

# Reflect Lab

Supporting Lecturers in Applying Inquiry-Based Learning



## Intellectual Output 2: Manual for Learners

Leading Partner 1: P5 Universidad de La Laguna



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*Dear Reflect Lab Participant, Dear Student!*

*This manual will support you in making your portfolio as foreseen, using the learning method proposed by the Reflect Lab. It contains information about the development of the portfolio as well as the research methods you are likely to employ.*

*The Reflect Lab method aims at supporting you in developing the necessary skills needed when researching topics that are discussed in a confrontational and thought-provoking manner. This manual will help you to develop your own research questions within such topics, choose the appropriate research method to address these questions and present it in the format of a portfolio. Such an inquiry-based learning (IBL) approach recognises that new questions will always arise, and this is why such a manual cannot be a complete guide in regard to the research. It will however give you advice on how to proceed and where to turn when you are uncertain about your next steps – or about how to start.*

*In the following pages, you will find information on the Reflect Lab method, as well as on the process of social science research. Please be aware of this that this short manual can only give you an introduction into different research methods that can be of interest for your research project. Please consult the specialised literature in the library of your university for further and more detailed information.*

*Research can only be learned by conducting research, which requires work and dedication – and it is worth the effort! We wish you good luck with your learning process and hope that this manual will be of use for you!*

*The Reflect Lab team*

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## 1. The Reflect Lab Methodology

In the laboratory of reflection – or, more succinctly, in the Reflect Lab – you will be exposed to stimulus material that addresses a topic, selected by your teacher. The content of this material will depend on the current debates in your country as well as on the curriculum of the programme you are studying. In addition, the instructions on how you should develop your portfolio will depend on specific guidelines of your university. However, the process entails several steps that will be similar no matter where the Reflect Lab methodology is implemented:

1. You will be exposed to stimulus material. This can be a comic, a picture, a controversial and biased text, or a balanced discussion on a topic of an interest. Currently, such topics could be: the rise of right-wing movements, the unity or lack of unity within the European Union, migration, the situation of refugees, etc. Consider that these materials address not only a topic but also do so in a very different ways. The stimulus material might wish to explain, to polarize or to provoke; it might be presented in a serious or thoughtful voice, cynical, or as a joke. It is important that you consider these different options and, based upon this first assessment, decide on how to interpret the material and think of possible research questions.
2. You will be asked to create a mind map based on the stimulus material. At this stage, the mind map will help you to structure the information you have received, your ideas, questions and doubts. A mind map is a graphic representation of all the thoughts you have. You can include texts, numbers, arrows, sketches etc., and you can arrange them in the way that best reflects your thoughts – many forms of diagrams are possible, and arrows can suggest logical sequences as well as circular relations. The mind map helps you to brainstorm your ideas, to visualise them and to structure them. You normally start with a central term in the middle of the map and then add branches and ramifications. This way you structure your ideas, associations and doubts. Mind maps can be created either on paper or electronically – there is free software available, e.g.: <https://www.canva.com/graphs/mind-maps/>, <https://www.mindmup.com/> or <http://mindmapfree.com/>. Please keep your mind map for your portfolio; it will help you to reflect at the end about your learning process.

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3. You will be asked to develop your own research idea related to the general topic. This is a crucial moment for you: you have to choose a research question (or questions) you can answer within the given time. The methods of research you choose depend on this question/s, as well as the conclusions you can draw. Finding the appropriate question is not easy, you should dedicate enough time and attention to this step, and you should be willing to be flexible when doing so. The outcome of your research will be measured with regard to the questions you formulate: could you answer the question? Have you chosen the most appropriate methods for answering your question? Given the nature of the stimulus material, your question could relate to the content, e.g. climate change. Your question could also relate to the means used to promote the topic, e.g. which kind of cartoon proves useful to make such a topic popular, or which media strategies are used by people who support or disclaim climate change. You could also consider a theoretical question: which explanations and theoretical approaches are available to explain the denial of a catastrophe by people who are directly affected by it? Are they satisfying in explaining the denial of climate change? Assess whether you will be able to answer the research question you are developing within the scope of the Reflect Lab.
4. Document the steps you are undertaking: what kind of scientific literature or archives are you consulting? How have you adapted your research questions, in case you did so? How did you choose the adequate and appropriate methods? How was your process of research? What worked out well? Where are gaps and problems? Which conclusions have you been able to draw, and why? It is crucial for any research to document all these steps properly, as research has to be comprehensible and reproducible. The better you document all your steps, the easier it will be for you at the end of the whole process to compile your report and/or portfolio.
5. The portfolio should include all the formal data required by your university (your name, your number of inscription, the name of the course, the name of your tutor, a list of content, the development of your research questions, the documentation of your research process, your conclusions and lessons learned, etc.). Some details depend on your university so please check with your tutor what is required.

Conducting your own research is a key element of the Reflect Lab. You may opt for empirical research in the relevant context of your Reflect Lab – but even if you mainly consult academic

articles and books and do not immerse yourself into empirical research you still need to have sound criteria to evaluate the texts you are reading and analysing.

## 2. What is research?

What do we mean by investigating or conducting research? A simple explanation could be: to look for an answer to a question. However, we could ask: are we performing a scientific investigation when we seek an answer in our daily life? For example, when we try to find out which documents should be completed to succeed with this university course?

The search for answers in a scientific research has to fulfil certain criteria and should be:

- *Systematic*: the research must have a methodological strategy formed of several stages or phases
- *Controlled*: the conditions which the research is conducted in (who to investigate, how, where and when to investigate) should be planned
- *Stable*: research is a process that stretches out over time
- *Generating*: the research seeks to increase scientific knowledge
- *Empirical*: the researcher carries out fieldwork to check the possible response to the research problem
- *Self-critical*: the researcher should not fall into complacency, but should question and review: a) the decisions they make during the research and b) the possible answers and results of the study
- *Subjected to public criticism*: the research must be exposed to the scientific community so that they may comment on its scope and limitations.

Any search for answers that does not meet any of the above criteria may be an inquiry, but not a scientific research process. However, what can be considered to be systematic, controlled, stable, etc. depends on your research question and the research methods employed. You will find more information in relation to this matter when we discuss different possible formats of a research question.

### 3. Which skills should you develop as a researcher?

The realisation of a scientific research process, in addition to requiring knowledge about the field under study and about research methodology, requires possessing of certain abilities/skills.

At the beginning of the research process you should ask yourself the following questions:

- Are you interested in finding answers to questions in relation to social sciences and related practical problems?
- Are you willing to read a lot, including the footnotes of a text, and put an effort into understanding and analysing it?
- Do you have sufficient knowledge about the research methodology and are you willing to amplify this knowledge?
- Are you easily discouraged when you come across difficulties?
- Are you able to create a working plan with tasks?
- Do you carry out your work in a methodological way?
- How do you find out about all the alternatives and consequences before making a decision?
- How do you explain the decisions you make during research?
- How do you ensure that you comply with ethical standards and requirements as outlined, for example, in the ASA Code of Ethics<sup>1</sup> or BSA Guidelines of Ethical Research<sup>2</sup>?
- Are you able to admit mistakes and correct your decisions?
- Are you capable of sharing your findings and recommendations and accepting criticism in regard to your work?

Please note that the skills & abilities related to the above questions are crucial for your success in conducting research. Feedback and supervision should be considered in a reflective manner in order to develop your skills further.

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<sup>1</sup> <http://www.asanet.org/code-ethics>

<sup>2</sup> <https://www.britsoc.co.uk/ethics>

## 4. Why do we conduct research?

We conduct research because we want to increase our knowledge, understand and explain social phenomena or provide solutions to problems. In development of current academia, social scientists originally aimed at developing models of understanding social phenomena based on natural sciences before developing methods that would lead to understand these social phenomena. We respect this historic development when we introduce new approaches of social science in order to explain, understand and transform social realities.

### 4.1. Researching to explain – by developing (mathematical) models

In the 19<sup>th</sup> century, social sciences had been born out of natural sciences and aimed at explaining social phenomenon on models based on concepts of the natural sciences of that time, i.e. on physical and mathematical models of the era. The idea of that approach is that:

- social reality can be captured as objective
- human beings respond to stimuli of their environment in a mechanical way
- social reality is being governed by laws similar to that of physical phenomena
- the only way to increase knowledge about social phenomena is to stick to observable and measurable aspects.

Within this research perspective, it is a priority to discover laws that govern social phenomena and establish causal relationships that can be generalised. This should lead to authoritative forecasts. This approach asks the researcher to focus on measurable manifestations of social reality, to perceive social reality as a system of variables that can be separated for measurement, to select variables and establish causal relationships between them, and is based on the illusion of a neutral and value-free researcher.

This positivist perspective, i.e. the idea of gnosis based exclusively on measurable data, has been developed historically by Auguste Comte, John Stuart Mill and Emilie Durkheim, and been further developed by Karl Popper, Thomas Kuhn or Imre Lakatos and tends to be based on quantitative research methods. While positivism meant progress with regard to the earlier approaches, its limitations became visible soon. It has been severely criticised especially by feminist and post-colonial research approaches, as the illusion of a neutral and value-free researcher usually favours the positions and interests of elderly, well-established white male researchers and excludes the realities and perspectives of less privileged social actors.

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Please consider the following summary of research:

The objective of this study was to analyse whether there are differences in perceived family support and in the academic expectations of young refugees based on sex. The study was carried out with 250 unaccompanied refugee boys and girls from the Middle East hosted in Italy. A questionnaire of 10 multiple-choice questions included questions on: family, personal and academic data, a scale of perceived family support and a scale of academic expectations. A statistical analysis of the data was performed. We can assume that there were significant differences between the young people according to sex: the average scores of the girls in the scale of perceived family support were significantly higher than the scores of the boys; the girls had higher academic expectations than the boys did.

This study has the characteristics of positivist research:

- The researcher selects variables and aims to verify that there are causal relationships between them
- Measurable aspects of people are observed, analysed and described in a rigorous way
- It focuses on the similarities of individuals, rather than on their particularities
- The researcher keeps a distance from the research subjects and is not interested in their individual interpretations or perspectives. While the vocabulary has changed from “research objects” to “research subjects”, in practice the individuals that make the career of the researcher possible continue to be treated as objects.

#### **4.2. Researching to understand**

In this perspective, human and social phenomena differ significantly from natural phenomena, and therefore social sciences have to be developed independently from natural sciences. Physical and mathematical models cannot be applied in social science. In this perspective, social reality is built on a day-to-day basis; it is framed by intentional (and unintentional) actions of human beings, and by their interpretation of these actions. Social reality is the sum of a set of different visions by the subjects involved in constructing it, i.e. it is multiple. It is holistic as its components are in mutual interaction, they cannot be split into variables but

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must be analysed in their interdependence. The behaviour of individuals is considered to be motivated by rational thought and intention, not by laws of behaviour.

This approach to research rejects the idea that the physical and mathematical model of science is the only valid one. It considers the purpose of social research as contextual and intentional, the researcher is interested in understanding social reality based on the meaning that subjects give to facts and behaviour. These meanings cannot be directly observed or captured easily by quantified methods. In this approach, research seeks to understand differences, individual interpretations, particular processes of sense making, and understanding of phenomena at a certain time and place. It is acknowledged that the values and interests of a researcher influence his or her choices and perspectives, i.e., the researcher does not work from a God-like external position but is intrinsically linked with his or her research subjects, and has to disclose his or her position. While the researcher does establish a collaborative relationship with the subjects of research, he or she has to be able to disentangle him or herself from these relationships, interpret the processes taking place in the research context, and not simply adopt the point of view of the research subjects.

This research approach is linked to the Aristotelian tradition; it was developed in opposition to positivistic approaches and based on phenomenology, hermeneutics and symbolic interactionism and often focuses on qualitative research methods. One of the most famous and influential founder of the then new approach was German sociologist Max Weber. Theodor W. Adorno is another important representative of this approach.

The conflict between the two approaches became known as the “dispute over methods” or “dispute over positivism” in the 1960s in German sociology. Since then, most researchers would reject a rigorous separation of these methodologies and agree that qualitative and quantitative research benefit each other mutually and should be applied as necessary and according to the research questions.

Please consider the following summary of research:

Researchers intent to understand the perspectives of young unaccompanied refugees from the Middle East with regard to their academic expectations after living one year in a refugee camp

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in Italy. The research team is composed of an equal number of men and women who are fluent in Arabic and visit the refugee camp on a regular basis. They consider the quality of the relationships they have been able to build with the unaccompanied refugees and plan the interviews accordingly. Based on the content of the informal conversations they had with the young people, as well as literature-based comparable research projects, they develop a flexible interview guide and test it. They are specifically interested in understanding how these young refugees perceive supportive structures, whether they have a positive impact on their academic perspectives, and which other factors they consider important. The researchers aim at interviewing an equal number of girls and boys and look out for religious, ethnic and social diversity among them.

This study has the characteristics of an interpretative research:

- The researchers are interested in understanding the perspectives of the young refugees in the camp and analysing the meaning they attribute to the supportive structures
- The aim of the research is to understand the individual and singular interpretation process by each of the interviewed person
- The understanding of these perceptions is linked to the specific context, in this case, one year of living in a refugee camp
- The ideas and values of the unaccompanied minors are taken into account to understand their perspectives
- The researchers establish a collaborative relationship with the subjects being investigated and reflect about the best possible way of interacting with them.

#### **4.3 Researching to Transform**

This approach to research arose as a response to both positivist and interpretative approaches to social sciences. According to this perspective, an investigation must not only explain and understand the reality studied, but also contribute to its change. Research is the instrument used by people to analyse social reality, become aware of their situation and be involved in its transformation. It has developed in different academic settings including The Chicago School of Sociology (Robert E. Parks, etc.), Action Anthropology (Sol Tax, etc.) and the Sociologie de l'Action (Alain Touraine). The Frankfurt School of Critical Theory has provided important input

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to the development of this approach to research. Other critical positions like feminist research and post-colonial perspectives have amplified it.

The socio-critical perspective of research is characterised by denouncing the reductionism of positivism and the conservatism of the interpretative perspective. It considers that social studies should be more than a description of reality but supports progressive change and modification of social context, and it rejects the idea of neutrality of science and demands researchers to reflect about their role in perpetuating unjust social relations. The approach also aims at making the results of research available to the subjects of research and thereby provide them with insights into ideological or other constraints that hinder the modification of social situations. Currently, representatives of this approach aim at elaborating research questions and research methods together with the concerned population<sup>3</sup>.

Research based on this approach considers that social reality is dynamic and evolves, and that the subjects involved in this reality participate in its configuration and construction. Research has an ideological and socio-political dimension. The subjects' interpretations and ideologies as well as the historical and socio-political circumstances must be taken into consideration in order to understand reality. Research must be committed to the transformation and improvement of social reality through criticism and reconstruction. This transformation must be a process committed to clarifying the interests, values and assumptions that underlie the social context. There is no hierarchy of roles in research but a participatory dynamic. The researchers are also subjects of the investigation. It is intended to establish symmetrical relationships between the participants and to make decisions in a democratic way. The subjects share responsibilities in the definition of the problems to be investigated, in how to collect the information and analyse it, and in the planning of the actions for the change.

Please consider the following summary of research:

Within their study, the researchers intend to create a space for young unaccompanied refugees in a refugee camp where they aim to support these adolescents in a situation of

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<sup>3</sup> See, for example, this review of eight books on Indigenous Research Methods recommended by Helen Kara at the London School of Economics: <http://blogs.lse.ac.uk/lseireviewofbooks/2017/07/26/reading-list-8-books-on-indigenous-research-methods-recommended-by-helen-kara/>

dependence and restrictions to develop their own ideas of how to transform the camp and their living circumstances in order to improve their perspective for a self-determined future. The researchers gain the approval of the adolescents, and the management of the camp, to discuss the possible aims of such an action research as well as the necessary information and the methods to gain this information. A core group of unaccompanied minors decides to actively approach all members of the concerned group in the camp but wishes to include also adolescents who live in the camp with their parents. The unaccompanied minors approve this idea. The extended group discusses the information needed: a status quo of the adolescents in the camp, their wishes and aims, but also a list of experts, who can help them to transform their living situation, e.g. a legal advisor. During the collection of the data and after having listened to a first round of experts, the adolescents decide to form two sports clubs, one for the girls and one for the boys, and ask for support for finding mentors for their education. With the researchers, they elaborate a list of institutions, including schools, after-school care clubs and the local church, and ask them for this support.

This study has the characteristics of a critical research:

- The research is committed to the transformation of a situation: improving the perspectives of unaccompanied minors in a refugee camp
- There is only little hierarchy among the members of the team: the adolescents share responsibility in defining of the problem, the identification of the factors associated with the problem, decisions on how to collect the data and analyse the information, the planning of actions for change, etc. However, outside the research situation, the privileged situation of the researchers is obvious: they live outside the refugee camp and have academic training
- Not only the interpretations of the subjects are taken into consideration, but also the difficult context which generates the situation they interpret and intent to change
- Research is a process committed to clarifying and criticizing the behaviours, interests, values and assumptions that underlie the situation, with the intention of changing them
- The transformation of the situation implies learning and the personal/professional improvement of the adolescents.

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## 5. The stages of a research process

For the development of your portfolio and the corresponding research you need to have some basic information about the research process. On the one hand, some aspects of the process are predefined by the context of the Reflect Lab. On the other hand, certain aspects and steps of research are common to most research projects, and it is helpful for you to know them. In order to answer your research questions, you will have to think about your research strategy and the corresponding methodological steps or stages. These stages differ according to the three research approaches you were introduced to in chapter 4.

In the process of the Reflect Lab, you will be confronted with a specific **topic (5.1.)**. Thus, while processes of research are cyclic, and topics of research are also generated by research, due to the specific situation of the Reflect Lab, we will start our explanations about the steps of research at this point. Please reconsider the examples you have read about in the chapter 4. All three examples of research deal with the topic of unaccompanied minors in a refugee camp. In the Reflect Lab your tutor chooses the general topic you will be dealing with. However, the three examples address very different **research questions (5.3.)**: example one asks for correlations of variables, example two asks for the individual interpretations and perceptions of young refugees whilst example three asks for obstacles and tries to find viable solutions based on the needs of young refugees in a camp. It is not at all easy to develop a viable research question and you should ensure that you dedicate enough time to this step. A precise research question is your compass through the research process; it will guide your research plan and the selection of your methods and help you to keep on track. A research is evaluated (and marked) with regards to this research question and your capacity to answer it. In order to develop your research question, you have to **revise/analyse** the corresponding **academic literature (5.2.)**. Once you have identified your research question, you have to prepare your **research design**, i.e. you **select the appropriate research methods** and **create a research plan (5.4.)**. Try to be realistic: how long is your term and how much time will you be able to spend on the research for the Reflect Lab? At this stage, you might wish to adapt your research question. Your next step will be the implementation of your research plan, i.e. the **collection of data (5.5.)**, followed by the **interpretation of these data (5.6.)**, the **drawing of conclusions (5.7.)** and the elaboration of your **research report (5.8.)**. In the context of the Reflect Lab, you report about your research in the format of portfolio. Ideally, this is a circular

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process and your research leads not only to results but also to new research questions. In the further chapters of this manual, we are going to discuss these steps in more detail.

### 5.1. The research topic

The research topic can be the result of bibliographic research, of public discussions or of practical problems. In the context of the Reflect Lab, the research topic is chosen as appropriate, given the public and polarized discussions in your country. You are therefore requested to develop a response to such discussions based on research and reliable data.

### 5.2. The literature review

The review of the relevant academic literature will help you to:

- identify relevant research questions
- gain insights about relevant theories with regard to the topic
- acquire the appropriate terminology
- know the current status of research
- explain the need of your study
- inform yourself about research methods already applied when investigating the topic
- prepare your research questions and research plan.

For the literature review you can draw on monographs, edited volumes, handbooks (for the context of the topics raised in chapter 4, that might be the Oxford Handbook of Refugee and Migration Studies, for example), academic articles, conference proceeding and unpublished literature, e.g. theses or unpublished reports of research projects.

Several online databases are at your disposal and provide you with plenty of sources:

- <https://www.jstor.org/> and <https://scholar.google.com/> are the most popular online research database
- Education Resource Information Center (ERIC) of the Institute of Education Sciences of the US Government <https://eric.ed.gov/> ERIC provides access to more than 340.000 articles, thesis, reports, etc. (free source)
- The European Commission offers Eurydice, a data base about European educational systems and related research: [https://eacea.ec.europa.eu/erasmus-plus/library\\_en](https://eacea.ec.europa.eu/erasmus-plus/library_en) or
- [https://webgate.ec.europa.eu/fpfis/mwikis/eurydice/index.php/Main\\_Page](https://webgate.ec.europa.eu/fpfis/mwikis/eurydice/index.php/Main_Page)

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- Plenty of statistics of the European Union are available at <https://ec.europa.eu/eurostat>
- All sub-organizations of the United Nations have extensive online libraries and provide free access to many documents, e.g. UNESDOC by the UNESCO: <http://www.unesco.org/new/es/unesco/resources/online-materials/publications/unesdoc-database/>

Given the enormous amount of literature available, you must specify your research, select appropriate keywords, limit the period you research, etc. Research masks will normally allow you to use basic operations of Boolean algebra, i.e. AND, OR and NOT in order to combine keywords. You might wish to consult the Thesaurus <http://vocabularyserver.com/tee/en/> in order to select appropriate keywords.

At an early stage of your research you should consider a system for storing and classifying the literature you wish to save and work with.

### **5.3. The identification and formulation of your research question**

In the context of the Reflect Lab, your ideas about an appropriate research question most probably do not derive out of extensive literature research but are most probably intimately related to your experiences, presumptions, prejudice and theoretical approach – whether you are conscious about them or not. It is important that you are aware of these presumptions so that you can critically reflect on how they influence your research. A research question should be: a. clear and concise and b. answerable through the research tools of social sciences. Research questions do not contain value judgements. Below research questions meet the necessary criteria:



1. Descriptive	What attitudes do Spanish teenagers have towards the process of integration of the European Union?
2. Descriptive	Which socio-familiar characteristics have young French people who vote for far-right parties?
3. Correlation	Is there a relationship between the attitudes of young Europeans towards the EU and their attitudes towards the reception of refugees in their country?
4. Experimental	Does holding a training seminar on the causes of emigration to the EU influence the attitudes of young people towards the reception of refugees in their country?
5. Interpretative	How do adolescent immigrants interpret xenophobic behaviours of certain sectors of the population of the host country?
6. Interpretative	How do young Eurosceptic people imagine the political model of the European Union?
7. Applied	How can the social integration of the refugees sheltered in our community be improved?

Please consider the criteria listed in chapter 2 in order to evaluate your research question.

#### 5.4. The research design

Once the research question has been formulated, it is necessary to find a way to answer it. The research methods depend on your research question. In the process of preparation of your research plan, you need to consider all the necessary steps for your data collection. Please note that you will also need time to interpret your data and write the final report, i.e. compile your portfolio. Start your schedule with the deadline dates in mind: when do you have to hand in the final result or portfolio? How much time will you need to revise your final text etc.? It will depend on your research question how you are going to proceed. In case if you only have time to conduct literature review you should still be able to apply criteria for evaluating the research design, the empirical data and the research undertaken by the authors whose work you are reading.

Consider our first example where researchers asked whether there are differences in perceived family support and in the academic expectations of young refugees based on sex. The researchers opted for a quantitative research where measurable variables are developed, they formulated a hypothesis and the collected data served to proof or refute the hypothesis through a mathematical operation. When you conduct quantitative research, you also have to formulate a Null hypothesis  $H_0$ , i.e., hypothesis which suggests that there is no relationship between two measured phenomena. In order to control your results, you test this Null

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hypothesis as well as your hypothesis  $H_1$  which does assume a relationship between the variables.

See another example:

**Research problem:** Does holding a training seminar on the causes of emigration to the EU influence the attitudes of secondary school pupils towards the reception of refugees in their country?

**Hypothesis:** Secondary school pupils, who participate in a training seminar on the causes of emigration to the EU, will have an average score on the scale of attitude towards the reception of refugees significantly higher than the average score of pupils who do not participate in the seminar.

The hypothesis proposed is indicating that:

- The subjects must be secondary school pupils and they do not have precise previous information about the causes of emigration to the EU
- An initial questionnaire should be applied to determine the level of pupils' information on the subject
- Two groups of similar characteristics will be formed with the selected pupils: one group will attend the seminar and the other group will not
- An attitude scale towards the reception of refugees will be applied to the pupils of the two groups when the seminar ends
- A comparison of the average attitude scores of both groups will be performed
- There will be a check to see whether the mean score of the first group on the scale is significantly higher than the mean score of the second group.

Whilst there is a creative component to the formulation of hypotheses, they also have to be based on knowledge and experience. They have to be based on the literature review and they should take into consideration the rules of creating a sound questionnaire. The hypothesis must:

- be relevant to the research question
- must express the expected result clearly and concisely
- must be formulated in a way that makes empirical testing possible
- be related to the relevant theoretical background, etc.

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At this point we would like to invite you to consider our second example where researchers intent to understand the perspectives of young unaccompanied refugees from the Middle East with regard to their academic expectations after living one year in a refugee camp in Italy. Whilst you do not formulate a hypothesis at the beginning, you should confront yourself with your presumptions about the situation of these young people and their perspectives. This is the only way how you can reduce the influence of your presumptions on your research as much as possible. For your research plan, you have to consider how you will approach the refugee camp, how you are going to address the young people, what questions you would like to ask them and why, and which setting is the best for the interviews you will conduct with them. You have to create the guideline for your interviews as well as to make decisions about whom to interview and how to record the interviews. During your research, you develop a working hypothesis about the different expectations and explanations given by the minors.

In our third case, your research aims at supporting changes in the refugee camp, which allow unaccompanied minors to improve their educational and professional perspectives. Whilst you need to consider your approach to the young refugees and your questions, your research is cooperative and open, your research subjects come up with proposals also about the research process, and you have to be flexible enough to accommodate such process. It is useful for you to conduct the literature review about successful and failed projects for the improvement of a camp situation for unaccompanied minors, and it might be of interest to discuss these examples with the adolescents. Together with your research subjects, you develop a hypothesis about the action you undertake together. You have to be very flexible in your role as a researcher and supporter of social change.

As a reader of a research paper, you should be able to identify the research question and the research approach and design chosen by the author, and you should reflect about its coherency.

### **5.5. Collecting data**

How you carry out your study and which decisions you make depend on your research question. How many people will participate in your research; how are you going to select them – i.e., what should be their characteristics; what information do you need to obtain; what techniques and tools will you use for obtaining the information; how will you analyse the information obtained?

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In order to answer these questions you need to possess knowledge about sampling techniques, research designs, data collection techniques and tools, and data analysis techniques as well as about instruments and techniques to collect data. Importantly, when you read a research paper, you should be able to identify all these aspects of the research.

### **5.5.1. Sampling techniques of participants**

In a research of positivist nature, data about the whole population is needed. In general, this is only possible when you research small groups. Whenever it is not possible to gather all data, you have to select a sample, i.e. a representative subset of individuals of the population. There are different ways of creating samples and calculating their appropriate size in order to receive representative data. You can access the following websites to obtain information regarding calculating the appropriate size of a sample: <https://www.surveymonkey.com/mp/sample-size-calculator/> or <https://www.surveysystem.com/sscalc.htm>. A sample is representative of the population when it reflects the characteristics of that population. The selection of a sample of individuals is called sampling. Probabilistic sampling is used to extract a representative sample of a population, respecting the principle of equiprobability. The probabilistic sampling fulfils this principle, i.e. when all individuals have the same probability of being chosen to be part of the sample and when the selection of one individual does not influence the selection of another. Various sampling techniques exist (e.g. simple random sampling or stratified random sampling, random cluster sampling and multistage sampling).

In a research of interpretative nature, the researcher focuses on the in-depth study of one (single case design) or several specific cases (multiple case design). The interest of interpretative research focuses on understanding how a certain socio-educational situation occurs and reconstructing the process; therefore, the meaning that people give to their behaviour and to the facts in which they participate is analysed. The selection of cases is carried out by non-probabilistic sampling techniques, i.e. through intentional sampling, where the researcher selects the cases according to specified profiles, or snowball sampling, where the researcher locates relevant individuals and asks them to facilitate access to other possible respondents.

In action research, the negotiation of who participates in the research is part of the aspired process of transformation. In order to facilitate this process, it is important to identify the

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interests that unite the participants. The researcher needs to discuss with them why a research group is necessary, reflect about the meaning of participating in a research group, reflect about shared responsibilities, reflect and decide about the conditions of participation and reflect about the contributions to the research group and the organization of the study, including the distribution of tasks.

### **5.5.2. Techniques and tools for data collection**

In order to undertake the study that will lead to answering the research question, you have to select the adequate tools and techniques. The guiding question for this selection is what information you need to obtain. Several sub questions derive from this guiding question:

- Which tools or techniques should you use?
- Have these tools been used in other studies?
- Do you have to adapt them or do you have to design specific tools or techniques in order to obtain the necessary data?

The following techniques and tools will be introduced to you in further sections: the questionnaire, measuring with scales, various types of interviews including group interviews, network analysis and various types of observation. In the process of data collection, the role of the researcher is always crucial. The researcher therefore always has to reflect about his or her role in the data collection process and should record relevant observations.

#### **Questionnaires**

A questionnaire helps you to obtain demographical information about an individual (like the age, sex, etc.) and his or her family (number of siblings, etc.), academic and professional details, but also about opinions, expectations or motivations. You have to plan in advance on how you are going to make opinions or feelings measurable. A questionnaire generally consists of closed questions and provides numerical data. Once you have created questionnaire, its application is relatively easy and economical, and you can generate comparable data in different settings. The data you gain must serve your hypothesis, and you must code all the data for the statistical calculations you will make. In order to gain reliable data, your questionnaire must follow certain quality standards, and your questions must be clear and precise. This is not easy, and therefore questionnaire always needs testing (pilot study), revising, and adapting before being used on a large scale.

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## Scales

A questionnaire is most likely to include scales, as scales provide numeric data as a result and therefore coding and statistical calculations are easy to undertake. A scale format used very frequently is the Likert scale. Its purpose is to gain information about dispositions and attitudes towards certain topics, ideas, groups of people, etc. Respondent is provided with a set of items and asked to rate his or her degree of agreement or disagreement on a scale which is often divided into five gradual categories (e.g. I agree strongly – I agree – I partly agree and partly disagree - I disagree – I disagree strongly). Such a scale is easy to use and provides you with quantitative data. In order to design an appropriate set of questions you must identify the attitude you want to analyse. It is vital to plan on: how you quantify this attitude; how many items you will need; how you will codify agreement and disagreement; how you apply the scale; how you **compose** the instructions; how you calculate the score on the scale; whom you will ask to fill in the questionnaire; and which statistical operations you will carry out.

## Interviews

You can use a considerable variety of interviews for your research. One example is an **expert interview**: you identify a knowledgeable specialist of the topic you are interested in, ask for an appointment, design a comprehensive questionnaire, conduct and document the interview. Such interview is well structured. On the other end of the spectrum, you can opt for a **bibliographic interview** or an open interview on a specific topic, in order to generate as much insight as possible into the perception and thinking of your interviewee, as appropriate for developing new insights based on the method of grounded theory. Several **degrees of flexibility** in the interview guidelines are possible: you might have a list of questions you want to ask but select them according to the flow of the conversation; you might work with a list of key words or have a more static list of well-formulated questions. The specific type of interview you use depends on your research question, your knowledge of the area and your experience. The purpose of an open interview is to explore thoughts, feelings, intentions or perceptions of people, the ways they explain how they organize their world, or the meanings they attribute to their lived experience. As a rule, your questions should be neutral and allow your interview partner to elaborate freely on a topic. If you are not specially trained to deal with traumatic experiences, do not intend to study them, as your questions and reactions can be re-traumatizing and harm your interview partner (ethical aspects of the research process). The questions you prepare for your interviews depend on your research

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question; the data you generate should help you to answer this research question. Therefore, you have to choose the interview techniques and the questions you will employ, select the appropriate interviewees, consider how you present your topic of research and which setting and context is the most appropriate for the interview, and consider your own role as an interviewer. In addition, for an open interview it is useful to prepare the start of the interview very well, i.e. how you break the ice at the beginning, and think about questions that will encourage the interviewee to expand on a topic. Test recording devices in advance and make sure that they are charged and work properly. Make sure that your interview partner is well informed about how you will use the data you obtain from him or her and make sure you that you can evidence his or her well-informed consent to participating in the research.

### **Group discussions**

For certain research questions, the most appropriate way of inquiry might be a group discussion. Such an arrangement allows you to document and analyse the discourses and the interaction between members of a group on a certain topic. In a group discussion, the members of a group react upon each other and influence each other. The moderator has to guide the discussion with suitable questions, but also with regard to time management, and he or she has to make sure that all participants have their say – if that is appropriate for your research question. You might, for example, organize a group discussion about women’s rights with key stakeholders in order to analyse their discourses and proposals. The composition of the group as well as the circumstances of the group discussion, the topics and questions covered, and the techniques used to maintain the discussion alive all depend on your research question.

### **Graphical representations**

A well-known saying states that a picture is worth more than a thousand words, and you can make use of this wisdom for your research. At the beginning of your Reflect Lab experience, you were asked to create a mind map. Mind maps and other graphical representations are a very efficient way of gaining information and insights into person’s thinking. You can ask your interview partner to create a mind map or sketch on a specific topic e.g. about that person’s relationship with his or her class mates or family members, life in a refugee camp (both imagined or real experience), perceptions of one’s body etc. The possibilities are endless and depend on your research question. You could ask your interview partners to create mind maps about the rise of populist movements worldwide or ask young people to make a sketch of how they imagine the situation of the environment and climate change in ten or twenty years. Creation of mind maps,

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sketches and images provide you with these materials as data and can offer a good base for in-depth conversations with the interviewees. Reflect on your own process of mind map creation: when you are asked to make a graphic representation of what you think, this makes you reflect in a deeper and more precise way. Maybe prior to creation of the mind map on a certain topic, you never paid much attention to what you actually think about certain aspects of it. To ask a person to make a graphic representation of something most probably does not completely change that person's opinion, but it might well stimulate a process of deeper reflection.

### **Network Analysis**

Network analysis helps you to visualize and understand the relationships between actors and can be used to investigate the spread of rumours or the circulation of information, networks of friendship or support, understand business networks, kinship relations or the transmission of diseases – as always, it depends on your research question. The visual representation of the network consists of nodes, which can be individual actors or objects, and ties, edges or links, i.e. the relations among them. The final graphic can provide you with information about the structure of the relationships amongst group members and the existence of sub-groups, the intensity of the relationships among group members, the social status of the individuals in the group, conflicts within the group etc. The density and the distribution of the links amongst the members, the centrality of certain individuals or the gaps in the graphic representation can help you interpret the data. Free software is available to create the sociograms, e.g. EgoWeb 2.0 (<https://github.com/qualintitative/egoweb>), Social Network Visualizer (<https://socnetv.org/>) or Pajek (<http://mrvar.fdv.uni-lj.si/pajek/>). Once you are familiar with using the software, data collection is relatively easy. For example, you could ask which contacts young unaccompanied refugees cultivate in one week, and how often, how long and how intense these interactions are. You will gain interesting insights with this method, but it is difficult and often even impossible to guarantee anonymity.

### **Observation**

We all live with the discrepancy of what we say we are convinced of, of what we say we think and of what we say we do – and what we actually do. Think about the group discussion about women's rights proposed above. It is interesting to measure the time women and men speak during such a discussion and observe how often men – also those who defend women's rights – interrupt women when they speak. However, you will need someone to support you and measure

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the time; you cannot do this yourself in addition to your role as a moderator. If that is part of your research design, you could let the participants guess how they feel about the distribution of speaking time, and then confront them with the measured data. Similar observations could be made in a discussion about racism, for example, and the interaction between members of the dominant group of the population, and members of racialized minority groups.

The observation proposed in this example is a **systematic observation with structured scales**, and it serves you to analyse the occurrence, frequency and intensity of behaviour performed by one or more persons in a specific context. You have to fix the categories of behaviour to be observed before you start the research, and you have to operate behaviour, e.g. the observer is asked to keep a list of who speaks for how much time, etc. Another observer could fill in a data entry form and record all incidents where speakers interrupt each other.

On the other end of the spectrum of observational methods you can find **participating observation**. This method can provide you with deep insights into the mechanisms of social dynamics, and it requires high commitment from the researcher. Imagine you want to understand the dynamics of a protest event, of a religious ritual or of the hazing of newcomers to a university campus. If you do not want to be considered as an intruder who disturbs the phenomenon you want to explore, you have to participate at least to a certain extent. However, you cannot forget about your role as a researcher and you have to be mindful about your research question and remember to observe and to document the phenomenon e.g. with photos, audio recordings and field notes. In such context, it depends very much on your behaviour if the phenomenon you want to explore can unfold in an undisturbed way. At the same time, it depends on your skills and experience as a researcher that you document the event appropriately. This method is highly efficient if you want to understand certain dynamics in the observed field. You might, for example, be invited to a party by the young adolescent refugees in the camp, and then be able to observe how they interact with each other and with other inhabitants of the camp. In such research situation, you are exposed to much more information than is necessary with regards to your research question, and you have to make smart decisions about what to document and what not to pay attention to.

There are many nuances between a structured observation with scales and participating observation, and as always, the specific choice of the method depends on your research question.

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The library of your university offers you several books on research methods in the social sciences. Ensure that you consult them in order to plan your own research and in order to develop a critical approach to the texts you are confronted with: how the empirical data has been generated? What was the research question of the author? Which methods have been chosen? Is there coherency between the research question, the collection of the data, the research methods and the conclusions? How the author positions him- or herself in the specific research context? In order to assess the academic texts which you will consult during the course of your research for the Reflect Lab, you need to understand the dynamics of scientific research and apply suitable criteria in order to evaluate the results authors present to you.

### **5.6. The methodological plurality in social research**

Obviously, most research designs include several methods. If you want to understand specific dynamics in a refugee camp, you might wish to consult the statistical information available e.g. how many people live there, for how long, what is their distribution according to age, sex and gender. You will visit the camp, consider certain criteria for observation and make the corresponding notes. You opt for interviews but also conduct participating observation during a party. Qualitative research is a good starting point for developing the scales and items you wish to include in a questionnaire. This means that research methods are interdependent, and the most appropriate combination depends on your research question.

Different approaches to social science research depend on the problems that the researcher wishes to analyse and his or her theoretical and methodological preferences. The research question guides the research process that leads us to an answer and the selection of the adequate research methods. The research perspective of a researcher determines which questions he or she will ask and which research methods he or she will use. These different approaches are legitimate and fruitful in their complexity and complement each other. Each method has its advantages and limitations; therefore, the combination of different research methods provides us with deeper insights than using only one method. While historical dispute about methods has never ended, the conviction that diversity of approaches and methods is efficient has gained broad recognition since the 1990s.

### **5.7. Analysis and interpretation of data**

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Research process most probably will provide you with plenty of data you have to structure, analyse and interpret. In fact, researchers often accumulate much more information than necessary for answering the research question. In order to make best use of your data you have to develop your own system of organising it. Thus, you need to plan on how you name and organise your files, how you document your research data, how you manage bibliographic references, and how you organize the relevant correspondence. The earlier you develop a consistent system for organising your data the less time you will lose with searching for files and less frustration you will experience. The University of Cambridge offers you an online data management guide with a comprehensive chapter on organising your data<sup>4</sup>. You should also consider application of the electronic support for organising your bibliographic data. Once you have filled in the data of a book, an article or another source into such a database, you can link it to your text and automatically generate your list of references. Example of frequently used freeware database, which would help you with this, is Citavi (<https://www.citavi.com>). The earlier you start using such database the less time you will need to spend on the bibliographies of your papers, theses or books.

Timing of the data analysis depends on the type of perspective guiding your research:

When you conduct a research from the positivist perspective, data analysis starts when you have utilised the data collection tools and techniques and collected the information you need. Within this perspective, data analysis is carried out after the collection of the information and serves to confirm or reject the hypothesis of the study.

When you conduct a research from an interpretative perspective, data analysis takes place simultaneously to the collection of information. The researcher conducts interviews, discussion groups, observations etc., and, at the same time, transcribes and analyses the information obtained. During this process, researcher makes interpretations about what happens in the analysed research context. These interpretations need to be corroborated or rebutted. The researcher must collect and analyse new data in order to do so. The research process continues until the researcher has sufficient evidence to support his or her interpretations.

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<sup>4</sup> <https://www.data.cam.ac.uk/data-management-guide/organising-your-data>

When you opt for the action research and employ perspective based on critical theory, the analysis of data generated throughout the research and action process accompanies these developments. However, a final interpretation is only possible in collaboration with the team and considering the results of the action aiming at improving the context. The team collaboratively examines and reflects on the scope and limitations of the planned actions and can opt for further action.

Several electronic tools are available to support you with the analysis of significant amounts of data. Technical tool often used in social sciences is ATLAS.ti (<https://atlasti.com/>). This tool supports you with the qualitative analysis of large bodies of texts, graphics and audio and video data and allows you to code your data in an easy and fast way. Alternatives are MAXQDA (<https://www.maxqda.de/>) or RQDA (<http://rqda.r-forge.r-project.org/>), amongst others.

## **5.8. Drawing conclusions**

In order to draw appropriate conclusions, you have to know your data very well and have to analyse it carefully, and you have to document this process adequately. Based on your research process and your analysis, you are now prepared for the final step: drawing the conclusions. Conclusions are much more than just a summary of your results and analysis. Be aware that the conclusions are not the place where to include new material – they should be based entirely on the material, which you already presented in your research report.

In your conclusions, you explain what can be learned from your research. This gives you the opportunity to elaborate on success as well as on difficulties. Here you can elaborate on the reasons why, for example, a hypothesis you formulated proved wrong, or why a specific insight is new and important. In your conclusions, you also provide recommendations on how to improve research design, methodology or data interpretation, and you point out the limits of your research and highlight new research questions. In addition, you can explain how your academic work could help to make the life of others better. For example, you could come up with suggestions for organizing life in a refugee camp in a way that supports unaccompanied minors better in order to achieve their educational aspirations.

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## 5.9. Preparing and writing a research report

There are some general rules regarding preparation of the research report; however, within the framework of the Reflect Lab, the requirements for your research report depend on the specific course you are attending. Make sure you are aware of these requirements and you know what you are expected to include into your portfolio.

A research report informs the reader about the research question and how you developed them; the research design and its characteristics; the process of your research; the results; and the conclusions of your research. By publishing the report, you make your research available to the academic community and beyond and help to increase the body of knowledge on a certain topic. This also means that it allows other researchers to evaluate your work and discuss the strengths and weaknesses of the research as well as the scope and limitations of its conclusions. A research report should be clear, concise and comprehensive. It should allow another researcher to replicate the study or engage in similar research and thereby reconfirm, amplify or contradict your results.

Your research report starts with the **title** of the report, the **name of the authors** and their **affiliation**. The title must reflect the content of the investigation as thoroughly as possible and reflect the importance of your work.

You will be asked to provide **keywords** and a **summary** of your report (abstract). Well-chosen keywords increase the possibility that your report will be found by other researchers who are interested in your work. Readers will decide based on the abstract whether they continue reading your report or not, so pay attention to it. Stick to the specification of the contracting authority, i.e. the number of keywords and the number of words or characters you can use for the summary. Every academic work is situated within a **theoretical framework**. Your report has to make clear that you know the theories that have been developed with regard to your research topic, and that you know where your report is positioned within the corresponding debates. It also means that you have to know which studies have been conducted on the topic, what are their results and conclusions, which questions derive from their work, and how your work relates to them. Theoretical framework must be presented as a well-organised synthesis of the information gathered about the research problem, it has to be well-structured, logical and coherent in its composition. The section about your **empirical research** has to specify your

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general topic, your research question and the objectives related to both. According to your approach, you have to explain your hypothesis, your well-informed presumptions about the context or your assumptions about the possibilities of a joint and accompanied action. You have to explain the methods you applied and their suitability for the study of the phenomenon. This includes the number of participants, the criteria for selecting them, sample techniques, relevant characteristics (age, income, etc.), the techniques and tools used for data collection and how they were designed as well as their validity and reliability, etc. You have to describe the procedure of the research, i.e. when, where and how was it carried out, who participated, etc. You have to make comprehensible how you **analysed and interpreted** data, and you can support this with tables, figures, paragraphs of transcribed interview sequences, etc. You finish your report with the **conclusions** as discussed above. All the literature you used has to be documented in your **list of references**. Always respect the guidelines given by the publisher and stick to them meticulously.

## 6. To conclude

The stimulus materials you are exposed to allow you to develop a variety of different research questions. The main aim of the Reflect Lab is to support you to develop your capacity of reflection and inquiry in the circumstance of a polarised debates. For this purpose, you need to be able to conduct your own research and also need criteria to analyse the research conducted and published by others.

While this manual can only give you a short and brief introduction into the research process, it should however become clear that research is a complex, time consuming and labour intensive endeavour. Research requires patience, self-reflection, the capacity to develop and follow a working plan, and the openness to have one's methods and results revised and criticised by others. In fact, sound social science research is the very opposite of simplified, easy-at-hand solutions: social science research makes you understand that there are many more questions than answers, more uncertainties than certainties, more tentative answers than closed answers. Researchers should adopt an open and authentic human dialogue in these times of polarisation that facilitates understanding amongst people from diverse walks of life.

The portfolio you are developing during your Reflect Lab and the corresponding reading, analysis

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and discussions will hopefully support you on your way to acquire the essence of inquiry and the necessary openness and rigorousness to develop a research question and a research plan, and also to undertake the necessary steps in order to find your own way through social science research, and to finally contribute in a positive manner to the problems discussed in the society today.

## 7. Reading recommendations

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## Project partner



Leibniz  
Universität  
Hannover

The coordinating partner is The Institute of Civic Education, which is part of the Leibniz University Hannover, Germany. The overall aim of the Institute is to enable both young people and adults to acquire key skills and competences necessary for active citizenship and participation at all levels of social and political life. IDD develops, tests and implements a wide range of training programs, all of which aim to improve the skills of trainee teachers and other education professionals. <https://www.uni-hannover.de/> <http://www.demokratiedidaktik.de/>



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Nicolaus Copernicus University is the biggest comprehensive, state-owned university in Northern Poland. Its Faculty of Political Sciences and International Studies combines various disciplines. It is an important centre of education, science, and research, and it's ranked amongst the top 5 political science schools of higher education in Poland. The Faculty is also internationally oriented. The broad scope of research activities and broad participation in many international projects enable to attract students and teachers from all over Europe. <https://www.umk.pl/> <https://www.wpism.umk.pl/>



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ALEXANDRU IOAN CUZA  
UNIVERSITY OF IAȘI

Alexandru Ioan Cuza University of Iași is the oldest higher education institution in Romania. Since 1860, it has been carrying on a tradition of excellence and innovation in education and research. With over 25,000 students and 800 academic staff, the university enjoys high prestige and cooperates with over 250 universities worldwide. It became the first student-centred university in Romania, even offering the opportunity to choose two fields of study, in a combination that best suits students' future career goals. Our team is a part of teaching and research staff of the Faculty of Psychology and Education Sciences and the Teachers Training Department.

<https://www.psih.uaic.ro/> - Faculty of Psychology and Education Sciences

<http://www.uaic.ro/en/> - Alexandru Ioan Cuza University of Iași



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