

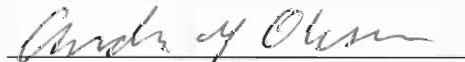
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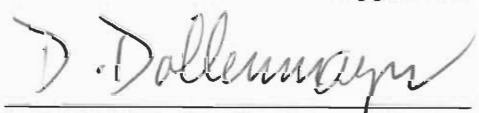
ENGLISH AS THE TEACHING LANGUAGE IN GERMAN-SPEAKING
TECHNICAL UNIVERSITIES

An Interactive Qualifying Project Report
submitted to the Faculty of
WORCESTER POLYTECHNIC INSTITUTE
in partial fulfillment of the requirements for the
Degree of Bachelor of Science
by


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Approved:


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2 INTRODUCTION

2.1 Statement of thesis

The objective of this paper is to explore the phenomenon of courses being taught in English at German-speaking technical universities. I used a survey of professors in Germany, Austria, and Switzerland who have taught at least one course in English. I also researched the various websites of universities in these countries, looking for content available in English. I used this data to find out how wide-spread this phenomenon is.

This paper takes the data and uses it to examine the overarching implications of English, both outside and inside of the German-speaking world, and both outside and inside of academia.

2.2 The rise of English as an international *lingua franca*

The British Empire is the first reason that English is so widespread today, followed by the head start in technology by America coupled with the advent of the Internet.

The British colonized far and wide—it was said that the sun never sets on the British Empire. This was, for little while anyway, literally true. At the end of the 19th and beginning of the 20th centuries, the British Empire consisted of about one quarter of the world's people and area. A common language, brought by the British Imperial rule, linked people from all continents—Philadelphia to Perth, Hong Kong to Casablanca.

The Empire has long since collapsed, but it has left a mark in the form of language on its former colonies. For example, one of India's official languages is still English—a relic of the time when it was a British colony.

But the British only started the trend. The laissez-faire approach of the United States during the Industrial Revolution and afterward allowed the country to become a world leader in technological advancement. Aviation was born in the United States, leaving the official language of flying, obviously requiring a world standard, to English.

The first general-purpose computer, ENIAC, was invented in 1943 by the American company IBM. Many technical advances thereafter were made by Americans. The first computer programming language was based on English. Anyone wanting to use computers in the early days needed to speak English, the language of its inventor.

The rise of the Internet in the 1980s and 1990s, though it was technically invented by a Finnish man [12], was largely funded by the American government. In the early, formative years, the Internet was held in the hands of English speakers, as a tool for English speakers. Although the trend is moving toward other languages, the overwhelming majority of the Internet is still in English.

A more current aspect in the trend toward English is American popular culture, which is, for whatever reason, wildly popular around the world. American movies dominate foreign theaters; the newest American pop sensation is always widely known across the world. Europeans are inundated with American culture. It has been my experience, having spent a year abroad in Zurich, Switzerland, that English is ubiquitous. American songs play on the radio; it is very trendy for commercials and advertisements to contain at least a few words of English.

These phenomena are only illustrative of the true momentum of the movement toward English as an international language. Many more facets of technology, science, and society have been affected in the same way.

2.3 An overview of statistics

English is the most widely spoken language in Europe. According to the Special Eurobarometer Report 54 “Europeans and Languages,” 40.5% of Europeans speak English as either a first or second language. Second to English with less than half as many speakers was French, at 19.2%.

Knowledge of English is also widely valued by the people. An impressive 75.2% believe that English is useful to know. The Eurobarometer also says, “71% of Europeans consider that everyone in the European Union should be able to speak one European language in addition to their mother tongue. Almost the same proportion of respondents agrees that this should be English.” [4]

But there is also a feeling, mostly by people specifically concerned about national cultures and literatures, that English could be detrimental to the European Community. It has the power to erode national cultures, which is a major concern in this day of European unification. The loss of national currencies and borders leaves nations with ever fewer concrete national symbols. Language is one of the major remaining ethnic and national unifiers. There is a society in many European countries dedicated to preserving language, for example Germany has Die Gesellschaft für deutsche Sprache [7].

Therefore, it is official policy of the European Union that anyone shall be able to write to European Union officials in any of the eleven languages of the EU, and expect an answer in the same language. Also, any laws should be available in any of the eleven languages. This makes for a difficult government, one which spends a large amount of money on translation.

Fortunately, academia is not bound by such laws, and may publish journals and textbooks in any language. English is the overwhelming language of choice for journals. For example, both the International Journal of Electronics and Communications [15] and the European Journal of Protistology [14], while published in Germany, are printed in English.

It is interesting to note that these two journals cover vastly different topics and have vastly different audiences—the International Journal of Electronics and Communications is very general, while the European Journal of Protistology covers a very specific subset of biology.

3 BACKGROUND

3.1 Reasoning behind teaching in English

There are several reasons a professor at a non-English-speaking university would want to teach in English. The results of the survey (see Section 4.2) show that German-speaking professors who teach in English do so for two main reasons: first, out of a feeling that their students must speak English to succeed in scientific disciplines, and second, some of their students simply do not speak German well enough. Another, though less commonly cited, factor is pressure from the University to diversify.

3.1.1 English the lingua franca of technology

English is the de facto language of technology. Therefore, a professor may feel that students should not only be fluent in English, but also trained in using it where they will need to in the future—technological subjects.

Much research, especially on more focused topics, can only be done in English, as journal texts are often available in that language exclusively. Also, when several scientists with different mother tongues come together, it is easiest if one language can be used, one language that all parties are familiar with, and in which they are comfortable talking about technical subjects, which are littered with jargon. In Europe, it is highly likely that this common language will be English.

3.1.2 Necessary experience for German students

It may also be that universities are making an effort to be more international. The ever-increasing importance of a “globalization” makes it possible to create a more diversified and international student body. The unification of Europe is just a small part of it.

Globalization widens the pool of candidates that the university may choose from and can increase the importance and profile of the school. Quite simply, universities risk becoming obsolete if they do not adapt to modern times.

The most obvious way to make a university more appealing to international students is by offering courses in a language that is already understood, and that language in many cases is English. Not only is English spoken as a first language by people of English-speaking countries, but also India, Pakistan, Korea, Vietnam, South Africa, et cetera.

Not everyone wants to learn German simply to spend a year abroad at the Technische Universität München. This is even more of a problem at, for example, Kungliga Tekniska Hogskolan in Stockholm. Swedish is a language spoken by only 9 million people; it is largely unknown outside of Sweden. Therefore a student might not deem it a useful enough language to warrant learning it simply to study at the Kungliga Tekniska Hogskolan, especially if a course in English is offered somewhere else.

Another method universities have for making themselves more appealing internationally is founding “international universities.” These universities are geared directly toward international students, and the language of choice is often English. One such university, the International University Bremen, is in a partnership with Rice

University. [11] It is a school in Germany, but which is internationally-oriented, and whose primary language of instruction and campus communication is English. Related, universities are starting to branch out and start international campuses in places like Jakarta, Singapore, Russia, Turkey, and Mexico. [9] Often, the language of choice for these campuses is English.

3.2 EU trends/policies

3.2.1 ELC – multi/plurilingualism

The European Language Commission (ELC), has a strong desire to promote linguistic pluralism in the European Community. To this end, they have suggested that all European universities encourage students to become fluent in at least two languages in addition to their mother tongue. [5]

Currently less than half of all Europeans can hold a conversation in English, while 89 % of [university] students have learnt it. Generalized English is thus far from being the practical multipurpose language that it is claimed to be. Furthermore, if it serves immediate communication purposes, it cannot function as the language used when living in a country which has another language ... English as a “*lingua franca*” maintains the confusion between a language necessary for a certain political (in particular that of the European institutions), economic and scientific level, and a language necessary for interaction among the citizens themselves. [ibid.]

There is a growing fear that dependence on English will have two problematic side-effects. First, the ELC clearly feels that there is a growing divide between students,

the vast majority of whom have learned English, and typical European citizens.

Secondly, there is a potential loss of national identity with the adoption of an “international language.”

Unfortunately for the ELC, not all Europeans want to learn so many foreign languages. According to the Special Eurobarometer Report 54 “Europeans and Languages” [ibid.] only 32.4% of Europeans agreed with the statement “Everyone in the European Union should be able to speak two European Union languages in addition to their mother tongue.” 69.4% of Europeans did, however, agree with the statement “Everyone in the European Union should speak English.”

This clearly shows that while English is frowned upon by linguists, the average European has a conception that the language will ease life in Europe. It would simply be easier for all peoples to become fluent in one foreign language rather than two.

English may be acceptable for use in an academic setting, as a common language between professionals, but it could never, and should never, be adopted for daily use in non-English-speaking countries. Therefore all students should become fluent in at least one other foreign language.

One of the better ways to do this is to promote teaching in other languages—through guest lecturers, texts and journals in other languages, etc. They advise again against a heavy dependence on English, as it can hurt actual language diversity and true plurilingualism.

It is nevertheless important to underline that the internationalisation of universities or their desire to internationalise, is leading them to provide more and more courses in English, thus risking to reduce even the very idea of plurilingual education to the mere integration of English; the

objective being, on the contrary, to promote an effective plurilingualism involving greater language diversity. [ibid.]

The European Language Commission here is warning against dependence on English, and underlining the difference between promoting actual plurilingualism and promoting English. It is easy to fall into a pattern of simply offering courses in English and saying that one is plurilinguistic, but in fact these two courses of action—being plurilinguistic and using English—are done for opposite reasons. A university should be plurilinguistic to promote diversity and uphold national cultures. Universities teach in English to attract more international students and homogenize themselves across Europe and the world.

3.2.2 Rise of BS/MS – BA/MA

One of the most noteworthy and current issues in English teaching is the Bachelor of Science/Master of Science – Bachelor of Arts/Master of Arts (BS/MS – BA/MA) programs that are starting to be offered at German-speaking universities. Most of Europe uses a *Diplom/Doctorate* system. There have been plans to move to the American BS/MS – BA/MA system—another sign that an internationalization of universities is occurring.

The general European method of higher education is similar to the American system, but differs on one key point. There are two degrees granted, as compared to the American three: *Diplom* after about five years, and *Doctorate* after an additional two. The Diploma falls somewhere between the American Bachelor of Science or Arts (B.S.

or B.A.) and Master of Science or Arts (M.S. or M.A.) degrees, while the *Doctorate* is comparable with the Doctorate of Philosophy (Ph.D.).

There is a trend toward offering M.S. or M.A. and Ph.D. courses entirely in English, in an attempt to win international graduate students and their research grants. For example, the Fachhochschule München offers an electrical engineering graduate course, for Masters Degrees or Ph.D.s, entirely in English.

The ETH in Zurich, along with several other universities including Frankfurt A.M., Leipzig and the Paul Scherrer Institute in Wuerenlingen, is currently working on a plan to move more traditional courses of study to the BS/MS program over the *Diplom/Doktorat* system currently in use. [3] The system is currently an option for Electrical Engineering at the ETH, with hope for a more sweeping plan in the near future.

3.3 Weighing the costs and benefits

There is still much debate as to which route the European Community should choose—more toward or away from English. Both sides have strong cases, and there is no answer that is easily identifiable as correct.

3.3.1 Benefits

English has many immediate benefits to a university, the most notable of which is that it draws international students. It has, however, much broader implications. It has the highest potential impact on technical society in its ability to bring the ideas of more peoples together. It is comparable to the SI system of measurements. It eases the

transference of ideas, makes conversation more feasible, and allows scientists to pull from a much larger pool of literature than would otherwise be available.

3.3.2 Costs

Unfortunately, English also has the power to undermine cultures. As it grows, other languages are used less. As those languages are slowly lost, so are cultures, arts, and general diversity.

Also, university students are much more likely to speak English well than an average European. The negative impact is two-fold. An international language that is only spoken by the intellectual elite has a much more limited use on a day-to-day basis than many proponents claim. Secondly, it fosters a gap between intellectual classes.

4 STATISTICS

4.1 Research

4.1.1 Official university policies

Teaching in foreign languages, English

The official policy of the *Eidgenössische Technische Hochschule Zürich* (ETHZ), or the Swiss Federal Institute of Technology Zurich, allows professors to teach in German, French, or English. In practice, a professor will often teach in any language explicitly requested by students. Specifically, my experience has been that a professor will teach a higher level course (third year or above) in English if a student requests it. For example, while in Zurich at the ETHZ, I took a course in reactor design, which would normally be taught in German. The professor was aware that I was an American exchange student. He asked if I would like to have the course in English. None of the other students objected, so I agreed. This is not official policy, but encouraged by the University in an attempt to woo foreign students.

Foreign students

The ETHZ, according to an official internal census [2], has had a level percentage of students over the past seven years. Foreign *Diplomstudierende*, European equivalents of undergraduates, has been decreasing, while foreign *Nachdiplomstudierende*, graduate students, has been increasing (see Table 4.1~~Table 4.1~~). The number of foreign

Diplomstudierende, Ph.D. students, has been steadily increasing, to the point where more than half is foreign.

This evaluation has been borne out by the survey I conducted (see Section 4.2). A large percentage of respondents reported teaching courses in English due to an increasing demand by the University to cater to foreign students, especially foreign graduate and doctoral students.

Foreign graduate students are highly desirable for a university. Graduate students bring research, which brings both money and reputation to a university.

	1995	1999	2000
Undergraduates (<i>Diplomstudierende</i>)	18.70%	15.10%	15.10%
Graduate Students (<i>Nachdiplomstudierende</i>)	23.50%	21.10%	36.60%
Ph.D. Students (<i>Doktorierende</i>)	44.60%	48.00%	51.60%
Total	24.00%	21.40%	24.50%

Table 4.1 ETHZ Foreign Student Percentage Breakdown

4.2 Survey

4.2.1 Methodology

I used a survey of professors to help explore current trends in English teaching. I reviewed the internet sites of various universities in Germany, Austria, and Switzerland and compiled a list of professors who were cited as having taught courses in English. Forty-two professors were mailed questionnaires, and eighteen replied. The raw data of these results can be found in Appendix I.

4.2.2 Results

As can be seen from Table 4.2~~Table 4.2~~, the majority of professors report that less than one quarter of their lectures are taught in English. Also, the majority claims that they have been teaching in English for less than two years. Far fewer report three to five years, and only one respondent reports teaching in English for five to ten years. Interestingly, 15% of respondents claim they have been teaching in English for more than ten years. This curve, with a large dip in the middle, suggests that there is a core of professors who were teaching courses all along. But there is a sharply increasing number of professors who started teaching courses in English in the past few years.

This implies that English has long been used as a language in scientific academia, but it has recently become much more popular and widespread.

	Option	PERCENT
What percentage of your courses are taught in English?	0-25%	61.5%
	25-50%	23.1%
	50-75%	7.7%
	75-100%	7.7%
How long have you taught at least one course in English?	0-2	53.8%
	3-5	23.1%
	5-10	7.7%
	More	15.4%

Table 4.2 Survey Data

Why do you teach in English?	
Because the University promotes teaching in English.	21.1%
Out of the opinion that scientists must master English	36.8%
Because the textbooks are in English	5.3%
Other	36.8%

Table 4.3 Reasoning behind teaching in English breakdown

Table 4.3Table 4.3 suggests that, as a rule, professors who teach in English are doing so for one of two reasons. The first most commonly cited reason was that students must master English. Another often mentioned reason was a rise international Ph.D. students (see Appendix I for a complete listing of write-ins).

5 CONCLUSIONS

It is difficult to quantify how far the trend has really come. Statistics of courses taught in English, are not readily available, and it is very difficult to “test” how much English has invaded teaching and publication at German-speaking technical universities. Despite all this, there is a clear trend toward English as a *lingua franca* for technology. Universities are pushing for more internationality, and it shows by the increasing number of professors who teach in English at German technical universities, the rise of international BS/MS – BA/MA compatibility, and the rising number of international graduate students in Germany universities.

I have personal experience with Zurich. It is a very international city, and therefore the majority of people speak English. But it is also a part of Switzerland, so most residents also speak at least French, and many more speak a fourth language, Italian. Therefore it seems plausible to me for people to learn at least two foreign languages, as the ELC suggests. Unfortunately, not everyone does this, especially non-students.

Whether learning two foreign languages is necessary or not is another question. English is becoming too easy to use, especially for people with a relatively rare mother tongue, such as Swedish. It is becoming more and more difficult to find books written originally in Swedish. This is a very real example of English undermining culture. This leads me to believe that English can and does have an impact on cultures that can get out of hand if not properly dealt with.

On the other hand, English has the power to make scientific society easier to navigate. It can facilitate discussions and make the general technical body of knowledge more accessible.

It will be important to keep in mind the difference between English as a tool for unification and its impact on true plurilingualism as the European Union and the international community grows.

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APPENDIX I: SURVEY DATA

I.1 Survey template

I.2 Raw data

I.3 Write-in results

Fragebogen über Englisch als Unterrichtssprache an deutschsprachigen Universitäten und Fachhochschulen

1. Welcher Prozentsatz von allen Ihren Lehrveranstaltungen unterrichten Sie auf Englisch?

- 0 - 25%
- 25 - 50%
- 50 - 75%
- 75 - 100%

2. Wie lange unterrichten Sie schon mindestens zum Teil auf Englisch?

- 0 - 2 Jahre
- 3 - 5 Jahre
- 5 - 10 Jahre
- Länger

3. Warum unterrichten Sie auf Englisch?

- weil die Universität englischsprachigen Unterricht fördert
- aus Überzeugung, dass Wissenschaftler Englisch beherrschen müssen
- weil die Lehrbücher auf Englisch sind
- Andere Gründe:

4. Bemerkungen (Wenn nötig auch die Rückseite benutzen):

Ausgefüllten Fragebogen bitte zurückschicken an:

Andrew Oleson
WPI Box 2530
100 Institute Road
Worcester, MA 01609
USA

APPENDIX I.2: RAW DATA

Q	Option	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	TOTAL	PERCENT	
1	10-25%	1	1	1		1				1	1			1				1	1	10	58.8%	
	25-50%				1	1						1						1		4	23.5%	
	50-75%													1		1				2	11.8%	
	75-100%								1											1	5.9%	
2	0-2			1	1	1	1			1			1	1	1			1		9	52.9%	
	3-5								1		1							1		4	23.5%	
	5-10	1																	1	2	11.8%	
	More		1									1								2	11.8%	
3	a				1	1				1					1			1	1	6	25.0%	
	b	1	1			1	1			1		1							1	1	8	33.3%
	c								1						1					2	8.3%	
	d		1	1	1	1					1	1		1			1			8	33.3%	

APPENDIX I.3: WRITE-IN RESULTS

3. *Warum unterrichten Sie auf Englisch?*

3. Why do you teach in English?

Meine Postdoc's sprechen kein Deutsch

My post-Docs do not speak German

Neue Studiengänge, für Ausländer besonders geeignet (Bachelor-, Master-)

New courses of study specially suited for foreign students (Bachelor/Master)

Damit ausländische Studenten ein englischsprachiges Fachangebot bekommen

Offers foreign students subjects in English

Damit Studenten auf internationale Veranstaltungen vorbereitet werden

To prepare students for international conferences

Weil es in den höheren Semestern Studenten gibt die nicht sehr gut Deutsch verstehen

Because in upper-level courses there are students who do not speak German well

Es gibt viele ausländische Gäste am Institute.

There are many foreign guests at the institute.

International Bachelor & Master courses.

Wenn Studenten, die noch nicht gut Deutsch verstehen, in der Lehrveranstaltung sind.

If students who do not yet speak German well are in the course.

4. *Bemerkungen*

4. Notes

In Deutschland habe ich bisher noch kein Lehrveranstaltung in Englisch abgehalten.

In Germany I have not yet given a course in English.

- Grund-Kurse (Semester 1-4) sollten in Deutsch gehalten werden

- Fortgeschrittene Vorlesungen auch Englisch

Introductory courses (first and second year) should be held in German

Advanced courses in German or English

Bisher keine Englisch sprechenden Vorlesungsteilnehmer.

Until now have not had lecture students who spoke English.

Seminare, die zur Ausbildung gehören, werden Englisch gehalten, wenn Teilnehmer anwesend sind, die nicht Deutsch sprechen.

Seminars that are a part of training are taught in English, if participants who do not speak German are present