

Topic 2. Basic concepts and definitions. The object and subject of research. Research relevance.

Part 1. The course goals and motivation

During the first part of this lecture, we will consider the following important for working on this course issues

1. Why study in English in Kazakhstan?
2. Goals for the course
3. Quick vocab notes
4. Motivation
5. Help
6. How to write request emails

Let's think about

Why study/ (teach classes) in English in Kazakhstan?

Who wants it?

Who does it benefit?

Common motivations for students and teachers are

National policy

University policy

Prospect of future employment/research*

Bilingualism/multilingualism (for example, Kazakh, Russian, English)

Actual benefits to learning content*.

Let's focus on the reasons marked with an asterisk.

Indeed, think about the prospects of your employment in an international company or participation in an international project. Do you have an advantage if you are proficient in research planning terminology in English? Undoubtedly!

Please note that to be an advanced researcher, you have to constantly read and write in English, as most peer-reviewed scientific journals are in English.

To get real benefits from the learning content, you need to motivate yourself to study in English.

The focus of this course is that you can

Absorb the best techniques of research organization and planning

Design your research plan for Master's thesis

Revise your Individual Plan

Find and analyze literature on the research topic

Write a literature review for your Master's Thesis

Design your Master's thesis

All this you will do in English. This is an additional challenge, since apart from this course you are not in the language environment of language 2 (English).

Please note: this is not a language-development course!

Your teacher is also not a native speaker and speaks with an accent. However, it is important that intelligibility is ensured.

Intelligible -able to be understood; comprehensible

I know from experience what challenges a Kazakhstani has to face when working in an American or British academic environment. First of all, knowledge of terminology and its differences can help you.

There is quick vocab note: US Higher Education.

Here are the basic terms for undergraduate (4 years of study).

Undergraduate or college student.

How does an American college differ from a university?

In the United States, you go to university or college after graduating from high school. College in the United States is not a high school. "University" is a group of schools for post-secondary education. At least one of these schools is a college where students receive a bachelor's degree. Whereas a college in Kazakhstan is rather a vocational or industrial school.

Bachelor's Degree/Program (BA, BS)

Good to know that BA/BS degrees are not the same degrees. The key differences between a Bachelor of Arts and Bachelor of Science are that a B.A. typically requires more courses in the humanities (writing, art, history, philosophy) while a B.S. usually has more science and mathematics courses

Major / Minor

What is the Difference Between a Major and a Minor? Majors are primary fields of study, and minors are secondary concentrations that may or may not be related to your major. Although the two can be similar, they do not need to be. Plenty of people choose a minor later on in their academic career.

For example, I graduated from East Kazakhstan state University in 1997. I received BS in Physics, diploma with distinction. My major was Physics, my minor was Mathematics.

Here are the basic terms for postgraduate.

Graduate student

Master's Degree /Program (MA Master of Arts, MS - M.S. Master of Science Typically awarded to graduate students in scientific or technical fields; MBA . Master of Business Administration typically oriented around subjects like accounting, marketing and analysis, etc.

Master's degrees are graduate-level programs that typically take two years of additional full-time study after completion of a bachelor's degree.

Next goes Doctoral Degree/Program (PhD)

These degrees have their major, field and specialization

British versus US English are presented in Table1

Table 1 British /US English

British English	North American English
school	high school
university / uni	university / school
module	course
postgraduate student	graduate student
(undergraduate/master's) dissertation	(undergraduate/honors/master's) thesis
doctoral thesis	doctoral dissertation

Here are some examples of learning motivators in Fig 1.



Figure 1 - Motivators

Never give up! Go over, go under, go around, go through, but never give up!
Stop wishing, start doing. Cut it off in I can't, turn it into I can!
Actually, these are good motivators for all occasions, aren't they?

According to the Self-Determination Theory, L2 (that is English language in our case) selves are “moving pictures” not a “static target” (Henry, 2015)

The dynamic model idea could be well illustrated by this live portrait from the Harry Potter movie.

The harder you study, the more experience you have, the more confident you become and the experience changes your motivation.

In fact, it changes from Extrinsic Motivation (that means externally enforced by grades, punishments, rewards; means to an end)

to Intrinsic Motivation (that means inherent desire to extend, learn, seek out challenges)

Intrinsic motivation may lead to persistence and higher success in L2 (Ryan & Deci, 1985; Noels et al., 1985)

It also may lead to higher success in studying this course, oriented on your professional development.

If you need to get help, follow these steps.

Did you receive Announcements from Open EdX?

If not, you have to set your default email and notifications

Contact technical support (the help desk) for account problems

Email me (dalontseva@edu.ektu.kz) for anything! (In English!)

For your requests to be successful, you need to know how to write a request email. Let's take a look at these three student email examples, kindly provided to me by Dr. Nigel Caplan from the article C.M. Tardy, A.M. Johns, & N.A. Caplan (in preparation). Genre: Frequently Asked Questions. University of Michigan Press. Let's think about which one is most likely to be successful?

- Email #1:

Dear Professor Tardy,

Is it possible to request a small extension on the Class Observation paper? I have 4 assignments due at the same time and there are literally just not enough hours in the day to accomplish everything.

Best,

(Student)

- Email #2:

Dear Dr. Tardy,

I hope this email finds you well. I regret to inform you that due to my poor time management I will be unable to complete the Student Feedback Assignment by the start of class today. I humbly request an extension until midnight tonight in order to

complete the assignment. I am more than willing to accept whatever penalty you see fit.

Regards,

(Student)

Email #3:

Hi Dr Tardy,

Can I get an extension on the article annotations? I'm running out of time...

Thank you

(Student)

I love this smart thank you in advance at the end! A kind of motivator for a teacher. No one of these emails is perfect! But all of them include one *key (and required) move of these emails is **request** itself. In this case it was **request** an extension*

In fact, when you write an email you have to

greet the instructor and provide an explanation for your request

- ***open the communication politely***
- ***accept responsibility***
- ***indicate your Full name***

As your optional writing assignment try to rank-order the sample emails from most to least successful and make comments – why do you think so?

Examples of unsuccessful requests (provided by our “Online courses in Open EdX” team)

- *Here is a request to our help desk. He thinks that we can read his mind and know what course he wants it to for. "**Hello, where can I get a syllabus?**"*
- *And another one that leaves a lot of guesswork: **Where do I find the final score?***
- *This one is a mystery. No idea what they actually wanted. "**Course development**"*
- *This is borderline rude... The student was entirely at fault for not following preliminary steps, which prevented us from giving them access to the system.*
- ***"Please give me access to my course template. Today!"***
- *One more for good measure from Aigerim. We probably course have added her if she would have used her university email address or **last name**... Our university database lists at least 292 students with that first name....*
- ***Please add me to course "Developing an online course in Open edX"***

Let's summarize the results of today's lecture.

Learning Outcomes

You are

- able to answer the question “Why are you studying this course in English” and explain the focus of the course and your motivation
- able to distinguish between Higher Education British and US English
- able to write polite and successful requests

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UD is abbreviation for University of Delaware, US

Part 2. The object and subject of research. Research relevance.

During this lecture, we will consider the following concepts that are important for working on your final project, that is, your master's thesis, as

1. The definition of object and subject of research
2. How to define the object and subject of research?
3. Research relevance

I am planning to give you some tips (and some helpful examples) of working on a master's thesis, i.e., on a research paper or research proposal. When working on any research paper, there are three main steps.

The first step you need to take when you get the task of writing any research paper is choosing a topic you want to dwell upon. It is advisable to select an issue you are personally interested in. You really need drive to have fun with your research!

Start by figuring out what the object and subject of research are.

Then, proceed to gathering all vital information to be able to support all your arguments.

Please note that this is not about choosing your paper's title yet. It is better to save the choice of a title for later, when you figure out what will be your general topic, and most importantly, what will be the object and subject of research.

The **object** of research is a thing or phenomenon that can be observed or measured.

The **subject** of research is a category, a model or an idea.

This diagram (Fig. 1) on the slide illustrates well the relationship between the researcher, aspects of a scientific problem (aspects of the world) and the object and subject of research. Look at this closely. It is important to understand that you are doing research in order to solve a scientific problem. Think of the world aspects in this diagram as the topic you are interested in.

For example: If you want to analyze a social media platform, such as *facebook*, the object of research will be posts written by its users. The subject of research are the topics of those posts.

Another example. If you want to automate some technological process, then the object could be this process, and the subject could be a model (algorithm) of its control.

It could also be said that in some research studies objects are quantitative while subjects are qualitative. However, a lot depends on the issue under consideration.

How to define the object and subject of research?

First of all, analyze the topic you have chosen to research in detail. Think about the subject you want to study in detail, as well as the tools which you are going to use. If you have metrics with the help of which you can measure this phenomenon, they will be the object of research while the issue in general will be the subject.

For example, for research in the field of materials science, with the title “Microplasma spraying of Ti coatings with desired structure and properties”

- The object of this research is a microplasma sprayed Ti coating and its structure (porosity, surface roughness) and properties (adhesion to substrate, microhardness). Parameters of structure and properties are measurable.
- The subject of this research is influence of spraying parameters on the structure and properties of the coating
- The subject of research is certain patterns that can be analyzed and ideally expressed as an equation.

For example, you can find the dependence of the porosity of the coating on such parameters of microplasma spraying as electric current I , plasma gas flow rate Q , spraying distance H , and wire or powder flow rate V .

Then in this equation (1) you could find the numerical values of all the coefficients and could spray coatings with controlled porosity.

$$\bullet \quad \% \text{ Porosity } (Zr) = k_1 + k_2 I + k_3 Q + k_4 H + k_5 V_w \quad (1)$$

I illustrated this example with photos taken in the process of my research. Obviously, when you think about the object and the subject of research, you are thinking about

the research methodology. How exactly can you get the data, what measurements should you take?

This will be the next step in planning your research and the next few lectures in this course will be about it.

Now I would like to give some advice on justifying the relevance of your research.

So, what is Research Relevance?

This diagram in Fig. 2 clearly shows what is the relevance of the study. To be relevant, any research has to be interesting, current and applicable.

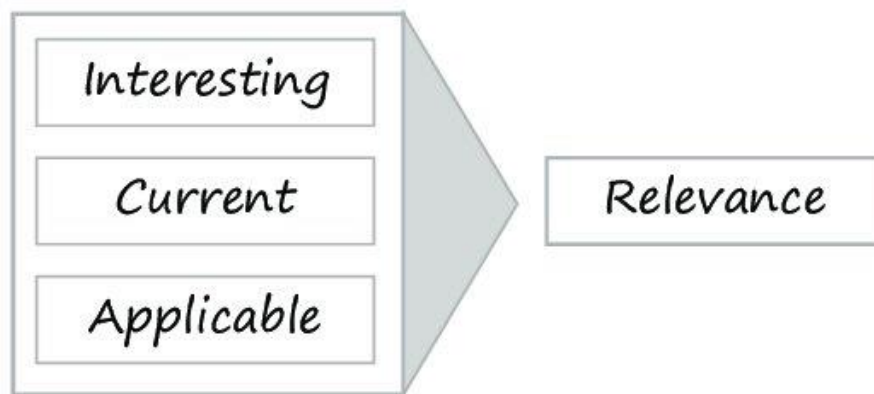


Figure 2 – The relevance of research

This implies that your research, or rather its results, should be of interest to other researchers or representatives of industries and businesses. It must be current and applicable.

Research in applied fields has to be responsive to the needs of business and industry to make it useful and practicable for them. There are four dimensions of relevance in research which deal with the content and style of research articles. For an article to be relevant it must not only be interesting, applicable and current to the needs of the practitioners but should also be written in an accessible and simple style.

How do you know if your research is relevant?

Read widely the relevant articles on the topic.

Check out government policies to support research.

(You can find some useful links in your syllabus)

Explore the website of your university (science and innovation section)

Ask your research advisor (consult, suggest your ideas!)

Participate in research in your department

Let's read an example of the rationale for the relevance of a study.

To begin with, you can point directly to government priorities and compliance with them.

- The topic of the thesis "Title of the master's thesis" corresponds to one of the 10 priority areas of science development for years from 2021 to 2023, approved by the Supreme Scientific and Technical Commission of the Republic of Kazakhstan on April 29, 2020 (https://nauka.kz/page.php?page_id=16&lang=1&news_id=8791), namely the priority "Information, communication and space technologies"

Then it should be clarified. Pay attention to the beginning of the sentence indicating the current state of affairs.

- In recent years (or currently, or nowadays), research on the application of nonlinear control of a multi-link robotic arm has been in the focus of attention of researchers around the world, representing significant scientific and practical interest.

Indicate the area of possible use of the results, i.e. practice.

Such robots are used for loading, painting, packing, etc.

In the final sentence, go straight to the point!

The development of algorithms for nonlinear control of a robotic manipulator for specific technological process is of great scientific and practical importance.

Here are some tips for the title of your research. In most cases, you have already decided on the title of your master's thesis, that is, these are rather tips for translating the title into English.

One of the most frequently used words in a title is development or design.

Development is the process of developing or being developed

For example, you can say "Development of new technology..."

Design is a plan or drawing produced to show the look and function or workings of a building, a process or other object before it is built or made

For example, you can design of an information system for data processing

Let's summarize the results of today's lecture.

Learning Outcomes

You are able to distinguish between the object and the subject of research;

You are able to rationalize the relevance of your research.