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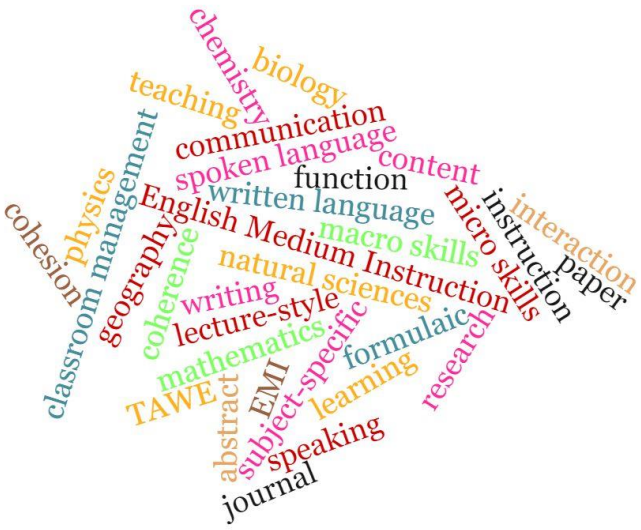


QUESTIONS:

What is English Medium Instruction?

How to teach in English?

How to write in English?

How to be proficient in academic writing?

How to prepare and conduct a subject-specific lesson in English?

How to improve English for academic writing and teaching in English?

# TEACHING AND ACADEMIC WRITING IN ENGLISH (TAWE) COURSE

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# INTRODUCTION

## Before we start…

The course *Teaching and Academic Writing in English for Natural and Mathematical Sciences* is intended for university lecturers who would like to improve their language and pedagogic skills relevant to teaching in the English Medium Instruction (EMI) context, as well as their academic writing competences in English.

The course and the corresponding handbook are not intended to give standardized, general solutions, but to provide guidelines and stimulate self-reflection. This could, hopefully, lead to individual solutions which are most suitable for various particular contexts, depending on institutional policies, local academic contexts, scientific disciplines, as well as the individual characteristics and preferences of the teacher.

Before we start, it is advisable to reflect on topics related to your academic context, motivation for teaching in English, English proficiency, teaching style, communication practices, academic writing practices, etc. Please consider the following questions:

1. Your institution (faculty/department):

   a) has an accredited study programme in English and (local and international) students enrolled in it/but no students enrolled in it yet.
   b) offers particular courses in English, for both local and international degree and exchange students (which, how many courses?)
   c) has no courses regularly offered in English, but individual teachers may teach some classes to international exchange students
   d) plans to have an accredited study programme in English.
   e) Teachers who teach in English are/are not specially trained/rewarded for it.

2. What is the main reason you (wish to) teach in English? *(Select all that apply and then order according to importance for you)*

   a) promotion of domestic students' English proficiency
   b) internationalization of the university/faculty
   c) recruitment of domestic and international students
   d) promotion of faculty's teaching profession
   e) improvement of students' cross-cultural communication skills
   f) gaining expertise that will help me teach abroad
   g) other: (*please specify*) _____

3. Your experience as a teacher using English as a Medium of Instruction (EMI). *(Underline the appropriate word/phrase)*

   a) I have used English in my classes or class assignments (never, a little, considerably, a lot)
   b) I have taught a course entirely using EMI (never, once, several times)

4. How confident are you when using English in general? *(Provide a single answer for each skill (1 lowest confidence… 5 highest confidence).*

   a) reading
   b) listening to someone
   c) writing
   d) speaking

5. Considering your oral skills in English in academic settings, how much do you agree with the following descriptions *(1 don't agree at all … 5 completely agree).*

a) My speaking is fluent, I can speak smoothly and with a natural speech rate.
b) My speaking is generally accurate in terms of intonation and stress although my pronunciation may have some features of my mother tongue.
c) I have a sufficient range of
    - General vocabulary
    - Academic vocabulary
    - Discipline-specific vocabulary
d) My speaking is grammatically sufficiently correct and a few occasional mistakes do not cause a problem for understanding.
e) I can easily interact with students and colleagues, to ask and answer their questions and check comprehension.

6. What is in your opinion the least and most challenging about English Medium Instruction, for the teacher? *(1 not challenging… 5 most challenging)*

a) speaking in English
b) preparing activities for the students
c) assessing student performance
d) providing feedback
e) organizing interactive tasks
f) managing the classroom in English

7. What problems do you expect/have concerning your classes in English? *(Do not choose more than 3 answers).*

a) none
b) more time to prepare lessons than before
c) developing good interaction with foreign students
d) lack of appropriate teaching materials in English (textbooks, workbooks, etc.)
e) already complex content may become even more complex in English
adapting teaching material to foreign students
f) insufficient command of English for the appropriate use in class
g) other: *(please specify)*_____

8. What are your biggest concerns about using EMI? *(Choose all that apply.)*

a) students have low level English language ability
b) students have mixed English language ability (i.e., students have different levels of English ability; some may have adequate skills while others do not)
c) insufficient support for students to develop their English language abilities at my institution
d) my own limited English language ability
e) EMI may diminish the quality of the content I try to teach
f) other (*please comment)* _____

9. What do you think will be most problematic for your students when you teach in English? *Do not choose more than 2 answers.*

a) your pronunciation or grammar
b) specific expressions and discipline-specific terminology that you use
c) cultural differences
d) their general (inadequate) language skills

e) already complex content will become even more complex
f) other *(please comment)* _____

10. As a teacher in the classroom you usually: *(Choose all that apply.)*

a) lecture
b) ask questions
c) take questions from students
d) lead discussions
e) have students talk in pairs or small groups
f) assign student presentations
g) other *(please comment)*_____

11. In the classes that I teach, the students' reading material is:
a) all in English
b) all in Serbian
c) some in Serbian, but most in English
d) some in English, but most in Serbian
e) other (*please comment*)_____

12. What kind of information do you provide on handouts? *(Choose all that apply.)*

a) I don't provide handouts
b) an outline of the lecture
c) discussion questions
d) lecture notes with gaps for students to fill in
e) other: *(please specify*)_____

13. What technology do you normally use for your lectures? *(Choose all that apply)*

a) presentation slides
b) printed handouts
c) smartboards
d) video
e) the Internet (e.g. online platforms for learning)
f) other (*please comment*)

14. What types of academic texts do you write in English? *(Underline all that apply)*

a) research articles
b) popular science articles
c) lecture notes/slides
d) project proposals
e) laboratory reports
f) fieldwork notes
g) case study
h) theses/dissertations
i) other (what?)

15. In your opinion, what segments of using English are your weak and strong points in academic writing? *(1 weakest,… 5 strongest)*

a) general English vocabulary
b) discipline-specific terminology

c) general academic phrases, including linkers and comment phrases
d) sentence and phrase structure
e) structure and form of the academic paper
f) simple grammar (including the use of articles, prepositions, tenses)
g) other (what?) _____

16. Provided you write various academic papers in English, how do you write them?

a) First write in Serbian, then translate into English with the help of dictionaries and other resources
b) Write in English with the help of dictionaries and other resources
c) Write in English with the help of dictionaries and other resources and have it checked by an English professional
d) Write in Serbian and have it translated by an English professional
e) Other: (*please specify*) _____

# ENGLISH MEDIUM INSTRUCTION (EMI)

The growing internationalization of higher education and scientific research and publishing is characterized by the dominant use of English as a language of instruction and publication.

It is getting increasingly important for university teaching staff to be not only proficient in English for general purposes and familiar with the discipline-specific terminology in English, but also to gain a range of additional competences in order to be able to teach their courses in English and to publish their research in English. Such competences include the awareness of the specificities of English Medium Instruction (EMI) and the specific English language competences, pedagogical competences, intercultural communicative competences as well as academic writing competences in English.

## The notion of EMI

The abbreviation **EMI** [i: em ai] stands for two related but not identical terms. The first is **English as a Medium of Instruction**, and it broadly refers to the English language used by teachers, who teach various content subjects, to achieve instruction and communicative objectives of the course. It shares some characteristics of but is not identical to EFL (English as a Foreign Language), EAP (English for Academic Purposes) or ESP (English for Specific Purposes), although the teachers and students speak English as a foreign language, in academic (higher education) settings, and use it to communicate the content related to a specific discipline. The main difference is that EFL, EAP and ESP are intended to teach English, whereas EMI is not intended to teach English, but another content discipline, in English. The second term is **English Medium Instruction**. It is defined as **"**the use of the English language to teach academic subjects (other than English itself) in countries or jurisdictions where the first language (L1) of the majority of the population is not English." (Dearden, 2015; Macaro, 2018). In this book, the abbreviation EMI is used in both senses, depending on the context.

**English Medium Instruction is the teaching of academic content through and in English, not the teaching of English.**

Let us take a closer look at this definition. 'Use of English' means not only British or American or any native variety of English, but any version of English spoken by a competent international speaker. It also may mean that, to some extent, English may be combined with the use of another language, usually the first language of the teacher and students, if they happen to share it in a particular academic setting.

Depending on the particular academic and administrative context, the difference between teaching in the local language and English Medium Instruction may be viewed differently, in terms of changes it requires and makes (TAEC EMI Handbook, 2019):

- Language change only. In EMI, only the local language gets substituted for English. The language of instruction is English, the teaching materials are the same and only translated into English, but the rest remains the same: teaching methodology, course requirements, the type of students, etc.
- Both the change of language and change of teaching methodology. The teaching context is the same, but the language of instruction is English, the teaching materials are in English and the teaching methodology is changed to involve more group work, discussion and interactive activities, or a different class focus.
- The change of language and change of teaching methodology are accompanied by the change of student population. Because the student population is international and does not share the

same native language, not only the language and teaching materials are changed but also the teaching style, to accommodate for international and intercultural diversity.

**Activity 1**

**Think and discuss:**

What is or will be the kind of change in your local situation, at your department or faculty? How are you going to deal with it?

## Aspects of EMI

**EMI has several interrelated aspects that need to be considered: language, EMI teachers, EMI students, and content. They exist in a particular academic and social context that influences them.**

**Language**. EMI is, obviously, done in English. A certain higher level of proficiency is needed for relatively smooth lecturing, but not the near-native pronunciation or flawless grammar. It is not so much about 'good English' as about providing good understanding of what you want to communicate in English. Moreover, EMI is not simply a matter of translating course material and slides from L1 (Serbian) to L2 (English). The teachers should make special effort to make the content understandable and provide additional explanations of key terminology. Although the EMI teachers of, for instance, mathematics or chemistry do not see themselves as English teachers, they are nevertheless responsible for making the content understandable. It especially means using various strategies to explain the terminology to the students and using simplified sentence structures to communicate, if necessary. Even though it is not the explicit goal of EMI to improve the English language proficiency of the students (as it is in teaching English as a foreign language, EFL or ESP), they may indeed improve it, simply by being exposed to English and assisted by the teachers in understanding particular academic content.

**EMI Teachers**. What competences should EMI teachers possess, apart from the academic and teaching competences necessary for teaching in their mother tongue? Obviously, a certain level of English proficiency is necessary, at least B2 level, and special focus should be paid to oral competences (sufficient fluency and accuracy), sufficient range of general and discipline-specific vocabulary, and interaction skills to communicate with EMI students. Apart from that, new teaching competences are needed, to address the needs of the EMI context. The teaching style in the EMI setting needs to change from a teacher-led style to a more dynamic one. A good EMI teacher is able to successfully explain difficult concepts, able to create an interactive environment in class, is aware of and can accommodate potentially diverse cultural backgrounds of the students, and can, even implicitly, help EMI students improve their English.

**EMI students**. Who are your EMI students? What is the ratio between local and international students? Their language competences may be very diverse, which could pose a problem in class. Are local students taught in an EMI class together with international students? EMI research shows that a significant number of EMI students have difficulties to follow lectures, even though their general English proficiency is not low. They often claim to find the technical words difficult. Also, they may lack the pre-content knowledge necessary to follow lectures. Regardless of the lack of explicit English instruction, students often claim that they have made progress in English when they studied through EMI. Another problem might be that the cultural and academic background of foreign students is different, so they might be shy to communicate or expect different kinds of tasks. It is very important for internationalization not to separate international students from local ones, that is, to teach them in the same class.

**Content.** Although it may not be obvious, there is a question whether the academic content that is delivered to students is exactly the same regardless of whether it is delivered in English or in the native language (Serbian). Do EMI teachers make any changes in the content, in terms of reductions, simplifications or any other differences? Sometimes the content has to be delivered at a slower pace, with more repetitions, and more attention paid to key terminology, so that EMI students can fully understand it. Of course, it is not the same for different disciplines, as for instance the content in mathematics is less dependent on the verbal output than the content in ecology. The next issue are the assessments (oral or written, tests, seminar papers, projects, etc.). How are the exams and pre-exam tasks done, in the same way as in Serbian courses or differently, taking into consideration the students' lower level of language proficiency in English than in their mother tongue? How can assessments be less dependent on the verbal elements? For natural and especially mathematical sciences it is less of a problem than for social sciences and humanities.

**Activity 2**

**Think and discuss: Aspects of EMI in your situation**

- Language: Do you have any concerns about your English language proficiency? What do you see as your weakest and strongest points? How would you explain some discipline-specific terms in an EMI class, using various strategies? How would you deal with EMI students who are not very proficient in English? What do you think of the statement of this teacher: "I'm not interested in their English; I'm interested in their comprehension of biochemistry."?
- EMI students: How many international students do you have or expect to have in your class? Who are your EMI students? Do you teach both local and international students in the same class?
- EMI teachers: To what extent are you familiar with international students' academic and social background and culture? To what extent are you ready to accommodate to the students with different cultural background? How interactive are your classes, to what extent do you use pair and group work, discussions, etc.?
- Content: Do you think the academic subject content will be affected if delivered in English instead of in Serbian? How? What are the challenges related to the specific assessment types (exams, etc.) in your discipline if it is done in English compared to one in the native language?

**A lecture in English is not simply about choosing the right words and ordering them with grammatical precision, but using all the resources at your disposal to convey the content and meaning you want to communicate to your students.**

Additional material: two short videos about EMI, available on the TAWE course project platform

## Teaching resources and support for the EMI educational environment

Apart from the regular teaching material that you use for your course, both in Serbian and in English (coursebooks, textbooks, workbooks, assigned articles to read, etc.), and your slides and handouts, when teaching in the EMI educational environment, you will probably want to consult and use much more sources and materials in English. What for do you need teaching resources and support?

**EMI teachers use various teaching and support resources in English to get ideas, plan their lessons, find interesting illustrative examples and videos, define teaching goals, structure lessons, create novel educational content, etc.**

In this section, some suggestions are provided related to various categories of resources:

- Articles, books on teaching in general (in English). Since EMI teaching requires not just the change of language but also the change of pedagogy and teaching styles, you might want to consult the relevant pedagogic literature in English. Here are two books on teaching, with many practical ideas and examples, but of course you can find and consult whatever you consider appropriate and useful for your teaching: *What the best college teachers do* **(**Bain 2004) and *What works in classroom instruction* (Marzano, Gaddy, Dean 2000).
- Subject-specific sources, materials to be adapted to class objectives. These relate to your specific disciplines and subdisciplines and you can find them at some special websites dedicated to your specific disciplines, such as other universities, professional organizations, teachers' communities, etc. Here are some suggestions:

Ted-Ed – a site that shares for free a great number of interactive, video-based lessons on different subjects, including mathematics and natural sciences.

Available at https://ed.ted.com,
and lessons section at https://ed.ted.com/lessons?direction=desc&sort=featured-position.

Each lesson contains a short video, interactive exercises, additional material, discussion topics and the option to customize the lesson.

Educational Technology – a site with numerous educational web tools and mobile apps for teachers and educators.

Available at https://www.educatorstechnology.com/p/site-map.html.
These resources are especially for science teachers
https://www.educatorstechnology.com/2014/02/the-25-must-have-resources-for-science.html
while these links are for math:

math resources https://www.educatorstechnology.com/search/label/math%20resources,
math websites https://www.educatorstechnology.com/search/label/Math%20websites,
math games: https://www.educatorstechnology.com/search/label/Math%20games

A site with materials that particularly deal with combining mathematics content teaching and study of English. This collection of resources from Stanford University includes videos, assignments, and links to articles and information that discuss the multiple ways in which language develops and is present in math classrooms. Educators are encouraged to incorporate Specially Designed Academic Instruction in English (SDAIE) strategies into instruction in order to address both content and language objectives effectively within the same math lesson.

Available at https://web.stanford.edu/dept/gse/cgi-bin/clad/elr012/

- Social networks, blogs and vlogs as resources. EMI teachers can use social networks together with formal educational platforms (such as Google classroom or Moodle) or on their won to create a natural, less formal way of communicating, to share content, make announcements, engage in discussions, etc. Blogs and vlogs (video blogs) can be used for collaborative tasks, pre-class assignments, summaries and follow-up practice. Here are some tools that can be used to make blogs and vlogs:

Blogger https://www.blogger.com/about/?bpli=1
Screencast-o-matic https://screencast-o-matic.com/
and https://screencast-o-matic.com/education

- YouTube as a resource. Apart from being able to find and watch video lectures ranging from basic to top universities, EMI teachers can use YouTube clips for various activities, while preparing for or delivering a lecture. Some of the activities include: pre-class preparation, in-class presentation, and various follow-up activities. Clips can be used as a stimulus to start an activity or discussion, or even to test comprehension or as test preparation material. In particular, for EMI teachers it can be useful to find lectures delivered by eminent colleagues in their discipline, and pay attention to the language used and style of lecturing, in order to compare it with their own use of language and style. Particularly interesting are high quality free videos of live lectures from MIT, for various disciplines,
  available at https://ocw.mit.edu/
  where you can browse the content specific for your discipline.

**Activity 3**

**Think and discuss:**

Do you use additional online resources to support your teaching? If yes, what are they (reading material, pictures, illustration videos, video lectures, lesson plans, quizzes, etc.,) and what do you use them for? How do/will your students react to online teaching and using more technology for their course? What pros and cons can that have for EMI students?

# FOCUS ON LECTURING

In order to become a good lecturer, one has to invest a lot of conscious effort. A lecture should, ideally, delight as well as instruct; therefore, the lecturer should be both an educator and a performer. These objectives are not easy to achieve due to many constraints that can occur.

Although personality plays a great role, the conscientious effort is more important for achieving the desired outcomes. Everything requires practice and preparation, which in turn, can make an excellent lecturer, and make those who are gifted into even better ones.

## Styles of lecturing

There are said to be many different styles of lecturing. However, a few basic styles are considered to be the most common. The style of each individual lecturer depends on the lecturer and the discipline they teach, because one can evolve their own style which is guided by personal experience and native good sense, and eventually the style represents something that works for both students and teachers. Five common types of lecturers could be listed:

1. **Oral Presenters**

These lecturers almost exclusively use talking as their means of communicating. They usually do not rely only on one text when they prepare their lectures and they usually note only headings and subheadings, instead of writing down notes or scripts for full lectures. They do not use diagrams to depict structures, processes or relationships, and they rarely, if ever, use additional tools such as blackboards or PowerPoint or overhead projector transparencies in order to provide full notes or to outline main points.

2. **Visual Information Givers**

These lecturers are those who use PowerPoint slides, or overhead projectors and blackboards because they are confident in providing visual information to their learners in the form of full notes. Since they often use diagrams to show processes and relationships, they give their learners time to copy down complex diagrams. When preparing lectures, they do not use only brief notes and headings, but they almost always write down full notes.

3. **Exemplary Performers**

These lecturers use many different visual and oral techniques of presentation because they are very well-structured presenters, and, at the same time, very confident and skilful. This group of lecturers is most likely to write down brief notes, as well as headings and subheadings, and not whole lectures, when they prepare. When they select and structure materials for their lectures, they often structure the lecture around questions. They inform their learners in advance about the topics of each lecture, and they always write down and tell the learners about their objectives. They like to emphasise key points by using different aids, such as handouts, but they rarely use aids to provide full notes.

4. **Eclectic Lecturers**

These lecturers are usually disorganised because they use many techniques, including humour, but they have difficulty in selecting and structuring materials. That is why they are not very confident in their lecturing abilities. They also tend to use more than one text when preparing their lectures, and, instead of full notes, they usually write down headings, subheadings and brief notes. They also tend to stray from their notes' content.

5. **Amorphous Talkers**

These lecturers are not well-prepared so they tend to be vague; however they also tend to be over–confident. They usually ignore the essential strategies of preparing lectures, which is why they tend not to think about objectives of their lectures and they do not inform their learners about them. They also tend not to inform their learners in advance about the topics of future lectures or exams.

Oral lecturers are most common in the humanities and visual lecturers in the sciences. Exemplary lecturers are more common in the humanities and biomedical sciences, as are eclectics. Amorphous talkers are more common in science and engineering.

There is yet another aspect that has to be taken into account at this point and it is whether teachers will remain the same lecturers when they teach a class in their own mother tongue and when they teach in EMI settings. Something will definitely have to be altered. Suffice it to say that in an EMI class the student population is not the same. This can imply that students do not have the same educational and cultural backgrounds and the identical level of knowledge. Therefore, besides language, teachers also have to change their style of lecturing so that they could adapt to the EMI context in the best possible way. They will have to include more activities such as discussions and group work, use visuals to help comprehend concepts, provide material/handouts before class, encourage students to ask questions, etc.

**Activity 1**

**Describe and compare your own lecturing style(s) when you teach an EMI class and when you teach a class in your own mother tongue.**

**Reflect on your own style(s) of lecturing and answer these questions**

1. Which means of communication do you use when lecturing?
    a) only talk
    b) only chalkboard/whiteboard
    c) a variety of visual techniques of presentation,

2. Do you write on the board/ tell the learners the objectives of each lecture?
    a) always
    b) never
    c) rarely
    c) occasionally

3. Do you inform the learners in advance of the lecture topics?
    a) always
    b) never
    c) rarely
    c) occasionally

4. Do you experience any difficulty in selecting and structuring materials for your lectures?
    a) never
    b) rarely
    c) occasionally

5. How do you commonly structure your lecture?
    a) around questions
    b) by giving examples
    c) explaining key notions and concepts

6. Are you inclined to make digressions while lecturing?
    a) frequently
    b) only if necessary
    c) rarely
    d) occasionally

7. When lecturing do you provide your learners with handouts?

a) never
b) frequently
b) rarely
c) occasionally

8. When preparing a lecture do you rely on

a) one text
b) various texts and sources

9. When preparing a lecture do you write down

a) full lecture notes or scripts
b) only headings
c) headings, subheadings and brief notes

## Lecture styles

Lecturers usually organise their lectures according to one of the following lecture styles:

1. **Topic-List**

The lecturer starts by presenting the topic, which is then followed by related subtopics. Each subtopic contains details and sometimes sub-details. Transitional words like 'next' and 'finally' and number words like 'one or 'second show that the lecturer is using a Topic-List style. The transitional words also indicate a shift from one subtopic to another one.

2. **Question-Answer**

The lecturer starts by introducing a topic and then starts to ask one or more questions about the related topic. After being introduced, each question is answered. Some of the words that indicate that a lecturer is implementing the Question-Answer style are 'who', 'what', 'when', 'where', 'how' and 'why', as well as phrases such as, for example, 'in what way' and 'how did they react'.

3. **Compare-Contrast**

The lecturer starts by identifying two things that will be compared and contrasted. Then, the lecturer explains how these two things are similar (comparing) and how they are different (contrasting). Words and phrases which suggest similarities are: 'similarly', 'alike', 'counterpart', 'resemble', 'correspondingly', 'in parallel', 'just as' and 'equal to'. Words and phrases which suggest differences are 'differently', 'opposite', 'on the other hand', 'however', 'disparity', and 'on the contrary'.

4. **Series of Events**

The lecturer starts by identifying the topic and then they describe an initial event, stage or step associated with the topic. Then, the lecturer provides information about additional events, stages or steps, and then makes a conclusion by introducing the final event, stage or step. The indication that the lecturer uses the Series–of–Events style includes the words and phrases such as 'initially', 'at the outset', 'followed by', 'next', 'later', 'then', 'after', 'succeeding', 'culminating', 'last' and 'finally'.

5. **Cause-Effect**

The lecturer starts by presenting the cause of something, and then they describe one or more effects related to that cause. Some of these effects are explained in detail. Words or phrases which indicate that the lecturer is using a Cause-Effect style are: 'since', 'thus', 'therefore', 'consequently', 'for that reason', 'on account of', 'owing to', and 'as a result'.

### 6. Problem-Solution

The lecturer starts by introducing a problem and tries to explain why that is a problem. Then, if there are attempts to provide a solution to the problem, the lecturer describes them and adds details where necessary. Finally, if the solution to the problem has been found, the lecturer makes a conclusion by identifying it or they provide the status of attempts to solve the problem. The indication that the lecturer presents a problem are words and phrases such as 'puzzle', 'issue', 'point of dispute', 'enigma', and 'complication'. If the problem has been resolved, the lecturer uses words and phrases such as 'solution', 'explanation', 'answer', 'cleared up', and 'worked out'. If the attempts to find a solution are under way, the lecturer uses words and phrases such as 'unravel', 'investigate', 'clear up', and 'untangle'.

**Activity 2**

**Think about the type/types of the lecture you normally use while lecturing.**

What would be the appropriate lecture style(s) for your academic discipline?

At this point, it goes without saying that lecturers need to spice up things a bit in their EMI classes if they want to generate rapport and make content delivery and reception more effective. In order for lecturers to help students understand the content of their sessions, they should use a lot of examples. Let us not forget, teachers in international settings are teaching neither in their mother tongue, nor in their students', and therefore, detailed contextualization of examples is obligatory because international may not understand them.

If lecturers want their EMI lessons to be effective, they will focus on reducing or completely removing the causes of comprehension difficulties. There are three main areas that should be covered: slow pace, clear articulation and a greater degree of redundancy. As far as the slow and deliberate pace is concerned, Flowerdew (1994) suggests that in order for it to enable the processing time for new information, there should be mini-discussion breaks, during which students reflect on content either quietly or discussing together, thus improving the rapport and their vocabulary. The second area that refers to 'clear articulation' should be extended with 'accurate' or understandable pronunciation. Finally, redundancy depends on the level of language and content knowledge of the 'receiver' of the lecture. In order for the audience not to miss the key points of a lecture, it is often necessary to include repetition, reformulation, summaries and recapping.

Idiomatic expressions and metaphors represent another way of spicing things up in an EMI class since they have proved to be helpful in illustrating and clarifying difficult concepts. Due to the fact that they have students from different countries, lecturers need to be very cautious which metaphors and idioms they will make use of. If it is an English one, most students will understand it. However, it is a nice practice to bring some of the local flavours into the EMI classroom. In this case, using a metaphor or an idiom from the lecturer's native language for which there is no direct translation will require more explicit hints and clues about the meaning of the idiom/metaphor. Once used and explained in this way, the metaphor/idiom will become a very powerful means of clarification throughout your EMI course.

Anecdotes and humour are said to be very effective in attracting and keeping students' attention and establishing more than necessary rapport among students. Personal anecdotes are welcome in the EMI classroom because they are forthright and very easy to understand. Using humour is somewhat more delicate. First, a lecturer would have to use the right words and appropriate language so that the joke would sound natural and achieve the desired effect. Second, different cultures have various types of humour. The topic that we consider suitable for a joke in our culture could be considered inapposite in another culture. Students who have not experienced that type of humour before may find the whole situation in class pretty confusing. The bottom line is that everything EMI lecturers decide to exploit for spicing up their classes has to be accessible to all students.

**Activity 3**

**How do you spice up your lectures? How would you spice up an EMI lecture?**

In your opinion, which idiom(s)/metaphor(s) would represent our national environment? And which one(s) your local environment? How would you explain it/them in English?

Do you use jokes in your lectures in Serbian? Which joke would you use in the EMI classroom? How would you tell/translate it? Is it wrong not to use jokes in your EMI lectures?

# ACADEMIC WRITING

## Introduction to academic writing

Academic writing is scholarly or scientifically-based writing produced in the form of nonfiction which is meant to present the work of a member of the broader academia who want to share their theoretical or empirical fieldwork or research within natural, medical, technical or social sciences as well as the humanities. Academic writing may be produced in the form of essays, articles, papers, reports or monographs in which researchers, scientists and scholars analyse a natural phenomenon, a technical problem, an aspect of culture, or propose new theories, or develop interpretations from existing archives.

Academic writing has three main characteristics: 1) formal language, 2) impersonal (objective) style and 3) technical vocabulary. The aspect of formality is evident in the fact that the language used in academic writing is never casual or conversational, but rather planned, premeditated and serious. Academic writing is also impersonal as it tends to avoid direct references to people, it does not emphasize personal feelings, but insists on facts, objects and ideas. Last but not least, academic writing is technical as it relies heavily on subject-specific vocabulary (Oshima & Hogue, 2007), i.e., words and phrases referring to a certain discipline or field of research.

**Academic writing in English is formal, impersonal (objective) and technical.**

Apart from following the rules of formal, impersonal and technical expression, a piece of academic writing is expected to demonstrate just the right amount of originality while relying on existing research and established conventions within a certain discipline (Murray & Moore, 2006). A rather frequent point of criticism of an article or paper which reviewers simply love to put forward in a review is that the author failed to provide a solid presentation of existing research in the respective field and contextualise their own research. Yet, if an author makes the mistake of relying heavily on existing literature, they might be criticised for overreferencing their research and not providing any new conclusion, inference or fresh point of view. This paradox of originality versus convention can be resolved only if the author manages to be informed by the literature, but not constrained by it (2006). In other words, academic writing needs to balance a certain conformity to conventions while offering a new contribution and original voice.

Unfortunately, there is not a manual for academic writing which could be applicable to all disciplines and research fields. In other words, academic writing is characterised heavily by disciplinarity, i.e., by the specific characteristics pertaining to a certain scientific field. This implies that an author needs to be well-informed about what constitutes the disciplinarity in a certain field and how that disciplinarity is represented and anchored in already published work. In order to achieve that, authors need to rely on rhetoric features referring to a discipline, field or genre, familiarise themselves with them and assimilate them into their thinking and writing. This can be achieved by understanding the structure of writing, the manner of making statements as well as the conventions of how to provide evidence and arguments.

As said, there is no manual for academic writing but there is some general advice regarding the writing process in academic writing in general. According to Savage and Shafei (2007), the writing process progresses through five stages and in each stage the author may resort to a specific strategy.

1. The first stage is brainstorming which implies that the author gathers information about a certain topic, thinks about ideas and tries to predict the certain vocabulary they will need. A useful strategy is to analyse existing ideas but also how those ideas have been realised.
2. The second stage is creating an outline. The author should sort out the ideas gathered in the first stage and decide which to use, cluster them in logical parts, maybe even make a chart or write an outline or plan. A good strategy to follow is to look at models similar to what the author is

planning to write. A model may come in handy as the author can easily organise and sequence their own ideas based on the model.

3. The third stage is writing a first draft which means that the author expands their outline into full sentences. Again, a model may be useful as sentence structures as well as phrases in existing research may help the author put together their own statements. At this stage, the author should rely on the strategy of evaluation and evaluate their own writing while writing, i.e., sort out ideas and thoughts that do not contribute to the final product.
4. The fourth stage is editing which implies the application of knowledge about grammar, language and style. The author should be able to correct their own mistakes, rewrite sentences and rearrange their thoughts in order to provide logical statements as well as coherent and cohesive paragraphs. A very important strategy at this stage is to distance from one's writing. This can be achieved by just putting the piece of writing aside, maybe for a few hours or even days. The author will be able to look at their own writing with a more objective eye so that the editing stage may render a satisfactory result.
5. The final stage is writing the final draft and submitting the finished work. Obviously, this implies that the author produces a neat version of their writing. The most important strategy at this stage is relying on the instruction provided to the author. If the academic text is to be submitted to a journal, there will be a style sheet with clear instructions how to format the article and prepare it for submission.

**Stages in the writing process:**

1. Brainstorming.
2. Creating an outline.
3. Writing a first draft.
4. Editing.
5. Writing a final draft and submitting one's work (Savage & Shafei, 2007).

When looking at an academic text, two things are immediately obvious: 1) the text is academic and 2) it belongs to a certain discipline. The reason why is that the subject-specific vocabulary immediately indicates that the text is not a novel, story or similar piece of creative writing. Moreover, based on the vocabulary and the technical terminology used to display the content presented in the academic text, the academic discipline and genre can be identified thereby allowing the reader to put the text into a specific framework.

**Example of academic writing:**

In this paper, we introduce the notion of classical primeful modules and also we investigate some properties of classical quasi-Zariski topology of Cl:Spec(M). In Section 2, we introduce the notion of classical primeful modules as a generalization of primefule modules. In particular, in Proposition 2.3, it is proved that if M is Some Remarks on the Classical Prime Spectrum of Modules 17 a classical primeful R-module, then Supp(M) = V(Ann(M)). Then we get some properties of classical top modules. In Section 3, we get some properties of classical quasi-Zariski topology of Cl:Spec(M) and also we get some properties of classical top modules (Abbasi & Naderi, 2021).

**Example of creative writing:**

After breakfast, Henry wandered around the house, bored to death. He passed by his father's room and saw with contempt that the bed remained unmade. In fact, upon a second glace, Henry saw that the entire house was in need of a good cleaning. Towels lined the bathroom floor, dishes piled up in the kitchen sink, and all sorts of crummies scattered along the wood floors of the entire house. I have got

to get out of here…, Henry thought to himself. He shivered; the mere thought of being alone in there all day was beginning to make him antsy. I think I'll head down to the park, he decided. And with the swift decision, Henry grabbed his backpack containing his wallet as well as other various items and set off from the house (Holweger, n.d.).

**Example of personal writing**

mum, pls make sure to wash my new blouse. want to wear it to the party tonight. love, lucy

As can be seen from the examples, academic writing differs from other forms of writing, such as creative or personal writing. For instance, creative writing is used for stories, novels, plays, etc. while personal writing is used in emails, letters or messages. Either type may be formal, but they will not be impersonal nor will they be subject-specific. As presented in the academic writing example, the writing is formal as the language is not colloquial, no contractions (e.g., isn't, don't, etc.) are used, the sentences are complex and the vocabulary is focused on a specific subject, i.e., mathematics. As obvious from the example, the language is technical. The author is obviously an expert in the subject and he knows the discipline and the specialization well enough so as to produce a relevant and scientifically grounded piece of writing. In addition, the example is impersonal as it is not about the author's personal thoughts or emotions, but about a scientific problem.

In order to achieve the necessary level of formality in academic writing, the author should rely on a specific register, avoid contractions and emotional language as well as use cautious evaluations.

| **Formal** | **vs** | **informal language** |
|---|---|---|
| somewhat | | a bit |
| significant | | important |
| insufficient | | not enough |
| ample | | a lot |
| does not | | doesn't |
| helpful | | wonderful |
| problematic | | terrible |
| strong evidence | | proof |
| less convincing | | wrong |

Although academic writing needs to be objective and impersonal, sometimes an author will have to present their opinion to interpret findings, evaluate a theory, develop an argument or express criticism of other authors' work. To achieve just the right amount of both personal opinion and objectivity, authors in academic writing may resort to certain strategies to present a point of view in an objective way. Again, this may be achieved by a certain choice of vocabulary, the use of passive sentences, the use of less of emotional statements as well as citations from relevant and authorative sources.

**Objectivity in academic writing**

I really believe that this model is the best to show…

⟶ This model proves to be efficient as it indicates…

The results are amazing…

⟶ The results demonstrate strong evidence…

Children around smoking parents…

⟶ When exposed to second-hand smoke, children…

In my view, linguistics is…

⟶ Based on Paltridge's (2004) opinion…

Apart from being subject-specific, academic writing presupposes the acquisition of a certain set of academic rules as well as learning how to play by these rules. These rules may be different in different disciplines. They depend on the audience and the purpose of writing but they also vary according to each writing context (Paltridge, 2004). For instance, academic writing in the humanities is characterized by longer paragraphs. The paragraphs normally include a topic sentence so that the argument of the paragraph is clear. Unlike that, in natural sciences, academic writing is more likely to display short paragraphs without topic sentences but with much more factual information.

Finally, academic writing might be different across different languages (Oshima & Hogue, 2007). For instance, in comparison to the Serbian academic writing norm which relies on the first-person plural pronoun *we*, in English the plural form of the first person *we* is used only when more than one author has written the article or book. Otherwise, the singular form *I* is used or, alternatively, the passive voice is employed. In addition, academic writing across languages may present differences in general textual patterns, argument structure, use of background reading texts, reader orientation, patterns of cohesion, the construction of sentences, and lexical choices (Silva, 1997).

## Types of academic writing

Academic writing may be divided into four main types: descriptive, analytical, persuasive and critical. However, a more specific categorization may be made based on the specific language features and the purposes of the academic texts so that there are essays, project reports, lab reports, journal articles, conference presentations, theses, dissertations, etc. According to Coffin et al. (2002), academic texts rely on three key dimensions: rhetorical purpose, register and text structure. The rhetorical purpose refers to the general communicative purpose of the writing. What does the author want to say? What is the main purpose? Is it to present information, display data or construct an argument? Regarding register, as stated in the introduction, an academic text will largely depend on a particular set of vocabulary which is subject-specific and possibly restricted to a certain discipline or field of study. As far as text structure is concerned, an academic text must have at least an introduction, a main part and a conclusion. However, nowadays the so-called IMRAD structure is preferred in most academic writing and it includes the following elements: introduction, methodology, results, analysis and discussion.

**The four main types of academic writing are descriptive, analytical, persuasive and critical.**

The simplest type of academic writing is descriptive as its purpose is to present and describe facts and/or information. This type of writing, if employed individually, occurs in a summary or a report as it basically identifies a problem, reports on findings in a summative way, or summarizes results and conclusions without going into details. The analytical type of academic writing relies on categorizing facts and information, grouping results and presenting relationships between and among them. This means that the author analyses findings and opinions, compares results, facts or information, contrasts, relates and examines them. The persuasive type of academic writing has all the trades of analytical writing but it goes one step further as it includes a point of view, a suggestion, a conclusion, etc. Nevertheless, none of these can be employed in academic writing without evidence to support them. This basically means that the author has to provide relevant resources, findings and facts to be able to

argue, evaluate and discuss a point of view. Finally, the critical type of writing has all the characteristics of persuasive writing with the addition of the fact that at least two points of view need to be considered, compared and contrasted. In practice this means that the author takes some researcher's point of view or argument, analyses it and then offers their own interpretation. In critical writing authors may agree or disagree with somebody else's point of view as long as they support their claims with relevant arguments.

Academic texts most often rely on a combination of at least two types of academic writing depending on the type of research. For instance, in a dissertation, the author will probably have to combine all four types. Therefore, it may be concluded that there are no clear-cut boundaries between the types of academic writing.

**Types of academic writing in an IMRAD-based academic text:**

| | |
|---|---|
| Descriptive | |
| | methodology section to summarize methods |
| | results section to report on the data collected |
| Analytical | |
| | results section to present relevant relationships between findings |
| | analysis section to elaborate on relationships and present conclusions |
| | discussion section to relate findings back to the research question |
| Persuasive | |
| | discussion section to propose interpretations of the findings |
| Critical | |
| | introduction section to present an objective literature review and present the relevance of the present research |

## Signposting and metadiscourse

Signposting as well as the use of metadiscourse implies that authors of academic texts employ phrases and words that help a reader of an academic text to understand the content of the text as clearly as possible (Coffin et a., 2002). Signposts and metadiscourse may be used to express caution, criticism, trends and quantities but they can also be used to guide the reader from one section to another thereby providing coherence and cohesion to the text. In that way, the ideas in a text are linked together forming a unified whole in which arguments are built up gradually contributing to the subject matter of the text.

An academic text has the purpose to present an argument, a discussion, a description of a process, to inform about some progress, etc. Such text is comprised of paragraphs which are like stepping stones. These stepping stones are expected to lead the reader through the argument, discussion or description so that they can understand it in the same way the author understands it. This means that the author has to present the ideas and arguments in a logical way, in a certain order as well as based on a certain structure which will guide the reader step by step through the reading. In order to achieve that, the author can rely on signposts, i.e. various aspects of metadiscourse or language that refers to things happening in the text itself, which will point out the directions of the movements through the structure of an academic text. Signposts may be sentences that recap the main idea of the preceding section, or words that indicate, for instance, agreement or objection to ideas stated at some previous point in the text. Most often signposting words and phrases are signposting conjunctions or linking words. Signposting should happen throughout the whole academic text and it can be used inside a

sentence, between sentences and between paragraphs. If successfully employed, signposts will give the reader a sense of control over the text.

**Signposting is achieved based on signposting phrases and conjunctions or linking words.**

One of the most noticeable stylistic aspects of academic writing is the authors' inclination to avoid expressing absolute certainty as well as making over-generalisations. Authors of academic texts know that uncertainty is always possible and that exceptions might exist. Therefore, authors try to weaken the epistemological strength of a statement or claim by using cautious language. Another characteristic of academic writing is critical language. Authors are expected to question what they read, even indicate disagreement. Criticism in academic writing also implies that authors look for reason why a standpoint should not be accepted or whether something is correct or not. Academic writing is also characterised by indications of existing trends and predictions of future trends as well as by descriptions of quantities. All these characteristics imply the use of specific signposting phrases.

**Signposting phrases expressing caution, criticism, trends and quantities**

Caution

This result is likely to show…
This inconsistency may be due to…
The findings of this study suggest…
Other types of responds might include…
Research articles generally indicate…

Criticism

However, most studies show a lack of…
The author XY has made no attempt to…
A more constructive approach would imply…
The main weakness of the study is…
The estimation presented here fails to prove…

Trends

The graph shows that there has been an increase/a decrease…
What stands out in this simulation is…
Production peaked in…
The rate of Z is likely to decline by…

Quantities

Well over a third of the respondents…
This country has the highest proportion of…
The surveys yielded a 34% response rate…
The mean score for X was subjected to…

Authors may resort to signposting throughout their entire piece of writing. In the introduction is usually achieved by means of clear indications of the overall aim of the text, the ideas that will be discussed, the basic outline of the text as well as justify the reason for the research.

**Signposting in the introduction**

Aim of the text

This article/research is aimed at…
The aim of this article/research is to…

Main ideas

The research is based on the idea of…
This investigation relies on the basic assumption…

Basic outline

The article will first present… Then it will… Finally, it will…

Justification

For this reason, this article will discuss…
In order to indicate…, this research will present three approaches to the issue of…

Throughout an academic text, from the beginning to the end, the author can rely on two types of signposting: small-scale and large-scale. Large-scale signposting is used to tell the reader some specifics about what will follow in the text or what has already been said. It is based on phrases which clearly refer to a previously stated idea or an idea that is about to follow.

**Large-scale signposting**

What has been said before

Having discussed the argument in favour of, I/the article will now…
As has been said before, the main idea…

What will be said later

Details regarding this argument will be elaborated in…
In Section xy, I/the article will present further arguments supporting…

Small-scale signposts are individual words or short phrases which help the author to build a text that will flow smoothly while helping the reader follow a certain direction in the text. As stated previously, signposting words may be used to link together parts of sentences, two sentences or two paragraphs.

**Signposting words and phrases (sentence beginning and sentence middle)**

Reason – because

Due to the fact that…
This is due to the fact that…

… since/as…
… stemming from the fact that

Cause – why

If the results…,

Unless the results…,

… if…
… so that…
…; therefore, …

Time – when

As soon as…
After…

… while…
… when…
… before…

Addition – and

Moreover, …
Furthermore, …
In addition, …

… and also…
… in addition to which…
… besides which…

Result – so

Therefore, …
Hence/Thus …
Accordingly, …
As a result, …
Consequently, …
In accordance with…
Pursuant to…

… and therefore…
… and as a result…
… and consequently…
… resulting in…
… as a result of which…

Purpose – so that

In order for…
The aim of this research is to…
So as to…

… in order to…
… with the intention/aim of…
… with a view to…

Focusing – emphasis

For instance, …
For example, …
Indeed…
… which/who…

Listing – then/after

First…

Second…
Following this…
Subsequently…
Finally, …

… after which…
… and following this…
… and then…

Comparison – like

Similarly, …
Likewise, …
Unlike…
… and similarly…
… and unlike…

Contrast/opposition – but

However, …
Nevertheless, …
Despite this…
In contrast, …
On the one hand… On the other hand, …
… yet…
… although…
… despite which…
… while/whereas…

Author's voice – stance/authority

Clearly, …
In fact, …
Arguably, …
Certainly, …
Obviously, …
… but clearly…
… yet notably…
… but it seems that…

Conclusion – finalize

All in all, …
In brief, ….
In conclusion, …
To conclude, …
To summarize, …
To sum up, …
… and all in all…
… so that in brief…
… so that in summary…

The following pages will be devoted to activities designed to introduce authors to some basic steps in developing their academic writing skills. All the suggested activities are based on the advice and information presented on the previous pages.

## Activities[1]

**Activity 1**

**Look at the following examples of academic writing and state which type each of them is: descriptive, analytical, persuasive and/or critical. If you believe that more than one type applies, you may state so.**

**Example 1:**

The convergence of double sequences play an important role not only in pure mathematics but also in other branches of science involving computer science, biological science and dynamical systems. Also, the double sequence can be use in convergence of double trigonometric series and in the opening series of double functions and in the making differential solution.
In the wake of the study of ideal convergence defned by Kostyrko et al. [32], there has been comprehensive research to discover applications and summability studies of the classical theories.

Type(s): _____

_____

**Example 2:**

During the last few decades the uniqueness theory of entire or meromorphic functions has developed as an active subfield of the value distribution theory. The main interest of the uniqueness theory is to determine an entire or meromorphic function uniquely satisfying some necessary conditions. In 1997 Yang and Hua [6] studied the unicity problem for meromorphic functions and differential monomials of the form $f^n f^{(1)}$, when they share only one value. S. S. Bhoosnurmath and R. S. Dyavanal [3] extended the Yang-hua's results to the case of $(f^n)^{(k)}$

Type(s): _____

_____

**Example 3:**

We presented in this manuscript a new concept of TFP results by using a control function in the setting of FCM-spaces. Additionally, some uniqueness TFP theorems are illustrated via the triangular property of FCM by using different contractive type conditions. The control function is a continuous one-to-one self-map that is subsequentially convergent in FCM-spaces. Further, the existence and uniqueness solution of a system of VIEs are studied. In lieu of VIEs, the authors use various types of applications such as Riemann integral equations, Lebesgue integral equations, and nonlinear integral equations to support their findings.

[1] Excerpts used in this material are from various authentic sources. They are not a product of the authors of the material.

Type(s): _____

_____

**Example 4:**

At the end of the first decade of the 2000s, numerous attempts were made to create exclusively wind-powered cars. In 2008, a group of German students from the University of Stuttgart built a wind-powered car called the Ventomobile [13]. It had a two-metre wind turbine with two blades on top. It had three wheels and a design that was more like a bicycle than a car. Many consider this construction to be the first car to run exclusively on wind power, the energy generated by the wind.

Type(s): _____

_____

**Activity 2**

**State the purpose of each example of academic writing presented in the previous task (literature review, results, analysis, discussion or conclusion).**

**Example 1:**

Purpose: _____

_____

**Example 2:**

Purpose: _____

_____

**Example 3:**

Purpose: _____

_____

**Example 4:**

Purpose _____

_____

**Activity 3**

**Make sentences using adequate signposting phrases to express the indicated intentions.**

**Criticism**

_____

_____

**Caution**

_____

_____

**Quantity**

_____

_____

**Trend**

_____

_____

**Activity 4**

**Use signposts in your own sentences as indicated. Write one sentence for each example.**

**Purpose**

_____

_____

**Author's voice**

_____

_____

**Comparison**

_____

_____

**Opposition**

_____

_____

**Addition**

_____

_____

**Conclusion**

_____

_____

**Activity 5**

**Underline all the phrases that express the aim, hypothesis, sample and outcomes of the research presented in the following abstracts. If some of the elements is missing, indicate it on the line.**

**Abstract 1**

A wind turbine can act as an energy recovery device (ERS) in a comparable way to brakes (regenerative braking). When the velocity of a vehicle changes, the amount of energy related to it also changes. When its velocity decreases, the energy tends to dissipate. Over time, this dissipated energy has been ignored. For example, during the braking process, the kinetic energy of the vehicle was converted into heat. In recent years, society's greater awareness of climate change, pollution, and environmental issues has led to a great deal of interest in developing energy recovery systems. It allows the recovery of kinetic energy from braking (KERS), resulting in consumption reductions (efficiency gains) of up to 45%. The usefulness of installing a wind turbine as an energy recovery device is analysed, evaluating the savings that can be achieved with its two possible working modes: as an energy recovery device and as a system for utilizing aerodynamic force. The wind turbine has a horizontal axis and a diameter of 50 cm and is installed on the front of a vehicle. This vehicle will undergo three particular driving schemes, which will operate under different experimental conditions and operational parameters characterized by speeds, accelerations, stops, and driving time. The results clearly show the advantages of using the proposed technology.

Missing element(s): _____

_____

**Abstract 1**

The objective of this paper is to present a new notion of a tripled fixed point (TFP) findings by virtue of a control function in the framework of fuzzy cone metric spaces (FCM-spaces). This function is a continuous one-to-one self-map that is subsequentially convergent (SC) in FCM-spaces. Moreover, by using the triangular property of a FCM, some unique TFP results are shown under modified contractive-type conditions. Additionally, two examples are discussed to uplift our work. Ultimately, to examine and support the theoretical results, the existence and uniqueness solution to a system of Volterra integral equations (VIEs) are obtained.

Missing element(s): _____

_____

**Activity 6**

**Use the given prompts in the examples below and write out the research aims for each of them.**

**Example 1**

Prompts:

offline-online data assimilation approach/ allows for joint parameter and state estimations/ based on local probabilistic surrogate models and thermal imaging in real-time

Research aim: _____

_____

_____

**Example 2**

Prompts:

a procedure based on higher-order matrix splines/ provide the approximated numerical solution of special nonlinear third-order matrix differential equations

Research aim: _____

_____

_____

**Activity 7**

**Use the given prompts in the examples below and write out the hypothesis for each of them.**

**Example 1**

Prompts:

the proposed CNN model/ appropriate model for kerf width prediction in laser cutting of thin non-oriented electrical steel sheets

Research hypothesis: _____

_____

_____

**Example 2**

Prompts:

extended continuous chain ladder model/ benchmark candidate for asbestosis mortality forecasting/ flexible and simple forecasting strategy

Research hypothesis: _____

_____

_____

**Activity 8**

**Based on the information gathered from the above-presented material, analyse the abstracts provided below and state the positive and negative aspects.**

**Example 1**

We devise a theoretical model to shed light on the dynamics leading to toxic relationships. We investigate what intervention policy people could advocate to protect themselves and to reduce suffocating addiction in order to escape from physical or psychological abuses either inside family or at work. Assuming that the toxic partner's behaviour is exogenous and that the main source of addiction is income or wealth we find that an asymptotically stable equilibrium with positive love is always possible. The existence of a third unconditionally reciprocating part as a benchmark, i.e., presence of another partner, support from family, friends, private organizations in helping victims, plays an important role in reducing the toxic partner's appeal. Analysing our model, we outline the conditions for the best policy to heal from a toxic relationship.

Positive aspects: _____

_____

Negative aspects: _____

_____

**Example 2**

We investigate a dividend maximization problem under stochastic interest rates with Ornstein-Uhlenbeck dynamics. This setup also takes negative rates into account. First a deterministic time is considered, where an explicit separating curve can be found to determine the optimal strategy at time t. In a second setting, we introduce a strategy-independent stopping time. The properties and behaviour of these optimal control problems in both settings are analysed in an analytical HJB-driven approach, and we also use backward stochastic differential equations.

Positive aspects: _____

Negative aspects: _____

**Activity 9**

**Take an abstract you have already written and rewrite it by improving it based on the advice and information presented here.**

**Abstract**

**Activity 10**

**Write an abstract from scratch. Make sure you adhere to the advice and information presented here.**

**Abstract**

# DIFFERENCES BETWEEN SPOKEN AND WRITTEN ACADEMIC LANGUAGE

When we want to communicate the same or similar content in speech or writing, we can observe that there are a number of differences. Spoken language is characterized as rather informal, colloquial and unstructured, and is mostly in the form of a dialogue with others. On the other hand, written language is generally more structured, formal, impersonal, with more complex grammar and vocabulary. However, these distinctions are not necessarily so clear. In academic language, the written mode (various types, see the section on academic writing) is indeed well-structured, formal, impersonal and full of discipline-specific terminology. Spoken academic language (lectures, conference presentations, etc.) is different from everyday spoken language because it shares some characteristics of both the everyday spoken language and written academic language. Spoken academic language is not unstructured, it is not spontaneous dialogue, and though less formal and less impersonal than the written academic language, it cannot be described as informal and colloquial.

**Written academic language is well-structured, impersonal (objective), using formal and discipline-specific vocabulary and complex syntax. Spoken academic language is less firmly structured, more personal, with simpler syntax, less formal vocabulary, more repetitions and is much more dialogic in its nature.**

## Main characteristics and differences between spoken and written academic language

The differences between spoken academic language (a lecture) and a written academic language (an article) are visible in several elements, related to the referring to the linguistic and situational context (here, there, this, …), the use of language devices such as personal pronouns (I, we, you), expressing the author's/speaker's personal opinion, the use of various simple and complex syntactic forms, the narrative strategies such as repetition and paraphrase, the use of terminology and definitions, the type and quantity of signposting, etc. Tables 1 and 2 provide descriptions of the main differences, with brief illustrative examples.

Table 1. Some differences between spoken and written academic language (examples from natural sciences)

| SPOKEN | WRITTEN |
|---|---|
| **Context dependent**<br>Here you can see the additional examples. | **Context independent**<br>Additional examples are at page 35 of the coursebook. |
| **More personal (use of pronouns *I, you*) and can express subjective opinion and attitude, contains dialogue features (questions, suggestions, requests)**<br>In Table 1 we show analytical parameters that we used for all measurements. | **Impersonal and objective, avoids subjective opinion**<br>In Table 1 are presented analytical parameters for ICP-OES that were used for all measurements. |

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| **More everyday vocabulary**<br>**More use of active, less complex, shorter sentences with simpler conjunctions (*and, but, when, if…*), ideas expressed as sentences rather than complex noun phrases**<br><br>We wanted to see how we can use mushrooms as food and we found that they have enough macronutrients. But, we must make toxicological testing to find out if it is safe to eat them.<br><br>In mushrooms there is only a little of microelement sodium. It is very important because if you eat a lot of sodium, you can get high blood pressure. Sodium differs from other microelements because there is more of it in stipe than in the caps.<br><br>It is good to eat a lot of macroelements such as P, K, Ca, Mg and Na. So, it is important how much of these elements we can find in the wild-grown mushrooms that we can eat. | **Formal vocabulary, specialist vocabulary, more words of Greek and Latin origin**<br>**More use of passive and impersonal constructions, and complex syntax, more complex noun phrases**<br><br>Since mushrooms have been viewed from a nutritional point of view and have been found to accumulate macronutrients in appropriate amounts, toxicological testing is necessary to determine that they are safe to consume.<br><br>Sodium is a macroelement found in small amounts in mushrooms, which is very important because sodium excess in nutrition can lead to high blood pressure. This element differs from other macroelements due to its more significant presence in stipe than in the caps.<br><br>The abundance of macroelements such as P, K, Ca, Mg and Na is desired in the human diet, and their determination in edible wild-grown mushrooms is of great importance. |
| **Repetitions, more clarifications, paraphrases, especially of key terminology and relationships**<br><br>Mushrooms can uptake large amounts of water and elements (e.g., phosphorus, iron, potassium, cadmium, magnesium, copper and zinc) because mycelium has a large surface that is in contact with the top layer of soil. Mycelium is a network of fungal threads or hyphae. A hypha (plural hyphae, from Greek word meaning "web") is a long, branching filamentous structure of a mushroom. The hyphae are the main mode of vegetative growth, and are collectively called a mycelium. Mycelium is perfectly adopted to get into soil pore spaces. The fungal hyphae's vast surface area and physiology enable an effective absorption and bioconcentration of various metals, metalloids, and nonmetals. | **Concise, precise terminology and non-repetitive statements**<br><br>Mushrooms can uptake large amounts of water and elements (e.g., phosphorus, iron, potassium, cadmium, magnesium, copper and zinc) due to mycelium's extensive surface contact with the top layer of soil. Mycelium is perfectly adopted to penetrate and access soil pore spaces. The fungal hyphae's vast surface area and physiology enable an effective absorption and bioconcentration of various metals, metalloids, and nonmetals. |
| **More signposting, more informal signposting expressions**<br><br>(Examples of various communicative functions and expressions for signposting are given below.) | **Formal signposting, mostly to segment parts of the text and make cohesion**<br><br>(Examples of various signposting expressions for signposting in written academic genres in the section on academic writing.) |

The academic language of mathematical sciences has some characteristics different from academic language in other disciplines. In both written and spoken academic language, apart from using a lot of formulas and symbols, the authors are very succinct, and present their procedures, calculations and results in great detail by inviting the audience to join in all the steps of the reasoning and discovery procedure.

The use of inclusive *we* is dominant, rather than passive and impersonal structures, which are dominant in other academic written styles. Inclusive *we*, which does not refer only to the author(s), and the inviting imperative *let's, let us*, which includes both the author and the audience, invites the audience to follow the procedure.

Table 2. Some differences between spoken and written academic language (examples from mathematics)

| SPOKEN | WRITTEN |
|---|---|
| **Context dependent**<br><br>Here is our problem and let me show you the solution.<br><br>If this horizontal distance is delta x, then this location is $x_0$ + delta x. And so the point above this point has… | **Both context independent and context dependent**<br><br>Smith [4] first introduced the concept of EFE, which is an efficient method for the solvability of CP and VIP.<br><br>We briefly introduce some topological degree concepts for the implementation of our main result. |
| **More personal (use of pronouns *I, you*) and can express subjective opinion and attitude, contains dialogue features (questions, suggestions, requests)**<br><br>So just to make that explicit here, I'm going to make a definition, which is that f'($x_0$), which is known as the derivative, of x, at 0, is the slope of the tangent line to y=f(x), at the point P. | **Frequent use of inclusive 'we', and imperatives that invite the reader to participate (*let's, let us, suppose*) Impersonal and objective, avoids subjective opinion**<br><br>Next we compute an estimate for $\delta n\ (I_2)$.<br>Suppose that $j \in I_2$ and $j = \theta_1\ (l)$. |
| **More everyday vocabulary**<br>**More use of active, less complex, shorter sentences with simpler conjunctions (*and, but, when, if…*)**<br><br>Now, this is still a little general, and I want to work out a more usable form here, a better formula for this, and in order to do that, I'm gonna write delta f, the numerator more explicitly here, the change in f. So remember that the point P is the point ($x_0$(f$x_0$)). All right, that's what we got for the formula for the point. And, in order to compute these distances and in particular the vertical distance here, I'm gonna have to get a formula for Q as well. So if this horizontal distance is delta x… | **Heavy use of mathematical symbols, formal vocabulary, specialist vocabulary,**<br>**Specific syntax for explaining relations and processes (simple sentences, formulaic sentence types, (*Let X be…, If… then…, From X follows…*)**<br>**More use of passive and impersonal constructions.**<br><br>Let function $u(x,y) = u(x_1, x_2; \ldots, x_n, y)$ be continuously differentiable up to the order $2m$ on a variable $y$ and the order is not less than m on $x$:<br><br>Theorem 2.2 is proved by means of formal expansion of the operator … |
| **Repetitions, more clarifications, paraphrases, especially of key terminology and relationships**<br><br>Here's the graph. Here's the point P. Maybe it's above the point $x_0$. $X_0$ by the way is supposed to be some fixed place on the x-axis. | **Extremely concise and short statements, precise terminology, strict logic, no repetitions**<br><br>Definition 2.2. [23] A continuous mapping f:S $\subset$ X $\rightarrow$X is completely continuous, if for every bounded set D $\subset$ S; the image set f(D) is relatively compact. |

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| **Much more signposting, more informal signposting expressions, direct addressing of the audience, use of visuals (writing) and explaining**<br>(Examples of various communicative functions and expressions for signposting are given below) | **Formal signposting, mostly to segment parts of the analysis/reasoning procedure. Use of imperatives to invite the reader to follow.**<br>(Examples of various signposting expressions for signposting in written academic genres in the section on academic writing.) |

## Language devices from moving from the written academic mode to the academic lecture mode

The common phrases for various parts of the lecture and various activities the lecturer does during the lecture are given below. Of course, they can be combined, modified, individualized and used according to individual preferences. Which ones do you normally use in your classes?

### How to start a class

The usual way to start a class is to greet the students and get them ready to pay attention to what the teacher is going to say.

Greetings

Hello. How are you all today?

Good morning, everybody. How are you doing?

Good afternoon, all. Are we ready for a new lesson?

Setting down

Please stop talking and let's start.

Are you all ready to start?

Getting started

Ok, are we ready to start?

Ok, let's begin.

Let's get down to work at once.

It's time to start.

Explaining the time management in class (if necessary)

The class lasts 90 minutes.

We'll take a five-minute break halfway through.

### How to move through different stages of the lecture?

The introduction to the lecture

At the very beginning, the teacher wants to introduce the topic of the lecture, to state her/his purpose and to announce the lecture structure.

Introducing the topic

Today, I am going to talk about/focus on/discuss…

The topic of our lecture today is …

What we are going to cover today is …

Today's topic is particularly interesting/significant because it …

Stating the purpose

Our goal is to determine how/the best way to…

What I want to show you is…

What I'd like to do today is present …

Today, I'd like to update you on/inform you about…

In this class, we will be working on … with the aim to …

Today, we'll look at how to solve … .

Today, I intend to analyse/discuss/demonstrate…

The aim of this lecture is to explain how the model works.

This afternoon, we will touch on just a few aspects of the Gauss theory.

Announcing the lecture structure

I am going to divide/have divided my presentation into X (main) parts.

I this class I will focus on X major issues.

Today's lecture will be in X main parts.

The core of the lecture

While lecturing, the teacher makes his/her way through the content by leading the students and signposting the lecture. The teacher presents the main points, support them with examples, makes connections to, repeats and restates what was said earlier, changes direction, uses reasoning,

Signposting the phases of the lecture

First, I'd like to state the theory. Second, I'll give you some examples. Finally, we'll look at the results.

We'll begin by introducing the problem, and then we'll analyse the data and discuss possible solutions.

I'll begin by introducing some technical settings, and then I'll describe them.

Towards the end we'll work in small groups.

Referring to the previous lesson(s)

Let's review some of the concepts we talked about last time.

Last time, we looked at …., and today we'll discuss/move on to…

In our previous classes, we dealt with …, and today we continue with…

Making internal summaries, moving from one point to another, making backward reference

So far, I've presented /we have looked at … Now I'd like to…

In the previous part of this lecture we've covered…

Now, let's look at/move on to/consider/turn our attention to…

This leads/brings me to my next point/question, which is…

As we saw/noted earlier,

Let's go back to…

As I pointed out in the first section…

If you consider what I've told you about X at the beginning of today's lecture

The other aspect of X that I mentioned compares to Y in the following features…

Emphasizing important points

I'd like to draw your attention to…

I'd like to stress/emphasize that…

It should be stressed/underlined that…

This brings us to our major question…

What I want to emphasize/give you is …

What's really interesting here is…

What particularly interests us/me here is…

What we have here is…

Providing examples

For instance / for example…

I'd like to illustrate my point with an example.

(To clarify,) here is a common/well-known/typical example.

A less well-known/similar/different/recent example is…

An example you might be familiar with is…

Here are a few examples.

Look at this typical/unusual/recent example.

Referring to visual material

As you can see from the chart/table/picture…

This slide/diagram/chart/table/picture shows…

I'd like you to look at this illustration of…

On this slide/in this video, you can see…

The vertical/horizontal axis shows…

The coloured segment represents…

Digressions and getting back to the point

I'd like to digress her for a moment and look at/consider…

If you'll allow me to stray for a moment, ...

To get back to the point/main issue…

Getting back/returning to what we were discussing earlier….

Linking subtopics and points discussed before

This takes us back to the point I made earlier.

There is a direct link between this and what we looked at last week.

This relates directly to your lab work.

Changing direction

After this preliminary step, we can go back to the main procedure.

Now we are going to turn our attention to Exercise 3.

So, that's the application of Formula 2. Now, let's look at the next one.

That completes my overview of the proof. Now, I'd like to move on to Theorem 5.

Reasoning

We assume that the equality (6) is true for m = k and we prove that the equality is true for m = k + 1.

As a result, we conclude that the property holds.

Therefore, Property A is true.

It is clear that Property A implies that the model works.

Since A = 0, it follows that the property has not been verified.

We consider a portion of the plant's to be significant if it provides 15 % of the recommended daily intake (RDI) of nutritionally valuable elements.

Let v be the velocity. If we assume v is a constant, then the result is true.

The result is contradictory, so the hypothesis is false.

From Definition X it is easy to prove that addition of two completely continuous mappings is completely continuous.

## How to conclude and end the lecture?

It is important to get the students full attention at the end of a lecture. The teacher should summarize the main points, make conclusions and emphasize how the aims of the lecture were fulfilled.

Concluding the lecture

Before we finish, I'd like to recap/sum up/go over/ run through the main points, which were…

We'll now briefly refer to the key points.

As we wrap up, let me briefly summarize the main issues. First, I covered…, then we talked about… and finally we looked at…

I think we can conclude that…

I'd like to finish by emphasizing…

Let's summarize the main areas we have covered.

Before you go, I'd like to go over the formula again.

We can conclude from today's lecture that there is more than one approach to this problem.

Let's finish up by discussing the result.

Linking to the next lecture

We'll to the rest of this chapter/experiment next week.

We'll look at this in more detail in the next lecture.

We have no time left, so we'll come back to this the day after tomorrow.

Don't forget to work on this theorem over the weekend.

We'll continue this chapter next Monday.

We've run out of time, so we'll continue with this during the next lecture.

Let’s stop here and take this up again on Monday.

Ending the lecture

Finally, may I say that…

Let’s finish for today and I’ll see you next week.

## How to interact with students?

The lecture, unlike a conference presentation, is not a monologue. The teacher interacts with students throughout the class either to ask them direct questions, or to invite their questions and check how much they understand. Moreover, in case of communication breakdown and misunderstandings, the teacher needs the phrases to repair communication or simply to gain some time to think of a coherent reply. Finally, in line with modern pedagogy, teachers should try to make lectures more interactive and enrich classroom talk and make a greater balance between teacher talk and student talk.

Asking questions

Can anyone answer this question?

Can you calculate the result?

What are the exceptions to this rule?

Who can solve the equation?

Would anyone like to try to solve the equation?

Can you work this out?

Do you have any suggestions?

Would anyone try to guess?

Inviting questions

Please feel free to ask questions and make comments.

Raise your hand if you have any questions.

Don’t be shy/afraid to interrupt me if you have any questions.

Yes. We do have time for a few more questions.

Checking understanding

Do you understand this?

So far so good?

Please let me know if I am going too fast.

Would you like me to repeat that?

Is this clear to everyone?

Does this make sense?

Reacting to students questions, repairing communication and gaining time

If I understand that correctly, you would like to know…

Let me check if I understand what you meant. Please feel free to correct me.

I’ll try to rephrase that.

Let me repeat it, now step-by-step.

Let me try to answer by addressing one part of your question at a time.

Right, that's an interesting point.

Thank you for asking that/pointing that out. It's a very good question.

This is an interesting idea. Let's think about it.

Prompting students to think more or see other points of view or to consider consequences

You are on to something important. Keep going.

You are on the right track. Tell us more.

There is no right answer, so what would be your best answer?

What did you notice about …?

That's a great start. Keep thinking and I'll get back to you.

If you were in that position, what would you do/have done?

Would you have done it like that? Why or why not?

Should she have . . .?

What if he had not done that?

Some researchers/people think that … is [wrong, right, and so on]. What do you think? Why?

How can we apply this to real life?

Fortifying or justifying a student's response

That's a good probable answer … How did you get to that answer?

Why is what you said so important?

What is your opinion (impression) of …? Why?

## Activities

**Activity 1**

**Reflection task:**

Think about a very successful lecture or presentation you attended. How was it structured, which elements helped you to follow it?

**Activity 2**

**Observation task:**

Find one or more lectures in your discipline on YouTube, preferably from reputable universities and by well-known experts, and watch carefully to notice the language devices used for structuring the lecture and interacting with the audience. Note expressions in different categories, which differ from the ones given above as illustrations. You might want to add them to the lists above.

**Activity 3**

**Transferring the written into the spoken mode: example**

Look at the extracts of several sections of a journal article (J. Serb. Chem. Soc. 83 (10) 1113–1122 (2018)) in the left-hand column. In the right-hand column is a transcript of the words a lecturer might use when delivering the same content in class. This is of course not the only way this content can be delivered as a lecture, just an example.
Your task is to identify the differences. You might want to use Table 1, to describe the types of differences.
The very beginning and ending of the lecture are not included here.

| Journal article (written) | Lecture (spoken) |
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| INTRODUCTION<br>Free radicals play a crucial role in chemical reactions. Most of the reactions in the fuel system, the earth's atmosphere and planets have involved free radicals. In fact, their mechanisms have been intensively studied recently.[1–4] The methyl radical CH3, one of the most important free radicals due to its high reactive activity, is favored in combustion research. Recent results showed that it also participates in chemical vapor deposition (CVD) and chemical vapor infiltration (CVI) routes.[5–7] Among alkyl radicals, CH3 shows an imperviable characteristic to thermal decomposition.[8] Formaldehyde H2C=O, the first polyatomic organic compound observed in the interstellar medium and in dark nebulae, was predicted to be present in the Titan atmosphere. The H2C=O molecule is among the most abundant aldehyde molecules in the terrestrial lower atmosphere, where it is emitted, among other sources, from the combustion of fossil fuels and from biomass burning. …<br>[the introduction continues for 20 lines]<br>In this paper, we investigated the mechanism of the addition and hydrogen abstraction for reactions between formaldehyde and its isomers with methyl radical in the gas phase. The temperature dependence of rate constants from these reactions were verified and clarified. | The topic of our lecture today is free radicals. They are very important because they play a crucial role in chemical reactions. When we look around us, we see that free radicals are involved in most of the reactions, such as the ones in the fuel system, in the earth's atmosphere and the planets. This was an interesting topic for many researchers, and in the handout, the first four items, you will find references to some recent studies. One of the most important free radicals is the methyl radical CH3. It is highly reactive and that's why it is often found in combustion research. Recently, researchers showed that CH3 also participates in routes of chemical vapor deposition, for which we use the common abbreviation CVD, and in chemical vapor infiltration, for which we use the abbreviation CVI. Among alkyl radicals, CH3 shows imperviable characteristics to thermal decomposition. This means that it doesn't admit passage and cannot be affected by thermal decomposition. Another free radical is formaldehyde H2C=O. What is interesting is that it is the first polyatomic organic compound that was observed in cosmos, in the interstellar medium and in dark nebulae, and researchers suppose it can be present in the atmosphere of the planet Titan. The H2C=O molecule is one of the aldehyde molecules that is found in very large amounts in the lower atmosphere of the Earth. How does it get there? It is emitted from various sources, and mostly from the combustion of fossil fuels and from biomass burning.<br>… So, as you can see, this is a very relevant and diverse topic. Many researchers worked on it. What we are going to do in this lecture is to look into the mechanism of addition and hydrogen abstraction for reactions between formaldehyde |

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| | and its isomers with methyl radical in the gas phase. Also, we will check and clarify how the temperature depends on the rate constants from these reactions. |
| COMPUTATIONAL DETAILS<br>All calculations were realized using the Gaussian09 program.[19] Since the studied systems, methyl radical with formaldehyde and hydroxymethylene, are open-shell species, the density functional theory (DFT) method was superior in using the precise electron density to calculate the molecular characteristics. For calculations relating to open-shell systems using the DFT method, spin contamination does not affect the molecular properties.[20,21] The hybrid density functional method (B3LYP), Becke's three parameter nonlocal exchange functional[22-24] with the nonlocal correlation functional of Yang *et al.*[25] with 6-311 ++G(3df,2p) basis set[26] was used to optimize the geometries of the reactants, transition states (TS), and products. Frequencies calculations were performed at the same level to check whether the obtained stationary points are local minima or saddle points. Local minima and saddle points were confirmed to have all real frequencies and only one imaginary frequency, respectively.<br>[this section continues for 8 more lines] | So let's now turn to see how we performed the calculations and what methods we used. For all calculations we used the Gausian 09 program. If you want to find out more about it, check the reference given in the handout. First, let us look at the method. These systems, methyl radical with formaldehyde and hydroxymethylene, are open-shell species. To calculate the molecular characteristics, the density functional theory method (also known as the DFT method) was better in using the precise electron density. Additionally, to optimize the geometries of the reactants, transition states and products, we used the hybrid density functional method (with the abbreviationB3LYP), Becke's three parameter nonlocal exchange functional with the nonlocal correlation functional of Yang and his associates, with 6-311 ++G(3df,2p) basis set. If you want to find out more about these methods, check the articles given in the references, numbers 22 to 25. Further, it was necessary to check whether the stationary points are local minima or saddle points, so we performed frequencies calculations at the same level. What we found out confirmed that local minima have all real frequencies and saddle points have only one imaginary frequency. |
| RESULTS AND DISCUSSION<br>In all systems, both addition and abstraction reaction paths were investigated:<br>CH3 + H2C=O → TS-*k*1 → CH3–CH2–O (R1)<br>CH3 + H2C=O → TS-*k*2 → CH3–O–CH2 (R2)<br>CH3 + H2C=O → TS-*k*3 → CH4 + HCO (R3)<br>CH3 + *cis*-HCOH → TS-*k*4 → CH4 + HOC (R4)<br>CH3 + *cis*-HCOH → TS-*k*5 → *cis*-CH3–OH–CH (R5)<br>CH3 + *trans*-HCOH → TS-*k*6 → *trans*-CH3–OH–CH (R6)<br>CH3 + *trans*-HCOH → TS-*k*7 → CH4 + HOC (R7)<br>CH3 + *trans*-HCOH → TS-*k*8 → CH4 + HCO (R8)<br>Details of barrier heights and enthalpy changes of reactions are presented in the section *Barrier height and enthalpy changes of the reactions*, and the rate constants in the section *Rate constants*.<br>[these subsections continue for 5 pages, illustrated with figures and tables] | And now, after examining the way how we conducted our research and calculations, let us look at the results we obtain and see what we can conclude from them. First, let's start by saying that we investigated both addition and abstraction reaction paths in all systems. Here you can see all the reactions from R1 to R8.<br>[the lecturer writes out and reads (or reads from the slide) and if necessary additionally explains the formulas]<br>To present the results more clearly, we will do it in two parts. First we will present the barrier heights and enthalpy changes of reactions and then the rate constants. |
| CONCLUSIONS<br>In this work, chemically accurate *ab initio* CCSD(T)/ B3LYP/6--311++G(3df,2p) calculations of PES for the addition and | Before we finish, I'd like to sum up the main points. In this class, we performed chemically accurate *ab initio* CCSD(T)/ B3LYP/6-- |

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| hydrogen-atom abstraction reactions (CH3 + H2=CO) and (CH3 + HCOH) were performed, followed by calculations of the rate constants by the VTST method. Enthalpy change values of reactions were estimated by the CCSD(T)/ 6-311++G(3d*f*,2p*)* method. The calculated results showed that the hydrogen abstraction reactions were the primary pathway in the temperature range from 300 to 2000 K.<br>[the text continues for 6 lines]<br>This research may shed light on experimental studies and knowledge of the reaction mechanism of the methyl radical and hydroxymethylene. | 311++G(3df,2p) calculations of PES for the addition and hydrogen-atom abstraction reactions (CH3 + H2=CO) and (CH3 + HCOH). Then we calculated the rate constants by the VTST method. After that, we estimated enthalpy change values of reactions by the CCSD(T)/ 6-311++G(3d*f*,2p*)* method. What did we find out from the calculated results? They showed that the hydrogen abstraction reactions were the primary pathway in the temperature range from 300 to 2000 K….<br>As you can see from today's lecture, we found out something new, got some additional data to find out more about the reaction mechanism of the methyl radical and hydroxymethylene. |

**Activity 4**

**Transforming the written into the spoken mode**

Think about how you might deliver the content of your article as a lecture. What changes might you make to the text, what might you add, and, additionally, how might you use your voice both to convey meaning and to help the listener follow what you are saying?

**Activity 5**

**Writing task: Transforming the written into the spoken mode**

Adapt your own academic paper into an academic lecture (preparation for an EMI class). Make sure you use a variety of language devices listed above. Simplify the vocabulary, sentence and phrase structure, and use various strategies such as defining the key terms in simple terms, repeating and rephrasing. Use friendly, direct mode to address your students in interactive lecturing. You can first write down the 'spoken version', then deliver it and record yourself. You might also like to do it in two parallel columns, as shown in Activity 3.

# FOCUS ON LANGUAGE

## What does it mean "to know" a (foreign) language?

Not a very good answer if we just say that it is enough to know vocabulary and grammar. Therefore, let us say for the beginning that knowing a language implies that we can speak it and be understood by others who speak the same language. A couple of inferences can be arrived at after this statement:

- We have to be able to produce sounds which signify certain meanings.
- We have to understand and interpret the sounds produced by other speakers of the same language.
- We have to know vocabulary items (words).
- We have to be able to combine words to form phrases, and phrases to form sentences (grammar).
- We have to know the rules to form and understand an infinite set of sentences.
- We have to know how to interpret sentences (e.g. statements, questions, etc.) and how to group them (e.g. narrative coherence, dialogue, etc.).
- We cannot help but use the language (e.g. simply try to not understand what somebody is saying or writing).

Without any further thought, we could conclude by saying that

**language consists of all the sounds, words and possible sentences and that knowing a language stands for the knowledge of all the sounds, words and rules for their combination.**

However, upon thinking further about language, it can be realised that language cannot be studied in isolation, but only in relation to its users and the social context in which it is produced. As a result, there is another very significant reference about language that has not been mentioned – language is a social action and it is different in different social circumstances. In other words, the language we use will depend on various parameters of the communicative situation (e.g., roles of participants, topic, purpose of communication, etc.). We also have to possess the knowledge of appropriateness for successful communication does not depend only on the production and comprehension of grammatically correct sentences, but also on whether communication is meaningful and appropriate in a given context and whether it performed (i.e., did) what the speaker intended. This can, for instance, refer to situations such as asking for directions or permission, describing people, places and charts, and so on.

**There are rules of use without which rules of grammar will be useless. (Hymes, 1971)**

It would be of the utmost importance here to mention that the same rule functions for both the native language and foreign languages. This is why when we speak a foreign language, we have to take into account that modern life today requires developing *a pragmatic competence of the (English) language,* which will facilitate its functional use. In order to master functional English properly, we have to take language into a more realistic/contextual realm, which would involve everyday-life situations, and then linguistic segments, and competences. Only then will the skills be called upon and functionally employed. Our (English-speaking) student learners might show mastery of the vocabulary and grammar (e.g., several forms of thanking or complaining), but without possessing a good control over the pragmatic uses they will never blend in the EMI class. This is not a one-way street, the same applies to teachers or experts who teach EMI classes. Should any learner of English, or any of the two

stakeholders in our case (teachers or students), fail to express their intentions or understand others, a pragmatic failure will occur (Zhuge & Wu, 2005: p75).

**Functional language is seen as an instrument of social interaction rather than as a system of formal rules that is observed in isolation from their communicative uses.** (Richards & Schmidt, 2002)

**Activity 1**

**How would you ask students to copy something from the board in an EMI class?**

**In your opinion, if students want to see the previous slide, what would be the appropriate form to address you?**

## Introducing a lecture

According to Wallwork (2010),

**How you introduce yourself and how the audience react to your introduction determine at least 30% of the success of your presentation. Audiences form their impressions of a presenter within approximately 90 seconds, after which it is difficult to change their opinion.**

**Activity 2**

**How do you introduce your lectures?**

**Activity 3**

**Take a look at two mistakes in frequent opening phrases. Can you find them? Write the correct openings.**

*In this presentation I am going to/I would like to/I will*

- discuss about certain findings of
- explain you certain findings of

_____

_____

Since there is so little time to connect to our audience and make our lesson attention-grabbing, alternative openings should be used excessively. This can be achieved by making use of one or more of the following techniques that will transform even the most difficult and notorious lecture according to students' opinions into a remarkable one:

- Giving an interesting statistic that is relevant for your country or your students' countries.
- Offering an interesting statistic that relates directly to the students.
- Getting students to imagine situations.
- Asking students a question and having them raise their hands.
- Mentioning something topical.
- Having students do something.
- Saying something counterintuitive.
- Mentioning some unexpected information.

Just as teachers are encouraged to ask questions throughout their lectures, students (especially EMI students) have also been instructed throughout the course of their previous education to ask questions. We should be acquainted with this fact so that we could know what to expect. However, it would be impossible to keep track of all the questions that are raised in classrooms, but what we can do is classify them into the following categories:

1. **'Straight' questions**
    a) Why is a covalent bond unreachable in this case?
    b) I have a question. Why is a covalent bond unlikely to be achieved in …. ?
    c) You mentioned that a covalent bond is unlikely to be achieved. Why do you think that is?
2. **'Give me more' questions**

- In your presentation, you said that the theory can't account for every single phenomenon:
    a) Could you say a little more about that?
    b) Could you go into more detail about that?
    c) Could you give us some examples of that?

3. **'I didn't understand, so tell me again' questions**

- I'm not very clear on how the process of computer enhancement works:
    a) Could you run through that again?
    b) Could you go over that part again?
    c) Could you explain that again?

**Activity 4**

Write two question that you have usually been asked? Which category do they belong to?

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How would you answer these questions? Is there a proper way of answering?

What do you say when you do not understand a question from the audience?

How have you avoided difficult questions so far?

How would you resolve the problem of proficiency in an EMI class?

If we want our EMI students to ask questions, we have to establish a constructive learning environment in which everyone will feel secure when asking a question. Therefore, the question of proficiency has to be addressed. There is no doubt that there will be differences in English proficiency between teachers and students, as well as among students themselves, but it is up to the teachers to create a cooperative and supportive atmosphere in an EMI class. Teachers who pay attention to this detail are more likely to resolve potential problems (e.g., being too shy to ask questions, being reluctant to engage in group work, causes of comprehension difficulties, etc.)

## Word classes and meaning

Having covered the afore-mentioned aspects, we should direct our focus on the meaning of words. In order to do that properly, we would have to scrutinize word classes. According to Greenbaum (1996), we have witnessed that grammarians have varied on the number of word classes and subclasses in English. The more comprehensive and detailed descriptions they provided, the more classes and subclasses they were required to define. For the purpose of this teaching material, we are going to concentrate on the division put forward by Greenbaum, which we will try to present as concisely as possible, and with necessary details only.

To start with, word classes are established on the basis of three types of criteria: the notional criteria which involve generalizations about the meaning of words in a class, the morphological criteria which refer to the forms of words that belong to one class, and the grammatical (or syntactic) criteria which involve the grammatical functions of the word in its relation to other words and larger units. Second, it can be said that word classes (or parts of speech) can be either closed or open. Open sets of words are by far the largest because they readily accept new words. The open classes are nouns, verbs, adjectives, and adverbs. The closed classes include auxiliaries, conjunctions, prepositions, determiners, pronouns, numerals, and interjections. Third, it has to be highlighted that many words can belong to more than one class (e.g., *the ups and downs of values; values are going up and down*), and that certain members of a class consist of more than one word (e.g., *book review, in front of*, etc.). Fourth, it is significant to mention that the distinction between lexical or content words and grammatical or function words, on the one hand, roughly corresponds to open-class and closed-class words, on the other hand. And finally, content words, usually referred to as full or lexical words, make up most of the words in language, and most importantly in most cases they are said to carry the semantic content (i.e., meaning) of the vocabulary, while grammatical words, usually referred to as function or form words, are mainly employed to carry grammatical relationships. Although it may seem that these classifications represent something worthy of note only for linguists, being aware of them can be, for instance, very helpful in the process of writing (e.g., *Please use capital letters for all content words in headlines*).

**Activity 5**

**Since you are able to place words within a particular set, when can you say that you know a word?**

In order to be able to properly teach an EMI class, we should focus on what it really means to know a word. What we know so far is that vocabulary knowledge and learning represent a lot more than merely remembering the definition of a word (Nation, 2001). What we need is some kind of metalinguistic awareness which would include the concept that knowing a vocabulary item stands for more than knowing its dictionary definition. However, this awareness would also imply that we know the word's spelling, morphology, parts of speech, pronunciation, variant meanings, collocations, specific uses, and register related contexts of use (Nation, 2001). Therefore, we have to know the following:

- The concept of a word – we have to understand and possess the background ideas about the word, which implies that we are able to realise that a compound, for example, is a substance

formed by a chemical reaction of two or more elements in fixed amounts relative to each other – *Common salt is a compound of sodium and chlorine.*

- Spelling of a word – the sequence of letters of the orthographic forms, and letters can sometimes be written in capital letters, block letters or small capitals – e.g., *successive, China vs. china.*

**Activity 6**

**What is the longest word in English? How many letters does it have? Which academic field of study does it belong to?**

- Morphology of a word – this is about how affixes are attached to the base form – *antidisestablishmentarianism, silvery, etc*.
- Part of speech – the explanation of what is the grammatical function of a word – *These are two separate functions. Extraction: uses to solvents to separate the molecule of interest by attracting it to the polar or nonpolar solvent.*
- Pronunciation of a word – this feature implies the phonological form of a word – *These are two separate functions. Extraction: uses to solvents to separate the molecule of interest by attracting it to the polar or nonpolar solvent. The important data are in given a row. An increase in the number of T cells bearing gamma chain may be related to the alterations in immunological functions in aged mice.*

**Activity 7**

**How would you practice the pronunciation of a new word?**

- Meaning of a word – the meaning of a foreign word given in the native language – *mathematically correct equations*
- Collocation – a word or phrase that is often used with another word or phrase, in a way that sounds correct to people who have spoken the language all their lives, but might not be expected from the meaning – *We have all witnessed a heated debate on the issue of releasing pollutants into the air.*

**Activity 8**

**Name a couple of collocations in your field of study.**

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- Specific uses – this is the point at which context can completely change the definition of a word – *chemistry: 1. the basic characteristics of substances and the different ways in which they react or combine with other substances, or the scientific study of such substances and the way they act with other substances: She studied chemistry and physics at college; a chemistry department/laboratory 2. the basic characteristics of a substance and the ways in which it reacts or combines with other substances: A team of scientists has been studying the chemistry of the ozone layer. 3. a quality that exists when two people understand and are attracted to*

*each other: The sexual chemistry between them was obvious. 4. the ability of people to have a good relationship: Building a strong team requires paying attention to team chemistry.*

- Register – this aspect is also related to context since different contexts (spoken, news, academic, etc.) require a variety of language use – *statistically important vs. statistically significant*

Even though it may appear that the list of details which are necessary if we want to say that we really know a word is complete, it is not thorough. Besides all the above-mentioned features, Flowerdew (2009) and Sinclair (1991) argued that semantic preference, semantic prosody and colligation should be added to the list. Therefore, the list should be enhanced with the following:

- Colligation – this feature is probably best explained in relation to collocation: while collocation can be understood as the inclination of two lexical items (words) to go together, colligation can be seen as the tendency of words to appear together with particular grammatical structures or forms – *The whole team was looking forward to seeing the results of the experiment.*
- Semantic prosody – everything about this characteristic boils down to the fact that a word can have a positive or a negative connotation – *to cause trouble/distress/disease vs. to bring about cure/solution/improvement*
- Semantic preference – his notion can be defined as the relation between a word form and a specific semantic set of words – large is said to typically collocate with vocabulary items from the same semantic set which indicates sizes and quantities: *large number(s)/scale/part, quantities/amount(s)*

## Types of vocabulary

Vocabulary represents an integral part of the processes of language comprehension, i.e., reading and listening, and language production, i.e., speaking and writing. It is compiled of words which are necessary for effective communication and the acquisition of knowledge. In other words, vocabulary involves receptive vocabulary – the words that we hear and read, and expressive vocabulary – the words that we speak and write. It is rightly said that without vocabulary, it is not possible to convey anything. Vocabulary is also usually called wordstock, lexis, and lexicon.

Four types of vocabulary can be distinguished.

**1. Listening vocabulary**
Listening vocabulary consists of words that can be understood through hearing. Acquiring new word should be seen as a continuous process. By the time we reach adulthood, most of us will be able to recognize and understand nearly 50,000 words (Greenbaum, 1996; Tompkins, 2005).

**2. Speaking vocabulary**
Speaking vocabulary includes words that we use when we speak. It can be said that this type of vocabulary is limited since we use only 5,000 to 10,000 words for all our conversations and instructions. The number of words in this category is reduced in comparison to the listening vocabulary.

**3. Reading vocabulary**
Reading vocabulary contains the words we understand when we read a text. Reading is the essential ingredient of a category. By reading, we learn new words and our vocabulary grows and develops. Understanding words that we do not use in our speaking vocabulary is not a rare case.

**4. Writing vocabulary**
Words we can retrieve while expressing ourselves through writing are termed as writing vocabulary. Writing vocabulary is normally influenced by the words we are able to spell. Generally, we find it easier to explain ourselves orally, through facial expression, or intonation, than to locate the appropriate words

to communicate the same ideas in writing. Another important detail is that our writing vocabulary is strongly influenced by our expertise, i.e., the words we can spell properly.

**Activity 9**

**How many words are there in the English language?**

No single sensible answer to this question can be obtained. It would be a futile, or even an impossible job to count the number of words in a language because it is difficult to decide what actually counts as a word. What we it that the Second Edition of the 20-volume Oxford English Dictionary, which was published in 1989, contains full entries for 171.476 words in current use, and 47.156 obsolete words. Over half of these words are nouns, about a quarter adjectives, and about a seventh verbs. On the other hand, certain authors believe that the estimated 450.000 - 750.000 words comprise the English language (Stahl, 1999; Tompkins, 2005).

**Activity 10**

**Can you find four mistakes in the previous passage?**

**Activity 11**

**How many words does it take to define all the vocabulary items in one dictionary?**

Luckily for us, a group of experienced teachers and language experts have meticulously picked a list of 3,000 most significant vocabulary items that learners have to learn and called it the Oxford 3000. These words should receive priority because their significance, usefulness and practicality are imperative in vocabulary study. The whole list is available at the following link https://www.oxfordlearnersdictionaries.com/wordlists/oxford3000-5000. All the definitions in the Oxford Learners' Dictionaries are compiled out of these words, which makes the definitions easy to understand. The Oxford 3000 words can be very easily recognised in a dictionary due to the key symbol that is next to them and they represent an excellent starting point for expanding your vocabulary because they can very often have multiple meanings.

Three criteria were involved in the selection of these keywords. The first criterion is the frequency of words in their corpus, which is "an electronically-held collection of written or spoken texts, often consisting of hundreds of millions of words". In order to find a place on this list, a word has to be frequent across a range of different types of contexts, which stands for the second criterion. According to the last criterion, certain words that are not used frequently but are recognisable by most users of English were put on the list as well. It is claimed that "these words were identified by consulting a panel of over seventy experts in the fields of teaching and language study".

**Figure 1**

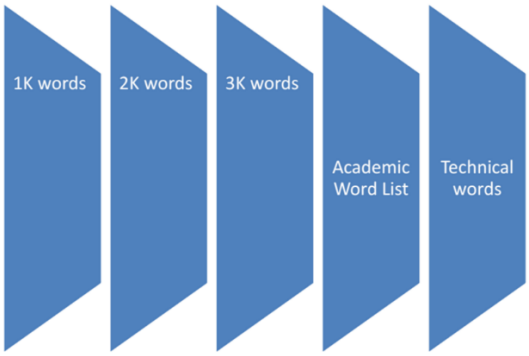


Figure 1 illustrates that the most frequent 3,000 words have to be absorbed if we want to start learning items from the Academic Word List (AWL). The list is available at the following link https://www.oxfordlearnersdictionaries.com/wordlist/academic/academic/ and contains word families based on words that appear frequently in different academic subjects. In other words, AWL items can be found in texts regardless of the academic field of study. Ten sublists can be found in AWL and they are composed in such a way that the first sublist contains the most common words, the second sublist contains the next most common words, etc. Nine sublists have 60 families while the last one contains 30. Only after the 3,000 words and the ones from the AWL have been covered, should we embark on learning subject-specific vocabulary items, i.e., technical words.

## Nominalisation

**Activity 12**

**Define three key notions in your academic field of study.**

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If you use three nouns, you will definitely hit the bull's eye since the academic register is extremely noun-heavy. *The Longman Grammar* (Biber et al., 1999) argues that nouns are particularly predominant in academic prose. However, what will happen when we do not have a noun to use? The answer to this question is uncomplicated – we will create one by means of nominalisation. Nominalisation can be described as the formation of nouns which derive from other forms (e.g., verbs or adjectives). Hyland observes nominalisation as one of the essential features of academic writing (Hyland, 2004) which even dominates the language of science (Halliday & Martin, 2005).

**Activity 13**

**Use noun phrases instead of these verbs.**

investigate - _____ illustrate - _____

analyse - _____ affect - _____

attempt - _____ classify - _____

How important nominalisation is evident from the fact that academics who are not satisfied with the existing nouns are nowadays actively creating new ones (e.g., "the action or process of making something more acidic" in *Cellular IP3 levels exhibit a biphasic increase in the cell after acidification*). Hyland & Jiang (2021) have noticed another phenomenon acting like nominalisation and that is acronym creation. It is described as "the ultimate insider naming practice, completing the transformation of processes into entities through the formation of noun phrases and then compressing these into a series of letters" (e.g., *CIRP is required for high-amplitude circadian gene expression in fibroblasts; Sections were flat embedded with ACLAR film and placed in a 60 °C oven for 48–72 hr*).

**Activity 14**

**Name a couple of newly-created nouns in your discipline.**

**Create acronyms and use them in your own sentences.**

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