, there is no significant difference in the level of difficulties with taking notes in EM as compared to L1.

When compared to the findings of Hellekjaer (2010), the findings of this study suggest that Norwegian respondents seem to experience fewer difficulties with both EM as well as with L1 instruction, when compared to the Austrian respondents. However, the results also suggest that Austrian respondents seem to experience less difficulty in lecture comprehension than the respondents from German higher-education institutions. As Hellekjaer (2010: 16) observes, it is interesting to note here that despite being master level students, the lecture comprehension scores of the German respondents indicate higher levels of difficulty, compared to the majority of undergraduate level students of the Norwegian sample, and all undergraduate students of the Austrian sample. Here, it is again important to note that the German sample is smaller than both the Norwegian and Austrian samples. Also, the comparison given above is made according to the mean scores of L1Index and EngIndex from the three samples, and in general, one should be very careful when comparing means across samples without being able to test whether the difference between scores is statistically significant. It was not possible to test the difference and the discrepancy between scores of all the three samples, since I did not have Hellekjaer's data. Despite the limitations of the above given comparison, it may serve to provide an insight into the lecture comprehension difficulties students experience.

The findings further indicate that there is a positive relationship between indices L1Index and EngIndex, which are used as a measure for lecture comprehension in L1 and English, respectively. The positive relationship between these two variables indicate that the fewer difficulties students have with understanding L1

lectures, the fewer difficulties they have understanding English lectures. It is interesting to observe such positive relationship between indices measuring lecture comprehension in L1 and English especially because the sample for this research study involves respondents with many different L1s. Moreover, there is no significant difference between lecture comprehension scores in English of respondents with German as their L1 and those with a different L1, which means that students have similar difficulties (and to the same extent) with EM instruction, regardless of their L1.

Moreover, the findings of the present study, as well as Hellekjaer's study, suggest that respondents tend to find EM lectures more laborious than L1 lectures in terms of time and work invested in studying for respective lectures. The findings of both studies further show that there is a negative correlation between lecture comprehension scores and items measuring how laborious EM instruction is in comparison to L1. This means that respondents who have more difficulties with EM lecture comprehension, also find EM lectures more laborious than L1 lectures.

Another key finding of the present study, which coincides with Hellekjaer's findings, is that students experience difficulties in lecture comprehension regardless of the language of instruction. This means that students experience similar difficulties in English and in L1, only to a different extent. This finding is further supported by the need of students to ask clarification questions, especially about unfamiliar words and expressions as well as about unfamiliar content. In terms of correlation with EM and L1 comprehension scores, the findings also suggest that respondents who experience more difficulties in lecture comprehension have a greater need to ask clarification questions regarding unfamiliar words, expressions, and content.

Another important issue is the relationship between respondents' exposure to the English language in terms of out-of-class activities and their English proficiency levels. The findings of this study show that there is a positive correlation between exposure to English and speakers' English proficiency levels, indicating that students who are more exposed to English via, for example, reading books, magazines, watching movies, and so on, have fewer difficulties with English lecture comprehension than those who are less exposed to English during their out-of-class activities.

Finally, the findings suggest that for the majority of the respondents, visual aids are important for their understanding, irrespective of the language of instruction. Hellekjaer (2010) also found that the majority of respondents involved in his research study show dependence on visual aids for lecture comprehension, regardless of the language of instruction. The findings of the present study also confirm that there is a correlation between lectures comprehension scores in L1 and English and the item measuring the importance of visual aids for understanding of lectures. This correlation indicates that the higher the level of proficiency, the lower the need to support one's understanding of lectures with visual aids. In other words, the lower the level of proficiency (or greater the difficulties with lecture comprehension), the greater the need to support one's understanding of lectures with visual aids.

All these findings suggest that students experience some difficulties understanding both lectures given in English and in L1. Therefore, there is a need for improving quality of the university lectures, regardless of the language of instruction, in a way which enables students to understand the lectures they attend. However, before the suggestions for improving lecture quality are presented, the validity of the findings of this study will be addressed in the following chapter.

6.1. Application of the findings

One of the central findings of this research study is that Austrian students, like Norwegians and Germans, tend to experience difficulties in lecture comprehension regardless of the language of instruction. This implies that students experience similar difficulties in English and in L1, only to a different (often greater) extent. This finding confirms the claim made by Hallekjaer & Räsänen (2010: 8) “that changing the language of instruction only exacerbates the difficulties that are already present i.e. that a bad lecture in L1 becomes even worse in English”.

Thus, one of the most significant implications of this study is that there is a need for improving the quality of university lectures as such, regardless of the language of instruction. In this section of the thesis, the findings of the present study will be used in order to make recommendations on how to improve the quality of EM instruction.

As already explained, the answers of the students surveyed for this research indicated that they have comprehension difficulties due to lecturers’ unclear pronunciation of words and expressions. Some of them indicated that the unclear pronunciation of the lecturers is something they especially dislike about EM instruction. It is thus necessary to work on improving lecturers’ “pronunciation, stress and word segmentation” (Hellekjaer 2010: 24) and “language quality” (ibid.).

Another important source of lecture comprehension difficulties found in this study, which also coincides with Hellekjaer’s findings, is unfamiliarity with words and expressions. The reason for this may be that the university lecture as an academic genre involves specialized vocabularies, which may be demanding for

students to learn, to learn how to use, or how to memorize. This finding is especially interesting with regard to the present research study, since, as it was demonstrated earlier in this thesis, the curriculum for (International) Business Administration includes “Business English” (1 and 2), which aims at familiarizing students with the specific business vocabulary. This gives even more importance to the need for improving students’ knowledge of (specialized) vocabularies. Perhaps it would be desirable for the Faculty of Business, Economics and Statistics to strongly recommend to the students to attend “Business English” lectures before attending other EM lectures in the core and specialization phase. It may also be recommendable to prescribe attending “Business English” lectures before other EM lectures, since at the moment students can, to a great extent, choose the lectures which they want to attend and in which sequence. Thus for example, they can attend all EM lectures in the core phase before attending “Business English”. In my personal opinion, students may already have realized that it is important to learn business English vocabulary before attending lectures in English. However, it is possible that it is difficult for them to organize their schedules in such a way.

With regard to other possibilities of coping with the issue of students’ difficulties with unfamiliar vocabulary, Hellekjaer (2010: 24) suggests that lecturers should devote some time for explaining key terms and concepts as a pre- or after-lecture exercise. Another option he suggests would be to “encourage students to work together in preparation for, and as a follow-up after lectures” (Hellekjaer 2010: 24) or to develop “exercises in which students get to use the terms and concepts in relevant contexts” (ibid.).

Besides the unclear pronunciation of words and expressions and unfamiliar words and expressions, the findings of the present study suggest that students experience difficulties with lecture comprehension due to the lecturer’s speaking

speed as well as with the understanding of the content. This may be caused by the initial difficulties with vocabulary, unclear pronunciation, and lecturer's speaking speed. Therefore, it is advisable to work on lecturers' rate of speech when presenting information during EM courses. Additionally, it is important that the lecturers work on structuring the lecture in such a way that students do not have difficulties following the lecturer's line of thought.

Owing to different lecture comprehension difficulties students experience with EM instruction, the findings further indicate that students show a tendency to often pose clarification questions. As was already discussed in this thesis and as Hellekjaer (2010: 18) also claims, it is important to make room for clarification questions in English instruction. The same was also observed in Airey and Linder's research in 2006. Hellekjaer (2010: 18), however, argues that the importance of the possibility to ask clarification questions should be considered also in the L1 context, as the results of his research study and the present study show. Furthermore, as Lynch (2011: 84) explains, it is not only necessary to allow and make room for the students' questions, but it is also necessary to encourage students to ask the lecturer for clarification in order to enhance the chances for effective listening. At the same time, Morell (2004: 326) argues that during a lecture "the lecturer can enhance participation and [thus] facilitate comprehension". Therefore, as Lynch (2011: 84) further explains, it is also crucial to train content lecturers so that they can make it easier for students to ask questions, by developing specific rhetoric and communication skills, such as inserting question pauses during their lectures.

The findings of the present study indicate that for the majority of respondents, visual aids are important, irrespective of the language of instruction. It is thus important, as the Faculty of Business, Economics and Statistics also recommends, to make the maximum use of different media and support

materials for presentation of the content lectures in both English and L1. Furthermore, visual aids, such as PowerPoint slides can also be used for making it easier for students to take notes during lectures, since, as explained earlier, slides can be uploaded online for students on for example e-learning platforms. In such a way, the students they print the slides out before the lecture starts and then make notes directly on the slides. According to personal experience as a student of Business and Administration and observations made while conducting the survey, many lecturers at the Faculty regularly publish their PowerPoint slides and other materials online and students bring them to lectures. The same observations were made by Hallekjaer during his research study.

6.2. Conclusions and recommendations for further research

The present thesis investigated the rationales behind implementation of an educational approach that uses a language other than the students' (and usually also lecturer's) mother tongue as a medium of instruction. On the European continent, such an approach is known as Content and Language Integrated Learning (CLIL). At the tertiary, level, the term used to refer to this approach is English-medium instruction (EMI). This is mainly because English has become the most dominant language of education, science as well as areas like business and politics in 21st century Europe.

The reasons for the dominance of English as a global *Lingua Franca* are most often related to the processes of globalization and internationalization. The reasons for the increasing number of lectures delivered through the medium of

English in European higher-education institutions are certainly also related to CLIL, internationalization of the higher-education institutions and the market in international students, student and staff mobility, teaching and research materials, and graduate employability. Furthermore, it is claimed that the Bologna process has paved the way to the increased number of courses in English in European higher education programmes.

The implementation of EMI has been increasingly popular in economics and business studies. The present thesis presents the implementation of EMI at the Faculty of Business, Economics and Statistics, of the University of Vienna after the educational reform in Austria, following the Bologna Declaration.

The empirical research conducted at this institution, which focuses on the assessment of students' lecture comprehension deals with the question whether university-level students experience difficulties with EM instruction, and if so, to what extent. It does so by comparing different aspects of lecture comprehension in English compared to first language (L1).

The main finding of this study is that Austrian students have to a certain extent difficulties with particular aspects of lecture comprehension. With regard to different aspects of listening comprehension during EM lectures when compared to L1, the findings show that the most frequent source of difficulty for Austrian respondents involves unclear pronunciation of words and expressions, unfamiliar words and expressions, and lecturer's speaking speed. Moreover, the respondents find it difficult to follow the lecturer's line of thought and have difficulties understanding the content. It may be assumed that difficulties understanding the content may be caused by the initial difficulties with vocabulary, unclear pronunciation, and lecturer's speaking speed.

The findings of the present research further imply that students experience the same difficulties in lecture comprehension also when L1 is used as a medium of instruction, only to a different (slightly smaller) extent. It is therefore recommended that the general quality of lectures should be improved, regardless of the language of instruction.

Recommendations for the improvement of EM instruction included in this thesis range from working on improving students' language proficiency, suggestions about support materials needed for lectures, and lecture structure as such to suggestions about improving lecturers' language proficiency and their rhetoric and communication skills.

A number of limitations with regard to this research need to be considered. With regard to the validity of the findings, one should be cautious when interpreting and generalizing of the findings presented due to a rather small sample and sampling method that limits the external validity of the findings. Also, the method used for measurement of lecture comprehension, that is self-assessment, has certain limitations. Therefore, it is hence highly recommendable to validate the findings by using for instance a listening test.

This research has thrown up many questions in need of further investigation. The first recommendation for further investigation would be to conduct a validation study, a follow-up survey, or a valid English language test. Furthermore, it would be recommendable to survey students from other higher-education institutions in Austria, but also in other European countries. It would also be interesting to conduct a follow-up survey with students of the same degree programme, for example, Business and Administration, but from another university, such as the Vienna University of Economics and Business. Finally,

there is a need for conducting a research study, which would investigate the differences in lecture comprehension between undergraduate and graduate level students.

Bibliography

Airey, John; Linder, Cedric. 2006. "Language and the experience of learning university physics in Sweden". *European Journal of Physics* 27(3), 553-560

Airey, John. 2009. "Science, Language and Literacy. Case Studies of Learning in Swedish University Physics". Doctoral thesis. Uppsala, Acta Universitatis Upsaliensis.

Alexander, Richard J. 2008. "'International' programmes in the German-speaking world and englishization: A critical analysis". In *Realizing Content and Language Integrating in Higher Education*, Robert & Zegers, Vera (eds.) 77-96. Maastricht: Maastricht University.

AlFallay, I. 2004. "The role of some selected psychological and personality traits of the rater in the accuracy of self- and peer-assessment". *System* 32, 407-425.

Ammon, Ulrich; McConnell, Grant. 2002. *English as an academic language in Europe: A survey of its use in teaching* (Duisburger Arbeiten zur Sprach- und Kulturwissenschaft 48). Bern: Peter Lang.

Andrade, Maureen Snow. 2006. "International students in English-speaking universities". *Journal of Research in International Education* 5, 131-154.

Ary, D.; Jacobs, L. C.; Razavieh, A. 1996. *Introduction to research in education*. Fort Worth: Harcourt Brace College.

Ash, Mitchell G. 2006. "Bachelor of What, Master of Whom? The Humboldt Myth and Historical Transformations of Higher Education in German-Speaking Europe and the US". *European Journal of Education* 41 (2), 245-267.

„Bachelor Studium Internationale Betriebswirtschaft“. Vienna: University of Vienna.

http://wirtschaftswissenschaften.univie.ac.at/fileadmin/user_upload/fak_wiwi_neu/studienangebot/bacibw08.pdf (12 September 2011)

Bachman, L.; Palmer, A. 1989. "The construct validation of self ratings of communicative language ability". *Language Testing* 6, 14-29.

Bachman, Lyle. 1990. *Fundamental Considerations in Language Testing*. (2nd edition). Oxford, Oxford University Press.

„Bakkalaureatsstudium Betriebswirtschaft“. Vienna: University of Vienna.
http://wirtschaftswissenschaften.univie.ac.at/fileadmin/user_upload/fak_wiwi_neu/studienangebot/bakkbw06.pdf (12 September 2011)

„Bakkalaureatsstudium Statistik“. Vienna: University of Vienna.
http://wirtschaftswissenschaften.univie.ac.at/fileadmin/user_upload/fak_wiwi_neu/studienangebot/bakkstat06.pdf (12 September 2011)

„Bakkalaureatsstudium Volkswirtschaftslehre“. Vienna: University of Vienna.
http://wirtschaftswissenschaften.univie.ac.at/fileadmin/user_upload/fak_wiwi_neu/studienangebot/bakkvwl06.pdf (12 September 2011)

Billow, G. 1989. “Towards an understanding of overseas students’ difficulties in lectures: A phenomenographic approach”. *Journal of Further and Higher Education* 13(3), 85–99.

Blue, G. 1988. “Self-assessment of listening comprehension”. *International Review of Applied Linguistics* 16, 149-156.

Blue, George. 1994. “Self-assessment of Foreign Language Skills: Does it work?” *CLE Working Papers* 131, 18-35.

Brandl, K. 2007. *Communicative language teaching in action: Putting principles to work*. NJ: Prentice Hall.

Buck, Gary. 2001. *Assessing listening*. Cambridge, Cambridge University Press.

Chang, Yu-Ying. 2010. “English-medium instruction for subject courses in tertiary education: Reactions from Taiwanese undergraduate students”. *Taiwan International ESP Journal* 2(1), 55-84.

Chen, Yuh-Mei. 2008. “Self Assessment of Oral Performance in the ELF University Classroom”. Taiwan: National Chung Cheng University.
http://filcccu.ccu.edu.tw/conference/2005conference_2/download/C10.pdf (11 May 2011).

Coleman, James A. 2006. “English-Medium Teaching in European Higher Education”. *Language Teaching* 39, 1-14.

Coonan, C.M. 2002. *La lingua stranieraveicolare*. Torino: UTET.

Costa, Francesca; Coleman, James A. 2010. “Integrating Content and Language in Higher Education in Italy”. *International CLIL Research Journal* 1(3), 19-29

Coyle, D. 2005. “Developing CLIL. Towards a Theory of Practice”. *APAC Monographs* 6, 5-29.

Coyle, Do; Hood, Philip; Marsh, David. 2010. *CLIL. Content and Language Integrated Learning*. Cambridge: Cambridge University Press

Crosier, David; Purser, Lewis; Smidt, Hanne. 2010. "Trends V: Universities shaping the European Higher Education Area". An EUA report. http://www.eua.be/fileadmin/user_upload/files/publications/final_trends_report_may_10.pdf (18 August 2011).

Dafouz Milne, E.; Núñez Perucha, B. 2010. "Metadiscursive devices in university lectures: A contrastive analysis of L1 and L2 teacher performance. In Dalton-Puffer, C.; Nikula, T; Smit, U. (eds.). *Language Use and Language Learning in CLIL Classrooms*. Amsterdam/Philadelphia: John Benjamins, 213-231.

Dalton-Puffer, Christiane. 2007. *Discourse in content and language integrated (CLIL) classrooms*. Amsterdam: John Benjamins Publishing Company.

Edwards, V. 2004. *Multilingualism in the English-speaking world. Pedigree of nations*. Malden MA: Blackwell.

Elley, W.B.; Mangubhai, F. 1983. "The impact of reading on second language learning". *Reading Research Quarterly* 19, 53-67.

"ENLU Closing conference – Nancy 8-9 April 2006. Workshop 5 – Medium of Instruction." www.celelc.org/docs/nancy_ws2_0.doc (12 September 2011).

European Commission. 1995. *White paper on education and training: teaching and learning – Towards the learning society*. http://europa.eu/documents/comm/white_papers/pdf/com95_590_en.pdf (1 March 2011)

Eurydice. 2004/05. "Content and Language Integrate Learning (CLIL) at School in Europe. Austria. National description 2004/05". Brussels: European Comission. http://www.htl.at/fileadmin/content/downloads/schwerpunktportale/Eurydike-Laenderbericht_CLIL_OEsterreich_05.pdf (14 December 2011).

Eurydice. 2005a. "Key data on teaching languages at school in Europe". Brussels: European Commission. http://eacea.ec.europa.eu/about/eurydice/documents/KDL2008_EN.pdf (14 December 2011).

Eurydice. 2005b. "Focus on the structure of higher education in Europe 2004/05". Brussels: European Comission. http://eacea.ec.europa.eu/education/eurydice/documents/thematic_reports/086EN.pdf (14 December 2011).

Flowerdew, John. 1994. *Academic Listening: Research Perspectives*. Cambridge, Cambridge University Press.

Fortanet, I. 2008. "Questions for debate in English medium lecturing in Spain". In *Realizing Content and Language Integrating in Higher Education*, Wilkinson, Robert & Zegers, Vera (eds.) 21-31. Maastricht: Maastricht University.

Graddol, D. 1997. *The future of English?* London: British Council.

Hellekjaer, G. O.; Wilkinson, R. 2003. "Trends in content learning through English at universities: a critical reflection. In Van Leeuwen, C.; Wilkinson, R. (eds.). *Multilingual approaches in University Education: Challenges and Practices*. Nijmegen: ValkhofPers, 81-102.

Hellekjær, Glenn Ole; Räsänen, Anne. 2010. "Introduction to Thematic Section: Lecture Comprehension and Learning in English-Medium Instruction in Higher Education". *Hermes – Journal of Language and Communication Studies* 45, 7-9.

Hellekjær, Glenn Ole; Westergaard, Marit R. 2003. "An exploratory survey of content learning through English at Nordic universities. In *Multilingual Approaches in University Education*, van Leeuwen and Wilkinson, Charles (eds.) 65-80. Maastricht: Universiteit Maastricht.

Hellekjær, Glenn Ole; Wilkinson, Robert. 2001. "Content and Language integrated Learning (CLIL) in Higher Education: An Issue Raising Workshop". In *Language for Special Purposes: Perspectives for the New Millennium*, Mayer, Felix (ed.) 398 - 408 . Gunter NarrVerlag, Tübingen.

Hellekjær, Glenn Ole. 2010. "Language Matters: Assessing lecture comprehension in English-medium higher education". In *Language Use and Language Learning in CLIL Classrooms*, Dalton-Puffer, Christiane, Nikula, Tarja and Smit, Ute (eds). 233-258. John Benjamins Publishing Company

Hellekjær, Glenn Ole. 2010. "Lecture comprehension in Norwegian and German English-medium higher education". *Hermes – Journal of Language and Communication Studies* 45, 11-27.

Hellevik, Ottar. 1999. *Forskningsmetode i sosiologi og statsvitenskap*. (6th edition.). Oslo, Universitetsforlaget.

"History and Significance". Vienna: Faculty of Business, Economics and Statistics. <http://wirtschaftswissenschaften.univie.ac.at/en/faculty/mission-statement/> (12 September 2011).

House, J. 2003. "English as a lingua franca: A threat to multilingualism?" *Journal of Sociolinguistics*, 7 (4), 556-578.

“Incoming students”. Vienna: Faculty of Business Economics and Statistics. <http://international.bwl.univie.ac.at/en/incoming/erasmus/language-requirements/> (14 February 2012).

„Information der Studienpräses Erläuterungen zum §8 studienrechtlicher Teil der Satzung „Prüfungsimmanente Lehrveranstaltungen“. 2008. Vienna: University of Vienna. http://www.univie.ac.at/nuhagphp/home/dateien/Erlaeuterungen_8_Endfassung_SPLProtokoll_03.10.08-1_2.pdf (14 February 2012).

Jexenflicker, Silvia. 2009. “A comparative study on differences in language output between mainstream and CLIL students at two Austrian colleges of engineering, crafts and arts”. http://othes.univie.ac.at/8422/1/2009-12-23_8551209.pdf (5 May 2011).

Karabinar, Selma. 2008. “Integrating Language and Content: Two models and their effects and the learners’ academic self-concept”. In *Realizing Content and Language Integrating in Higher Education*, Wilkinson, Robert & Zegers, Vera (eds.) 53-64. Maastricht: Maastricht University.

Klaassen, Renate. 2001. “The International University Curriculum: Challenges in English-Medium Engineering Education”. PhD thesis. Delft, Delft University of Technology.

Knight, J. 2008. *Higher Education in Turmoil: The Changing World of Internationalization*. Rotterdam: Sense Publ.

Kelo, M.; Teichler, U.; Wächter, B. (eds.) 2006. *EURODATA – Student mobility in European higher education*. Bonn: Lemmens Verlags- & Mediengesellschaft

Kruseman, A. N. 2003. “Preface”. In Van Leeuwen, C.; Wilkinson, R. (eds.). *Multilingual Approaches in University Education*. Maastricht: Universiteit Maastricht/UitgeverijValkhofPers, 7-10.

LeBlanc, R.; Painchaud, G. 1985. “Self-assessment as a second language placement instrument”. *TESOL Quarterly* 19(4), 673-687.

Lynch, Tony. 2011. “Academic listening in the 21st century: Reviewing a decade of research”. *Journal of English for Academic Purposes* 10, 79-88.

Marian, V. B.; Henrike K.; Kaushanskaya, M. 2007. “The Language Experience and Proficiency Questionnaire (LEAP-Q): Assessing Language Profiles in Bilinguals and Multilinguals”. *Journal of Speech, Language, and Hearing Research* 50, 940-967.

Marsh, D.; Maljers, A.; Hartiala, A.K. 2001. *Profiling European CLIL Classrooms: Language Open Doors*. University of Jyväskylä: Jyväskylä.

Marsh, David. 2002. "CLIL/Emile – The European Dimension: Actions, Trends and Foresight Potential". Finland, University of Jyväskylä. http://ec.europa.eu/languages/documents/doc491_en.pdf (1 March 2011)

Matz, C. M. 1999. "Administration of web versus paper surveys: Mode effects and response rates". Master's research paper. Chapel Hill: University of North Carolina.

Mehisto, Peeter; Marsh, David; Frigols, Maria Jesus. 2008. *Uncovering CLIL. Content and Language Integrated Learning in Bilingual and Multilingual Education*. Oxford: Macmillan

Mey, Jacob L.; Brown, Keith. 2009. *Concise Encyclopedia of Pragmatics*. (2nd edition). Elsevier/Sicence

Micola, Augusto RupÈrez; Bris, Arturo; Banal-EstaÒol, Albert. 2010. "TV or not TV? Subtitling and English skills". <http://www.econ.upf.edu/docs/papers/downloads/1156.pdf> (1 May 2011).

„Mitteilungsblatt der Universität Wien - 24. Stück – ausgegeben am 27.06.2011. 172. Curriculum für das Bachelorstudium Betriebswirtschaft (Version 2011)“. Vienna: University of Vienna. http://wirtschaftswissenschaften.univie.ac.at/fileadmin/user_upload/fak_wiwi_neu/studienangebot/BW_Bachelor_Version2011.pdf (12 September 2011).

Morell, T. 2004. "Interactive lecture discourse for university EFL students". *English for Specific Purposes* 19, 251-267.

Mulligan, Denise; Kirkpatrick, Andy. 2000. "How much do they understand? Lectures, students and comprehension". *Higher Education Research & Development* 19(3), 311-335.

„Ordentliche Studierende an öffentlichen Universitäten 1955-2011“. Austria: Statistik Austria. https://www.statistik.at/web_de/statistiken/bildung_und_kultur/formales_bildungswesen/universitaeten_studium/021631.html (12 January 2012)

Orsmond, P.; Merry, S.; Reiling, K. 1997. "A study in self-assessment: tutor and students' perception of performance criteria". *Assessment and Evaluation in Higher Education* 22(4), 357-369.

Oscarson, M. 1997. "Self-Assessment of Foreign and Second Language Proficiency". In

Clapham, C.; Corson, P. (eds.). *Language Testing and Assessment*. Dordrecht/Boston/London: Kluwer Academic Publishers, 175-187.

Patri, M. 2002. "The influence of peer feedback on self and peer-assessment of oral skills". *Language Testing* 19(2), 109-131.

"Pearson's Correlation Coefficient, r ". Bristol: University of the West England. <http://hsc.uwe.ac.uk/dataanalysis/quantinfasspear.asp> (14 January 2012).

Pechar, Hans; Pellert, Ada. 2004. "Austrian Universities under Pressure from Bologna". *European Journal of Education* 39 (3), 317-330.

Peterson, D.M. et al. 1999. "Contributions of international students and programs to campus diversity". *Directions for Student Services* 86, 67-77.

Phillipson, R. 2009. "English in Higher Education: Panacea or Pandemic?" *Angels on the English Speaking World* 9, 29-57.

"Proficiency in German". Vienna: University of Vienna. <http://studentpoint.univie.ac.at/en/application/voraussetzungen/knowledge-of-german/> (12 September 2011).

Räsänen, C. A.; Fortanet-Gómez, I. 2008. "Introduction: English for Specific Purposes after the Bologna Reform". In Fortanet-Gómez, I.; Räsänen, C. A. (eds.). *ESP in European Higher Education. Integrating Language and Content*. Amsterdam/Philadelphia: John Benjamins, 1-7.

Ritzen, J. 2004. "Across the bridge: Towards an international university". In *Integrating Content and Language. Meeting the challenge of a multilingual higher education*, Wilkinson, Robert. (ed.), Maastricht University Netherlands, 28-40.

Ross, S. 1998. "Self-assessment in second language testing: a meta-analysis and analysis of experiential factors". *Language Testing* 15(1), 1-20.

Rubio D. F.; Lirola M. M. 2010. "English as a foreign language in the EU". *European Journal of language policy* 2(1), 23-40.

Ruiz-Garrido, Miguel F.; Palmor-Silveira, Juan Carlos. 2008. "Content learning in business communication". In Fortanet-Gomez, Inmaculada; Räsänen, Christine A. (eds.). *ESP in European Higher Education. Integrating language and content*. Amsterdam: Benjamins, 147-161

Shadish, William R.; Cook, Thomas D.; Campbell, Donald T. 2002: *Experimental and Quasi-Experimental Designs for Generalized Causal Inference*. Boston: Houghton Mifflin.

Shen, Li-Bi; Tseng, Ching-Ya; Kuo, Shu-Wei; Su, Ying-Ju; Chen, Ming-Yuan. 2005. "A Preliminary Study of College Students' Out-of-Class English Learning Activities". *Chia-Nan Annual Bulletin* 31, 464-475.

Simpson, R. C.; Briggs, S. L.; Ovens, J.; Swales, J. M. 2002. *The Michigan corpus of academic spoken English*. Ann arbor. MI: The Regents of the University of Michigan.

Smit, U. 2003. "English as a Lingua Franca (ELF) as medium of learning in a Hotel Management educational program: An applied linguistics approach". *VIEWES Vienna English Working Papers* 12(2), 40-74. http://www.univie.ac.at/Anglistik/views/03_2/SMI_SGLE.PDF (14 January 2012).

Sprinthall, R. C. 2007. *Basic Statistical Analysis*. (8th ed.). Boston: Pearson

StatSoft, Inc. 2012. *Electronic Statistic Textbook*. Tulsa: Statsoft. <http://www.statsoft.com/textbook/nonparametric-statistics/> (14 August 2012).

„Studierende und Studienzulassungen nach Studienprogrammleitung und Studienrichtung“. Vienna: University of Vienna. http://studien-lehrwesen.univie.ac.at/fileadmin/user_upload/studienundlehrwesen/Statistische_Daten/studstat_72_2011S.pdf (12 September 2011).

Suvinity, Jaana. 2010. "Lecturers' questions and student perception of lecture comprehension". *English Studies* 6, 44-57.

Swales, J. 1990. *Genre Analysis*. Cambridge, Cambridge University Press.

Swales, J. M. 1990. *Genre analysis: English in academic and research settings*. Cambridge: Cambridge University Press.

"The European Higher Education Area". Austria: Austrian Federal Ministry of Science and Research. http://www.ond.vlaanderen.be/hogeronderwijs/bologna/documents/Bologna_leaflet_web.pdf (12 September 2011).

“The programmes of study of the Faculty of Business, Economics and Statistics”. Vienna: Faculty of Business Economics and Statistics. <http://wirtschaftswissenschaften.univie.ac.at/en/degree-programme/programmes-of-study> (12 September 2011)

Tomsic, M. L.; Hendel, D. D.; Matross, R. P. 2000. “A World Wide Web response to student satisfaction surveys: Comparisons using paper and Internet formats”. Paper presented at the 40th Annual Meeting of the Association for Institutional Research, Cincinnati, OH, May 21–24, 2000.

Törmänen, Terhi; Tuovinen, Mervi. 2000-02. “European Credit Transfer System: Information Package”. University of Oulu, Department of Geography. <http://www.oulu.fi/geography/study/international/geography.pdf> (18 August 2011)

Underwood, D.; Kim, H.; Matier, M. 2000. “To mail or to Web: Comparisons of survey response rates and respondent characteristics”. Paper presented at the 40th Annual Forum of the Association for Institutional Research, Cincinnati, OH, May 21–24, 2000.

Unterberger, B.; Wilhelmer, N. 2011. “English-medium education in economics and business studies: capturing the status quo at Austrian universities”. *ITL – International Journal of Applied Linguistics* 161, 90-110.

Vinke, Adriana A. 1995. “English as a medium of instruction in Dutch engineering education”. PhD thesis. Delft, Delft University of Technology.

Wilkinson, R. 2004. *Integrating Content and Language. Meeting the Challenge of Multilingual Higher Education*. Maastricht: Universitaire Pers Maastricht.

Wilkinson, Robert; Zegers, Vera. 2008. *Realizing Content and Language Integrating in Higher Education*. Maastricht: Maastricht University.

Wilkinson, Robert. 2005. “The impact of language on teaching content: Views from the content teacher”. Paper presented at a BMU conference, Helsinki. <http://www.palmenia.helsinki.fi/congress/bilingual2005/presentations/wilkinson.pdf> (18 August 2011)

Wolff, Dieter. 2007. “On the importance of CLIL in the context of the debate on plurilingual education in the European Union”, in Marsh, David. 2002. “CLIL/Emile – The European Dimension: Actions, Trends and Foresight Potential”. Finland, University of Jyväskylä. http://ec.europa.eu/languages/documents/doc491_en.pdf (1 March 2011)

Wu, W.S. 2006. "Students' attitude toward EMI: Using Chung Hua University as an example". *Journal of Education and Foreign Language and Literature*, 4, 67-84.

„Zahlen und Fakten“. Vienna: University of Vienna.
<http://www.univie.ac.at/universitaet/zahlen-und-fakten/> (12 September 2011).

Appendix

Questionnaires

Hellkjaer's questionnaire used for research in Norway¹¹

[No. _____] - do not fill in

Dear Student!

This anonymous questionnaire is part of a research project investigating lecture comprehension in non-language lectures taught in English in higher education. Your answers will help us learn more about students' lecture comprehension in these lectures.

- **Answer the questions as correctly as possible, and to the best of your ability even though you might not be quite certain that you remember correctly.**
- **If you are attending several courses in English, answer the questions on the basis of your general impression of these lectures.**
- **If you do not have courses in Norwegian/your mother tongue this semester, use your experience from previous semesters to answer.**

Thank you for your assistance!

Associate Professor Glenn Ole Hellekjaer g.o.hellekjar@ils.uio.no
Department of Teacher Education and School Development,
University of Oslo

1. Course _____
2. University/college _____

SOME QUESTIONS ABOUT YOUR BACKGROUND

3. Are you: ☐ Male ☐ Female
4. What is your first language ☐ Norwegian/Swedish/Danish ☐ English ☐ Other
5. Do you use English regularly in social situations: ☐ Yes ☐ No
6. Do you use English regularly in job related situations? ☐ Yes ☐ No

¹¹ The text from the questionnaire is from Hellekjaer (2010), only the formatting was changed

7. Did you attend school in Norway? ☐ Yes ☐ No
8. If yes to 7, what was the most advanced English course completed in Norwegian high school.
- ☐ First year course ☐ Second year course ☐ Third year course

Have you received any other forms of English instruction in high school? (You may give several answers)

9. ☐ Yes ☐ No Instruction in a non-language subject, for example History or Religion, in English?
10. ☐ Yes ☐ No High school in English speaking country (for 6 months or more)
11. ☐ Yes ☐ No Attended an English language high school, i.e. the International Baccalaureate?
12. How many English books do you read per year? (Give only one answer)
- ☐ None ☐ 1-3 ☐ 4-6 ☐ 7-12 ☐ 13 or more
13. How often do you read English periodicals, magazines or newspapers? (Give only one answer)
- ☐ Never ☐ Sometimes ☐ Monthly ☐ Weekly ☐ Daily
14. How often do you read English on the Internet? (Give only one answer)
- ☐ Never ☐ Sometimes ☐ Monthly ☐ Weekly ☐ Daily
15. How often do you watch English language movies, videos, or TV programs? (Give only one answer)
- ☐ Never ☐ Sometimes ☐ Monthly ☐ Weekly ☐ Daily
16. How often do you speak English? (Give only one answer)
- ☐ Never ☐ Sometimes ☐ Monthly ☐ Weekly ☐ Daily
17. How often do you write in [sic] English? (Give only one answer)
- ☐ Never ☐ Sometimes ☐ Monthly ☐ Weekly ☐ Daily

QUESTIONS ABOUT UNIVERSITY LEVEL STUDIES

18. Have you studied in an English speaking country while at college or university?
- ☐ No ☐ 1-6 months ☐ 6-12 months ☐ more than a year
19. How long have you studied so far?
- ☐ 1 year ☐ 2 years ☐ 3 years ☐ 4 years ☐ 5 years or more
20. Were any of your courses in English as a subject, such as English literature or grammar?
- ☐ Yes ☐ No

21. If yes to 20, please indicate how many credits of the subjects English have you completed (30 credits = 1 semester)

☐ 2-30 credits ☐ 31-60 credits ☐ 61-90 credits ☐ 91 credits or more

QUESTIONS ABOUT YOUR ATTENDING AN ENGLISH-MEDIUM COURSE OR PROGRAM

English Medium Instruction is the teaching of non-language subjects through English, such as Economics, Medicine or Political Science in English, to students for whom English is a foreign language. In this questionnaire I call these EMI courses/programs.

22. Have you attended an English Medium course before this semester?

☐ Yes ☐ No

Indicate your reasons for attending an English-Medium course:

23. ☐ Yes ☐ No I am/was an exchange student.

24. ☐ Yes ☐ No The course is part of an EMI program
with several subjects that are taught in English

25. ☐ Yes ☐ No To improve my English

26. ☐ Yes ☐ No I am/was interested in this specific course

27. ☐ Yes ☐ No Other reasons _____

28. How useful do you believe knowing English will be in your future career?

Not useful Very
at all useful
☐ 1 ☐ 2 ☐ 3 ☐ 4

29. Are you interested in working outside Norway/your own country in your future career?

Not interested Very
at all interested
☐ 1 ☐ 2 ☐ 3 ☐ 4

30. Are you interested in working in a job where English is the working language?

Not Very
at all interested
☐ 1 ☐ 2 ☐ 3 ☐ 4

31. Do you think knowing English is important when applying for new jobs?

Not Very
at all important
☐ 1 ☐ 2 ☐ 3 ☐ 4

32. Do you think having completed English Medium courses will give you an advantage when applying for a job?

No advantage at all A great advantage

☐ 1 ☐ 2 ☐ 3 ☐ 4

33. What is your opinion of the extra work involved in taking an English Medium course is worthwhile?

It is not worth the extra effort It is worth the extra effort

☐ 1 ☐ 2 ☐ 3 ☐ 4

QUESTIONS ABOUT YOUR UNDERSTANDING OF LECTURES IN YOUR FIRST LANGUAGE (SUCH AS NORWEGIAN). YOU MAY ANSWER ON THE BASIS OF LECTURES YOU HAVE HAD EARLIER.

34. How often do you **read in preparation for lectures** in Norwegian/your first language?

Never For every lecture

☐ 1 ☐ 2 ☐ 3 ☐ 4

35. Indicate on the scale **to what extent you find words and expressions** in the Norwegian/mother tongue lectures unfamiliar.

All words are **unfamiliar** All words are **familiar**

☐ 1 ☐ 2 ☐ 3 ☐ 4

36. Indicate on the scale **to what extent words and expressions are clearly pronounced and understandable** in Norwegian/mother tongue lectures.

All words are indistinctly pronounced All words are clearly pronounced

☐ 1 ☐ 2 ☐ 3 ☐ 4

37. Indicate on the scale **to what extent** do you experience that the lecturer in Norwegian/mother tongue lectures speaks **too fast**.

Too fast to understand I have no difficulties understanding

☐ 1 ☐ 2 ☐ 3 ☐ 4

38. Indicate on the scale how **often you want to ask about unfamiliar words and expressions** during Norwegian /mother tongue lectures.

All the time I never want to ask

☐ 1 ☐ 2 ☐ 3 ☐ 4

39. Indicate on the scale **to what extent you can follow the lecturer's line of thought** during Norwegian /mother tongue lectures.

The lecturer's line of thought is difficult to follow The lecturer's line of thought is easy to follow

☐ 1 ☐ 2 ☐ 3 ☐ 4

40. Indicate on the scale **to what extent you understand the content** of the Norwegian/mother tongue lectures.
- Impossible to understand Everything is understandable
- ☐ 1 ☐ 2 ☐ 3 ☐ 4
41. Indicate on the scale **to what extent the information** in the Norwegian/mother tongue lectures is presented **so quickly that it hinders your understanding**.
- Too much information I have no difficulties
- to understand understanding the information presented
- ☐ 1 ☐ 2 ☐ 3 ☐ 4
42. Indicate on the scale how **often** you want **to ask about unclear content** during Norwegian /mother tongue lectures.
- All the time I never want to ask
- ☐ 1 ☐ 2 ☐ 3 ☐ 4
43. Indicate on the scale **how important the lecturer's transparencies/Power Point Slides – or other visual aids are for your understanding** of Norwegian/mother tongue lectures.
- Very important Not important
- for my understanding for my understanding
- ☐ 1 ☐ 2 ☐ 3 ☐ 4
44. Indicate on the scale **how difficult you find taking notes** during Norwegian/mother tongue lectures.
- Impossible to take notes It is easy to take notes
- ☐ 1 ☐ 2 ☐ 3 ☐ 4
45. Indicate on the scale **if you get the chance to ask questions during and after** the Norwegian/mother tongue lectures.
- Difficult to ask questions Easy to ask questions
- ☐ 1 ☐ 2 ☐ 3 ☐ 4

QUESTIONS ABOUT YOUR UNDERSTANDING OF LECTURES IN ENGLISH

46. Indicate in percent **how much of the lectures are in English**: _____%
47. Indicate on the scale how often **you read in preparation for lectures in English**.
- Never For every lecture
- ☐ 1 ☐ 2 ☐ 3 ☐ 4
48. Indicate on the scale **to what extent you find words and expressions in the English language lectures unfamiliar**.
- All words are unfamiliar All words are familiar
- ☐ 1 ☐ 2 ☐ 3 ☐ 4

49. Indicate on the scale **to what extent words and expressions are clearly pronounced and understandable** in the English language lectures.
- All words are indistinctly pronounced All words are clearly pronounced
- ☐ 1 ☐ 2 ☐ 3 ☐ 4
50. Indicate on the scale to what extent to you experience **that the lecturer in English language lectures speaks too fast.**
- Too fast to understand I have no difficulties understanding
- ☐ 1 ☐ 2 ☐ 3 ☐ 4
51. Indicate on the scale how often you **want to ask about unfamiliar words and expressions during English language lectures.**
- All the time I never want to ask
- ☐ 1 ☐ 2 ☐ 3 ☐ 4
52. Indicate on the scale to what extent you can **follow the lecturer's line of thought during English** lectures.
- The lecturer's line of thought The lecturer's line of thought
Is difficult to follow is easy to follow
- ☐ 1 ☐ 2 ☐ 3 ☐ 4
53. Indicate on the scale **to what extent you understand the content of the English lectures.**
- Impossible to understand Everything is understandable
- ☐ 1 ☐ 2 ☐ 3 ☐ 4
54. Indicate on the scale **to what extent the information** in the English lectures is presented **so quickly** that it hinders your understanding.
- Too quickly to understand I have no difficulties understanding the information presented
- ☐ 1 ☐ 2 ☐ 3 ☐ 4
55. Indicate on the scale how often **you want to ask the lecturer about an unclear content** during English lectures.
- All the time I never want to ask
- ☐ 1 ☐ 2 ☐ 3 ☐ 4
56. Indicate on the scale **how important the lecturer's transparencies/Power Point slides – or other visual aids** are for your understanding of English lectures.
- Very important Not important
for my understanding for my understanding
- ☐ 1 ☐ 2 ☐ 3 ☐ 4

57. Indicate on the scale **how difficult you find taking notes** during English lectures.
- Impossible to take notes It is easy to take notes
- ☐ 1 ☐ 2 ☐ 3 ☐ 4
58. Indicate on the scale **if you get the chance to ask questions** during and after the lectures in English.
- Difficult to ask questions Easy to ask questions
- ☐ 1 ☐ 2 ☐ 3 ☐ 4
59. Indicate how much **work do you find** while attending a course in English compared to one in Norwegian/your first language.
- Just like in Norwegian/ Much more work than
your L1 in Norwegian/your L1
- ☐ 1 ☐ 2 ☐ 3 ☐ 4
60. Which language will/did you use for **oral examinations/presentations** in your English language course(s)?
- ☐ Norwegian/your mother tongue ☐ English
61. Which language will/did you use for **written examinations/papers** in your English language courses?
- ☐ Norwegian/your mother tongue ☐ English

IF YOU HAVE TIME TO ANSWER

62. What do you like best about your lectures in English? Answer in your own words (feel free to use the other side of the page):
- _____
- _____
63. What do you like the least about your lectures in English? Answer in your own words (feel free to use the other side of the page):
- _____
- _____
64. Do you have any other comments or things to add? Answer in your own words (feel free to use the other side of the page):
- _____
- _____

Questionnaire used in the present research study

No. _____ (do not fill in)

This anonymous questionnaire is part of a research project for a diploma thesis investigating lecture comprehension in non-language lectures taught in English in higher education. Your answers will help us learn more about students' lecture comprehension in these lectures.

- **Answer the questions as correctly as possible, and to the best of your ability even though you might not be quite certain that you remember correctly.**
- **If you are attending several courses in English, answer the questions on the basis of your general impression of these lectures.**
- **If you do not have courses in German/your mother tongue this semester, use your experience from previous semesters to answer.**

Thank you for your assistance!

Milena Cica

Student at the Faculty of Philological and Cultural Studies and the Faculty of Business, Economics and Statistics of the University of Vienna

1. Which subject(s) are you taking in English at present (Summer Term 2011)?

2. What is your field of study?

☐ IBA (IBWL) ☐ BA (BWL) ☐ Economics (VWL) ☐ Other

3. At which university/college are you studying?

☐ University of Vienna ☐ University of Economics (WU) ☐ Other

SOME QUESTIONS ABOUT YOUR BACKGROUND

4. Are you: ☐ Male ☐ Female

5. Is English your first language? ☐ Yes ☐ No

6. If NO to 5, please state your first language: _____

7. Do you use English regularly in social situations: ☐ Yes ☐ No

8. Do you use English regularly in job related situations? ☐ Yes ☐ No

9. Did you attend school in Austria? ☐ Yes ☐ No

10. If NO to 9, please state where you attended high school: _____

11. How old are you? _____
12. In which semester are you? _____

Have you received any other forms of English instruction in high school? (You may give several answers)

13. ☐ Yes ☐ No Instruction in a non-language subject,
for example Mathematics, in English?
14. ☐ Yes ☐ No High school in English speaking country (for
6 months or more)
15. ☐ Yes ☐ No Attended an English language high school,
i.e. the International Baccalaureate?
16. How many English books do you read per year? (Give only one answer)
- ☐ None ☐ 1-3 ☐ 4-6 ☐ 7-12 ☐ 13 or more
17. How often do you read English periodicals, magazines or newspapers? (Give only one answer)
- ☐ Never ☐ Sometimes ☐ Monthly ☐ Weekly ☐ Daily
18. How often do you read English on the Internet? (Give only one answer)
- ☐ Never ☐ Sometimes ☐ Monthly ☐ Weekly ☐ Daily
19. How often do you watch English language movies, videos, or TV programs? (Give only one answer)
- ☐ Never ☐ Sometimes ☐ Monthly ☐ Weekly ☐ Daily
20. How often do you speak English? (Give only one answer)
- ☐ Never ☐ Sometimes ☐ Monthly ☐ Weekly ☐ Daily
21. How often do you write in English? (Give only one answer)
- ☐ Never ☐ Sometimes ☐ Monthly ☐ Weekly ☐ Daily

QUESTIONS ABOUT UNIVERSITY LEVEL STUDIES

22. Have you studied in an English speaking country while at college or university?
- ☐ No ☐ 1-6 months ☐ 6-12 months ☐ more than a year
23. Were any of **your courses in English as a subject, such** as English literature or grammar?
- ☐ Yes ☐ No
24. If yes to 23, please indicate how many credits of the subjects English have you completed (30 credits = 1 semester)
- ☐ 2-30 credits ☐ 31-60 credits ☐ 61-90 credits ☐ 91 credits or more

English Medium Instruction is the teaching of non-language subjects through English, such as Economics, Medicine or Political Science in English, to students for whom English is a foreign language. In this questionnaire I call these English Medium (EM) courses.

☐ Yes ☐ No

26. ☐ Yes ☐ No I am/was an exchange student.

27. ☐ Yes ☐ No To improve my English

28. ☐ Yes ☐ No I am/was interested in this specific course

29. ☐ Yes ☐ No Other reasons _____

Not at all Very useful

☐ 1 ☐ 2 ☐ 3 ☐ 4

Not at all interested

1 2 3 4

Very interested

Not at all interested

Very interested

1 2 3 4

Not at all Very important

☐ 1 ☐ 2 ☐ 3 ☒ 4

No advantage at all A great advantage

☐ 1 ☐ 2 ☐ 3 ☐ 4

35. What is your opinion of the extra work in taking an English Medium course?

It is not worth	It is worth
the extra effort	the extra effort
<input type="checkbox"/> 1	<input type="checkbox"/> 2
<input type="checkbox"/> 3	<input type="checkbox"/> 4

QUESTIONS ABOUT YOUR UNDERSTANDING OF LECTURES IN YOUR FIRST LANGUAGE (SUCH AS GERMAN). YOU MAY ANSWER ON THE BASIS OF LECTURES YOU HAVE HAD EARLIER.

36. How often do you **read in preparation for lectures** in German/your first language?

Never	For every lecture
<input type="checkbox"/> 1	<input type="checkbox"/> 2
<input type="checkbox"/> 3	<input type="checkbox"/> 4

37. Indicate on the scale **to what extent you find words and expressions** in the German/mother tongue lectures unfamiliar.

All words are unfamiliar	All words are familiar
<input type="checkbox"/> 1	<input type="checkbox"/> 2
<input type="checkbox"/> 3	<input type="checkbox"/> 4

38. Indicate on the scale **to what extent words and expressions are clearly pronounced and understandable** in German/mother tongue lectures.

All words are	All words are
indistinctly pronounced	clearly pronounced
<input type="checkbox"/> 1	<input type="checkbox"/> 2
<input type="checkbox"/> 3	<input type="checkbox"/> 4

39. Indicate on the scale **to what extent** do you experience that the lecturer in German/mother tongue lectures speaks **too fast**.

Too fast to understand	I have no difficulties
understanding	
<input type="checkbox"/> 1	<input type="checkbox"/> 2
<input type="checkbox"/> 3	<input type="checkbox"/> 4

40. Indicate on the scale how **often you want to ask about unfamiliar words and expressions** during German/mother tongue lectures.

All the time	I never want to ask
<input type="checkbox"/> 1	<input type="checkbox"/> 2
<input type="checkbox"/> 3	<input type="checkbox"/> 4

41. Indicate on the scale **to what extent you can follow the lecturer's line of thought** during German/mother tongue lectures.

The lecturer's line of thought	The lecturer's line of thought
Is difficult to follow	is easy to follow
<input type="checkbox"/> 1	<input type="checkbox"/> 2
<input type="checkbox"/> 3	<input type="checkbox"/> 4

42. Indicate on the scale **to what extent you understand the content** of the German/mother tongue lectures.

Impossible to understand	Everything is understandable
<input type="checkbox"/> 1	<input type="checkbox"/> 2
<input type="checkbox"/> 3	<input type="checkbox"/> 4

43. Indicate on the scale **to what extent the information** in the German/mother tongue lectures is presented **so quickly that it hinders your understanding**.
- Too much information to understand presented I have no difficulties understanding the information
- ☐ 1 ☐ 2 ☐ 3 ☐ 4
44. Indicate on the scale how **often** you want **to ask about unclear content** during German/mother tongue lectures.
- All the time I never want to ask
- ☐ 1 ☐ 2 ☐ 3 ☐ 4
45. Indicate on the scale **how important the lecturer's transparencies/Power Point Slides – or other visual aids are for your understanding** of German/mother tongue lectures.
- Very important for my understanding Not important for my understanding
- ☐ 1 ☐ 2 ☐ 3 ☐ 4
46. Indicate on the scale **how difficult you find taking notes** during German/mother tongue lectures.
- Impossible to take notes It is easy to take notes
- ☐ 1 ☐ 2 ☐ 3 ☐ 4
47. Indicate on the scale **if you get the chance to ask questions during and after** the German/mother tongue lectures.
- Difficult to ask questions Easy to ask questions
- ☐ 1 ☐ 2 ☐ 3 ☐ 4

QUESTIONS ABOUT YOUR UNDERSTANDING OF LECTURES IN ENGLISH

48. If you have the chance **to choose** between a lecture held in English and a lecture held in German/mother tongue, how often do you choose **the one held in English**?
- Never Always
- ☐ 1 ☐ 2 ☐ 3 ☐ 4
49. Indicate on the scale how **often** you **read** in preparation for lectures in English.
- Never For every lecture
- ☐ 1 ☐ 2 ☐ 3 ☐ 4
50. Indicate on the scale **to what extent you find words and expressions** in the English language lectures unfamiliar.
- All words are **unfamiliar** All words are **familiar**
- ☐ 1 ☐ 2 ☐ 3 ☐ 4

51. Indicate on the scale **to what extent words and expressions are clearly pronounced and understandable** in the English language lectures.

All words are indistinctly pronounced All words are clearly pronounced

☐ 1 ☐ 2 ☐ 3 ☐ 4

52. Indicate on the scale **to what extent** to you experience that the lecturer in English language lectures speaks **too fast**.

Too fast to understand I have no difficulties understanding

☐ 1 ☐ 2 ☐ 3 ☐ 4

53. Indicate on the scale how **often** you want **to ask about unfamiliar words and expressions** during English language lectures.

All the time I never want to ask

☐ 1 ☐ 2 ☐ 3 ☐ 4

54. Indicate on the scale **to what extent you can follow the lecturer's line of thought** during English lectures.

The lecturer's line of thought The lecturer's line of thought
Is difficult to follow is easy to follow

☐ 1 ☐ 2 ☐ 3 ☐ 4

55. Indicate on the scale **to what extent you understand the content** of the English lectures.

Impossible to understand Everything is understandable

☐ 1 ☐ 2 ☐ 3 ☐ 4

56. Indicate on the scale **to what extent the information** in the English lectures is presented **so quickly that it hinders your understanding**.

Too quickly to understand I have no difficulties understanding the information presented

☐ 1 ☐ 2 ☐ 3 ☐ 4

57. Indicate on the scale how **often** you want to ask the lecturer about an **unclear content** during English lectures.

All the time I never want to ask

☐ 1 ☐ 2 ☐ 3 ☐ 4

58. Indicate on the scale **how important the lecturer's transparencies/Power Point slides – or other visual aids are for your understanding** of English lectures.

Very important Not important
for my understanding for my understanding

☐ 1 ☐ 2 ☐ 3 ☐ 4

59. Indicate on the scale **how difficult you find taking notes** during English lectures.
- Impossible to take notes It is easy to take notes
- ☐ 1 ☐ 2 ☐ 3 ☐ 4
60. Indicate on the scale **if you get the chance to ask questions during and after** the lectures in English.
- Difficult to ask questions Easy to ask questions
- ☐ 1 ☐ 2 ☐ 3 ☐ 4
61. Indicate on the scale how much **time and work you invest** while attending a course in English compared to one in German/your first language.
- Just like in German/
your mother tongue Much more time and work than
in German/your mother tongue
- ☐ 1 ☐ 2 ☐ 3 ☐ 4
62. Which language will/did you use for **oral** examinations/presentations in your English language course(s)?
- ☐ German/your mother tongue ☐ English
63. Which language will/did you use for **written** examinations in your English language courses?
- ☐ German/your mother tongue ☐ English

IF YOU HAVE TIME TO ANSWER

64. What do you like most about your lectures in English? Answer in your own words (feel free to use the other side of the page):
- _____
- _____
65. What do you like the least about your lectures in English? Answer in your own words (feel free to use the other side of the page):
- _____
- _____
66. Do you have any other comments or things to add? Answer in your own words (feel free to use the other side of the page):
- _____
- _____

Other reasons for attending EM lectures

“My university has mandatory subjects that you can only take in English (Uni: University of Vienna, degree programme: IBA)”

“only English available”

“it was part of the curricula”

“to learn”

“I had to”

“no other option”

“no other possibility”

“easier than german”

“I understand/speak/write english better than german”

“Prefer to learn the eng. Terminology”

“It was a coincidence”

“I had to”

“It was obligatory”

“I am better at English than German”

“I have to”

“HAD TO PASS THAT COURSE”

“better comprehension than in German”

“DUTY”

“I had to”

“No course in German”

“I had to”

“I had to”

“only teached in english”

“Mandatory”

“had to do it”

“PFLICHT”

“duty”

Likes, Dislikes and Comments about EM lectures

What do you like most about your lectures in English?

“I really liked the articles (from Oxford Uni) in Business English 2, furthermore I enjoyed the slides in Micro & Macroeconomics”

“It’s a challenge because it’s more difficult; plus I like to improve my English”

“that I can learn more words, especially business voc”

“as english is very important in business today it is necessary to extend your english knowledge”

“To extend my vocabulary knowledge; “play” with the language”

“English 😊”

“They are easy to understand than german; Everything is clear”

“Sentence structure is simpler. Terminology is internationally used”

“I am very comfortable with English”

“Experience with the language. Always a fresh up for my skills”

“New content + interesting, very nicely explained”

“speaking English”

“Gives me the opportunity to learn the language and refresh it”

“They are easier to pass”

“you need less words to express, often easier than in German”

“Sometimes teacher’s use easy English in the lecture so that everything is quite clear”

“The simplicity of the language, easier to follow than for example in German”

“using the language”

“I feel very comfortable with english, therefore I like lectures in English 😊”

“get used to English terms”

“Usually teachers are easier understood. They talk slowly”

“Erklärungen sind gut und verständlich”

“the explanation of teacher”

“slow, clear english, -> it’s easier to express the idea in english”

“easy as German; better understanding of English as business language”

“It is more understandable than German for me”

“That I can learn and hear more often the language”

“of international use”

“When they’r done”

“well-organized, easy to understand”

“That they speak clearly”

“more challenging”

“interesting topics”

“That it is in English and therefore better to understand”

“Kind of swimming in another ocean”

“IMPROVING MY ENGLISH”

“Improve my english”

“knowledge of new vocabulary”

“I understand it better than German”

“As far as german is not my mother tongue, but the 2nd foreign language I prefer to read and prepare myself for the course reading English books”

“To use an foreign language”

“for practicing my English skills”

“help improve my English knowledge – vocabulary, grammar, idioms...”

“The using and practicing of the language”

“I feel that courses in english are presented more clearly because English as a language is “easier” than German”

What do you like the least about your lectures in English?

"I absolutely hated it when the professor had a bad, hardly understandable pronunciation.

"Unclear pronunciation, bad English"

"Not easy to write information during presentation"

"Readings"

"Inappropriate language skills of the lecturer"

"Lecturers, who don't speak good English, Don't know the appropriate words in English"

"Sometimes the texts were too difficult; as exam the questions are sometimes asked with difficult vocabulary"

"I think not all the teachers here speaks a really good English"

"Professor's bad pronunciation sometimes"

"When the lecturer doesn't speak English in an understandable way"

"Professors have terrible pronunciation"

"Poor English of the teacher"

"Monologue (but possible to ask.)"

"Native speakers as class teacher"

"homework"

"Some professors that are not able to speak fluently or pronaunciate!"

"pronunciation of professors"

"Some Prof. don't have a very nice accent and makes it sometimes a bit difficult to understand what they are actually talking about"

"Non native lecturers"

"accent of german <some> teachers"

"That some of the lecturers are not speaking as good as natives do"

"That the teacher is speaking and writing too fast"

"The teachers"

“Many lectures are held from profs who can not really speak english very well”

“Austrian accent of the professors”

“Lots of homework”

“If the teacher can’t speak proper English and has bad pronunciation”

“bad lectures”

“The bad English of the profs or at least most of the profs”

“I don’t like lectures in English, cause the teachers can’t speak well -> so I don’t understand. I can’t understand the teachers”

“words that I don’t understand”

“accent of some profs”

“Some professors are very bad in English”

“Can’t tell, as far as I prefer English in comparison to german”

“Som lectors don’t speak good english”

“Non nativ speakers”

“when the professor doesn’t speak/know English properly”

“That the tutor is not capable of speaking English”

“That the professors don’t speak good english and it is therefore hard/annoying to listen”

Do you have any other comments or things to add?

“In my opinion BE¹² courses were too easy and not very effective as far as learning real BE. They should be more intense.”

“Considering the new BA¹³programmes it would be good to offer more courses in English, some more English students could come to Vienna”

“Very interesting for me: English popular”

¹²Probably standig for Business English

¹³Business and Administration

“If you study IBW¹⁴, I think it is important to have lectures in English too! This way you can improve or maintain your English, so when you finish your studys you can work internationally and cooperate with international firms!”

“English books are more interesting”

“Thanks.”

“English should be the main language”

“I wish we had more courses in English in BWL Programm.”

“Filek-Gauster is cool”

“check Professor’s knowledge before giving him a lecture in a foreign language”

¹⁴Internationale Betriebswirtschaft

Abstract

An educational approach in which a foreign language is used as a medium of instruction has been applied for thousands of years. In the 21st century Europe, English has become the dominant language of instruction in schools and universities across the continent. The dominance of English in European education has been fueled by the processes of globalization and internationalization.

The present thesis seeks to investigate the reasons behind the implementation of English-medium instruction (EMI) at European higher-education institutions. In particular, the following reasons are discussed in detail: 1) CLIL, 2) internationalization and the market in international students, 3) student and staff mobility, 4) teaching and research materials, and 5) graduate employability. Furthermore, the relationship between the 1999 Bologna process and EMI is explained, as it is claimed that the Bologna process has paved the way to the increased number of lectures in English in European higher education programmes.

The implementation of EMI has been increasingly popular in economics and business studies. The present thesis presents the implementation of EMI at the Faculty of Business, Economics and Statistics after the educational reform in Austria, following the Bologna Declaration.

Further, this thesis includes a report on empirical research conducted at this institution, which focuses on the assessment of students' lecture comprehension. The research aims at investigating whether university-level students experience difficulties with EM instruction, and if so, to what extent. It does so by comparing different aspects of lecture comprehension in English compared to first language (L1).

Owing to the findings indicating that students experience difficulties with particular aspects of EM instruction to a certain degree, it is argued that the quality of university lectures may be worsened when the instruction takes place in a foreign language such as English.

The findings of the present research further imply that students experience the same difficulties in lecture comprehension also when L1 is used as a medium of instruction, only to a different (slightly smaller) extent. It is therefore recommended that the general quality of lectures should be improved, regardless of the language of instruction.

With regard to EMI in particular, recommendations for the improvement range from working on improving students' language proficiency, over to suggestions about teaching materials and lecture structure as such, and finally to suggestions about improving lecturers' language proficiency and their rhetoric and communication skills. Finally, it is claimed that there is a need for increased cooperation between language specialists and content lecturers for improving the quality of EMI as a whole.

Abstract in German

Der Gebrauch einer Fremdsprache als didaktisches Mittel und Gewand der Lehre ist bereits seit der Frühzeit Gang und Gäbe. Im Europa des 21ten Jahrhunderts wurde Englisch die vorherrschende Sprache der Didaktik an Schulen und Universitäten auf dem ganzen Kontinent. Diese Vorherrschaft des Englischen in der Bildung wurde vorangetrieben durch die Prozesse der Globalisierung und der Internationalisierung.

Ziel der vorliegenden Arbeit ist es die Gründe für die Implementierung von Englisch als Arbeitssprache (EAA) an höheren europäischen Bildungseinrichtungen herauszuarbeiten. Im Besonderen sollen folgende Gründe dafür genauer betrachtet werden: 1) CLIL, 2) Internationalisierung und der Markt für höhere Bildung für internationale Studierende, sowie 3) die Mobilität von Studierenden und Universitätsangestellten, und 4) Lehr- und Forschungsmaterialien sowie 5) die Integrierbarkeit von AbsolventInnen auf dem Arbeitsmarkt. Darüberhinaus wird die Beziehung zwischen dem 1999 initiierten Bologna Prozess und EAA erklärt. Grund hierfür ist die Arbeitshypothese, dass der Bologna Prozess den Weg geebnet habe für die erhöhte Anzahl von Lehrveranstaltungen auf English in höheren europäischen Bildungseinrichtungen.

Die Implementierung von EAA wurde und wird vor allem in den Wirtschaftswissenschaften in zunehmendem Ausmaß praktiziert. Die vorliegende Arbeit untersucht die Implementierung von EAA an der Fakultät für Wirtschaftswissenschaften der Universität Wien, die im Zuge der österreichischen Bildungsreform im Anschluss an Bologna verstärkt durchgeführt wurde.

Des weiteren enthält die vorliegende Arbeit einen empirischen Forschungsbericht über die an der Fakultät für Wirtschaftswissenschaften

durchgeführte Forschung. Diese Forschung konzentriert sich auf die Feststellung des Unterrichtsverständnisses der Studierenden. Das Forschungsziel ist die Klärung der Frage ob Universitätsstudierende Schwierigkeiten mit EAA haben und falls ja, in welchem Ausmaß. Dies geschieht indem verschiedene Aspekte des Unterrichtsverständnisses mit EAA mit dem Unterrichtsverständnis in der Muttersprache verglichen werden.

Die Forschungsergebnisse belegen, dass die Studierenden mit bestimmten Aspekten von EAA Schwierigkeiten haben. Abhängig von dem Ausmaß dieser Schwierigkeiten wird argumentiert, dass die Qualität der Lehrveranstaltungen verschlechtert werden kann, wenn die Lehrveranstaltung in einer Fremdsprache wie beispielsweise Englisch durchgeführt wird.

Die Forschungsergebnisse implizieren außerdem, dass die Studierenden die gleichen, lediglich geringfügig schwächer ausgeprägten Schwierigkeiten im Unterrichtsverständnis haben wenn die Muttersprache als Lehrsprache verwendet wird. Deshalb wird empfohlen, dass die allgemeine Qualität der Lehrveranstaltungen von der Unterrichtssprache unabhängig, verbessert werden sollte.

Empfehlungen zur Verbesserung des Unterrichtsverständnisses mit EAA reichen von Maßnahmen zur Verbesserung der Sprachkompetenz der Studierenden, über Vorschläge zur Veränderung von Unterrichtsmaterialien und der Struktur der Lehrveranstaltungen. Auch werden spezifische Maßnahmen vorgeschlagen um die Sprachkompetenz und die rhetorischen und kommunikativen Fähigkeiten der Lehrenden zu verbessern. Schließlich werden die Forschungsergebnisse dahingehend interpretiert, dass ein Bedarf zur erhöhten Zusammenarbeit zwischen linguistischen Fachkräften und Lehrenden zum Zwecke der Qualitätsverbesserung von Lehrveranstaltungen besteht.

Author's Curriculum Vitae

Milena Čiča

EDUCATION

University of Vienna, Vienna, Austria since 2007
Business Administration (Bachelor's Programme)

University of Vienna, Vienna, Austria since 2006
English and American Studies (Diploma Programme)

Druga Gimnazija Maribor, Slovenia 2004 - 2006
International Baccalaureate Program IBO (Diploma Programme)

Filoloska Gimnazija, Belgrade, Serbia 2002 - 2004

COMMUNITY & YOUTH WORK

Austrian National Student Union: Department for Social Affairs 2010 - 2011
Student Union at the University of Vienna: Accounting Department since 2012
Austrian Chamber of Labor: Department for Educational Policy since 2011
(experimental games trainer)

PROJECTS

“Audio-guided Shopping Tour” – Workshop on Consumption, Production and Advertizing
Development of teaching materials and the storyline for audio tracks 2012

LANGUAGE SKILLS

Languages:

Serbian/Croatian: native; English: fluent; German: fluent; Spanish & Slovenian – intermediate;
