1.- 3. Stimulus material – general introduction

The following material is used as so-called stimulus material for the implementation of Reflect-Labs in seminars and other courses by lecturers of social sciences at universities. It is aimed above all at lecturers who teach and educate future politics teachers.

The three topics presented here (Crisis of the EU, Right Wing Movements, Migration and Refugees) were chosen because of their strong current impact on European societies. It is obvious that they are outdated soon or are of minor importance in other contexts and societies. Therefore, chapter 2 is concerned with a short theoretical introduction on how to create your own stimulus material. With this theoretical knowledge, a lecturer will be able to create stimulus on his or her own.

a) Examples of Stimulus material on three selected topics

A Reflect Lab is based on the inquiry-based learning approach. This means that the students in Reflect-Labs are self-responsible, working with social science methods to investigate pressing, social and political issues. The goal is to consolidate a didactically innovative, self-supporting seminar structure. Thus, a counterweight is designed to the often-criticized reduction of university teaching to pure knowledge transfer.

The following material should be an impetus for exactly these goals. It serves as an inducement for carrying out a Reflect Lab and gives students suggestions and input for reflection on socio-politically controversial topics. The students use the material as an inspiration, then during a Reflect-Lab dealing more closely with individual aspects and to think about which questions they would like to go into research. This material is therefore not a finished collection of materials or claims to be scientific. Rather, it initiates the first associations among the students and makes it possible to approach a topic, be it with means of comics, but also with shorter articles or newspaper reports.

Here it is important to know that some materials are one-sided, provocative and controversial, others more factual and differentiated. Equally important, students are not supposed to follow the arguments and opinions of the stimulus materials. On the contrary, an essential part of their exercise is to discuss these opinions and come up with counter arguments and/or additional perspectives. Nevertheless, these materials serve as an introduction to a topic.

For the implementation of an entire Reflect Lab, the students have access to the infrastructure of their university as well as the Method / Research Guide (Output 3) and Project Platform (Output 5) developed by the consortium. More details can be found in the corresponding materials.

The lecturers also have webinars (Output 2) on the portfolio method and group work as well as a manual (Output 2) for the successful implementation of a Reflect Lab.
b) How to create impulse material for a Reflect Lab

In order to generate good impulse material for the implementation of a Reflect Lab, some principles should first be brought into focus:

According to Haarmann and Lange, the students should be able to independently analyse social realities and social issues in the work process of the political laboratory with regard to central problems and questions (cf. Haarmann/Lange 2013, p. 77)

The impulse material will be implemented in Phase 1 of a Reflect Lab.


One or more impulses are needed in order to draw attention to the topic of a Reflect Lab, which must not inadmissibly narrow down the possible questions derived from it. Therefore, a certain openness in the choice of the impulse material has to be considered. Furthermore, the impulse materials should not give just one opinion, but several perspectives, since the students should work on the questions derived from the materials according to their own interest and their intersubjective view (cf. Lange/Haarmann 2013, p. 77, 78).

In order to enable students to relate the questions to their own reality, care should be taken that the impulse material and the chosen topic of the Reflect Lab affect the students' environment.

Therefore, the following demands must be made on the design of impulse materials:

1. materials that allow many questions
2. materials that allow different perspectives and opinions
3. and the living environment of the students are affected.

Sources:
MANUAL OF SOCIAL SCIENCES RESEARCH

Luis Feliciano
Lidia E. Santana
Olga González-Morales
Fernando Barragán
Introduction

1. What does research mean?

2. What skills should a researcher have?

3. Why research in the social sciences?
   3.1. We research to Explain
   3.2. We research to Understand
   3.3. We research to Transform

4. What are the phases in the general research process?
   4.1. Choice of research topic
   4.2. Bibliographic review
   4.3. Specification/formulation of the research problem
   4.4. Hypothesis formulation
   4.5. Research design
      4.5.1. Characteristics, number and selection procedure of the participants
              - In studies of a positivist nature
              - In interpretative studies
              - In targeted studies of a critical nature
      4.5.2. Techniques and instruments for data collection
              - Questionnaire
              - The Interview open
              - The sociometric tests
              - The discussion groups
              - Observation with structured scales
              - Observation without structured scales
              - Attitude scales (Likert type)
              - The Semantic Differential
              - Other techniques of interest
      4.5.3. Information Analysis Techniques
      4.5.4. Research procedure
   4.6. Fieldwork or empirical research
   4.7. Data Analysis
   4.8. Preparation of conclusions
   4.9. Preparation of the research report

5. Research methods in social sciences
   5.1. The research process from the positivist perspective
      5.1.1. Experimental method
      5.1.2. Comparative-Causal Method
      5.1.3. Correlation Methods
      5.1.4. Descriptive Methods
      5.1.5. Similarities/differences between positivist research methods
   5.2. The research process from the interpretative perspective
   5.3. The research process from a critical perspective

6. The methodological plurality in social research
Introduction

Dear reader, this manual has been prepared with the purpose of orienting you on the questions that must be raised before and during the elaboration of a research project. People who carry out research for the first time tend to have doubts about the type of approach or perspective that they should give to their study, the most appropriate method to respond to the problem investigated, the decisions to be taken in each phase of this process, etc. The manual has been designed as a support material for the planning and development of a research paper and is structured as follows:

a) In sections one and two, the characteristics of scientific research and the qualities that those who carry it out should have are discussed.

b) In section three, the aims that can guide the development of a study (explaining, understanding and transforming), and the perspective or research focus in which they are framed are set out.

c) In section four, the phases of the investigation process are analyzed. In the description of each phase the specificities that they present according to the perspective or focus of the investigation are described.

d) Section five describes the research methods used to address the study of problems in the social sciences. For each method, its perspective or research focus, the scheme of its phases, and the questions that must be considered in its planning and development are described.

e) Finally, section six discusses the possibility that the study of a specific topic can be carried out through a multi-methodological synthesis, that is, through the complementary use of several research methods.

The manual is not a set of instructions for conducting an investigation. We start from the idea that you only learn to research by conducting research. For this reason we have considered it convenient to write a document that includes basic information about research methods in social sciences and the questions that we must ask in each of its phases. Based on these questions, it is intended that anyone carrying out an investigation be able to seek information and reflect on their different options, before making a decision, taking into account the characteristics of the study problem.

We hope that this manual: 1) will help you develop your research competence and 2) increase your knowledge through joint reflection with other colleagues and teachers. It would also be advisable to consider "gender sensitivity" as a way to illuminate the processes of discrimination and inequality.
1. What does research mean?

If we had to define the word “investigation”, in what way would we do it? A simple definition could be: look for an answer to a question. But are we conducting a scientific investigation when we seek an answer in our daily life? (for example, when we try to know which document should be completed to request family support). The search for answers in a scientific investigation must be:

- **Systematic.** The investigation 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 present any of these characteristics may be an inquiry, but not a scientific research process. Please see the following summary of a study conducted with unaccompanied refugee youths:

The objective of the study was to know the socio-family characteristics and the academic and work expectations of the unaccompanied refugee youths arriving in Spain. Before specifying the objective of the study, the researcher had extensively reviewed the literature on the topic of adolescent refugees. The researcher decided to carry out a descriptive study with young unaccompanied refugees who had lived in shelters in Spain for more than a year. 1,500 young people from 20 Spanish shelters participated in the study. A questionnaire of 30 multiple-choice questions was designed to collect information on family structure, social and economic level of the family, schooling, family expectations, and job and academic expectations of young people. The questionnaire was applied between February and April 2017. The data analysis was done through a computerized statistical program. The results of this research were published in an article published in a scientific journal. In this article, the limitations of the study are exposed, the scope of the results is discussed and new questions are raised to continue investigating

This study has all the characteristics of a scientific investigation:

- A descriptive research method is chosen that encompasses several stages: bibliographic review, formulation of objectives, planning of research, data collection, data analysis, interpretation of results, preparation of research report.
- Decisions are made about: what research method is used, who participates in the research, where and when the study is carried out, how the information is collected and analyzed, etc.
- The realization of the investigation involves a long period of time.
- The research is carried out with the intention of increasing knowledge about young unaccompanied refugees.
• Fieldwork is carried out to obtain information on the socio-family and academic characteristics of the young refugees.
• The researcher analyzes the limitations of the study and discusses the results.
• The research work is published so that the scientific community knows its results and can give its opinion about its scope and limitations.

To answer the following examples of questions, it is necessary to carry out a systematic, controlled, stable, generating, empirical, self-critical investigation submitted to public criticism:

- What beliefs do young refugees have about the political and social situation of the host countries of the EU?
- How can we make secondary education students aware of the problems of refugees in the EU?
- How do refugee men and women confront the process of social integration in the host country?
- Are there significant differences between the job expectations of adolescent refugees according to sex and country of origin?

2. What skills should a researcher have?

The realization of a scientific research process, in addition to requiring knowledge about the field under study and about research methodology, requires having a series of abilities/skills. Before facing a research process, the researcher should consider the following questions:

- Am I interested in finding answers to problems of the Social Sciences?
- Do I have knowledge about research methodology?
- Am I easily discouraged by the difficulty of a job?
- Do I specify my tasks in a work plan?
- Am I methodical in carrying out my work?
- Do I analyze all the possible action alternatives before making a decision?
- Do I justify my decisions when I perform a task?
- Do I like to check the possible answers to a question in the real world?
- Am I able to review my decisions?
- Do I allow other people to analyze and evaluate my work?

If most of the answers are affirmative, then you have the necessary qualities to conduct a scientific investigation. It should be noted that:

- Although you have knowledge about a topic or field of study, it is difficult to do an investigation if you do not have these qualities.
- Research practice and effective supervision help to discover that these qualities are not as foreign as we initially believe, or that they can be acquired.

3. Why research in the Social Sciences?

When commenting on the purpose of research in Social Sciences, it is often pointed out that research is carried out to: increase knowledge, solve problems, understand social phenomena, modify social situations, provide solutions to the demands of social agents, try to explain social phenomena etc. The three purposes of research in this area can be drawn from these proposals: a) Explain, b) Understand and Transform. Each of these three purposes has more or less weight in the investigation according to the perspective that it is oriented to.

3.1. We research to explain
This aim of the research is framed in the positivist perspective of social studies. The positivist perspective begins in the nineteenth century with Auguste Comte, John Stuart Mill and Emile Durkheim, and evolves along the twentieth century with Karl Popper, Thomas Kuhn or Imre Lakatos. According to this perspective, human phenomena are essentially the same as natural phenomena; The social sciences are similar to the physical-mathematical sciences. Therefore, the development of Social Sciences must follow the physical-mathematical model. The similarity between social and natural phenomena is based on the following assumptions:

- The social reality is objective, external to the subjects that intervene in it.
- The human being is a mechanical response to the stimuli of their environment.
- The social reality presents a certain degree of uniformity as it is governed by laws that allow explanation, prediction and control of its phenomena.
- The only way to increase knowledge about social reality is to analyze its observable aspects.

According to the positivist perspective, the behavior of people is regulated by general principles or laws. These laws are independent of the intentions of the people. The goal of social research is to discover laws or cause-effect relationships. The cause-effect relationship is defined as: 

\[
\text{If } X \text{ occurs, then } Y \text{ should be the effect}
\]

That is, a causal explanation of the social reality similar to the explanation of the natural reality Therefore, the causal model of the natural sciences is transferred to the social sciences.

According to this research perspective, it is a priority to discover the laws that govern social phenomena and develop scientific theories that allow: a) prediction of how events will happen from others, and b) control of the context where the studied phenomenon occurs, to allow or prevent its development. The study of social problems should be based on the application of the empirical-analytical method. Through this method, it is intended to establish causal relationships that can be generalized to as many subjects as possible. The following consequences for research are derived from these approaches.

- Research should focus on the study of the most external manifestations of social reality
- The purpose of the investigation must be described, observed, analyzed and controlled in a rigorous manner
- Social reality is a system of variables that can be separated for their measurement and study
- The researcher's task is to select variables and establish causal relationships between them
- The aim of the research is to achieve objective knowledge (focusing on the observable/measurable behaviour of people) and nomothetic knowledge (applicable to most individual cases, focusing more on the similarities than on the particularities of the individual and the society)
- Research must be neutral or free from values. The researcher must remain oblivious to the reality that is being analyzed.

Please see the following summary of an investigation:

The objective of this study is to analyze 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 was applied 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 (Student's T for independent groups). It was found 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 expectations of the boys.

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, analyzed 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.

3.2. We research to Understand

This aim of the research is framed within the interpretative perspective of social studies. The interpretative perspective is linked to the Aristotelian tradition and was promoted as a response to the positivism of authors such as Georg Wilhelm Friedrich Hegel and Max Weber at the end of the 19th century, having its conceptual bases in phenomenology, hermeneutics and symbolic interactionism. According to this perspective, human phenomena are very different from natural phenomena, that is, the social sciences are different from the physical-mathematical sciences. The latter statement is based on the following assumptions:
- Social reality:
  - This is built on a day by day basis by the intentional action of the subjects; it is the product of individual consciousness.
  - It is multiple. It is composed of a set of different visions that the subjects have regarding it. There are as many realities as there are individuals who conceptualize them.
  - It is holistic. Its components are in mutual interaction. It cannot be divided into variables, it must be analyzed globally.
- The behavior of individuals is basically constituted by intentional behaviors (they depend on them, not on laws of behavior).
- When studying social behaviors it is necessary to analyze and understand the meaning that subjects give to their behaviors (“I behave in this way so that ...”).

The dichotomy between “explanation” and “comprehension” has a long tradition in the field of social research, although in everyday language no such subtle distinction is made between the two terms. While the “explanation” provides a certain understanding of the facts studied, the “comprehension” has an intentional dimension that the “explanation” does not possess. The following consequences for the investigation are derived from these approaches:
- The claim considering the physical-mathematical model of science as unique is rejected.
- The purpose of social research is contextual and intentional. The external manifestations of social reality are only the skin of an organism that keeps meanings, senses and values in its interior.
- The researcher is interested in understanding social reality, based on the meaning that subjects give to facts and behaviors.
- The meanings that subjects attribute to their actions only exist in their minds, they cannot be directly observed, quantified or analyzed mathematically.
- If we want to understand the behaviors of people we have to link them to their context.
- Research seeks to obtain ideographic knowledge: a) it focuses on differences, not on similarities; b) seeks deep understanding of the singular and characteristic; c) it is built...
from the particular to the general (what happens in practice is the basis for constructing the theory); d) focuses on what happens at a certain time and place.

- The researcher’s values influence the choice of research perspective, the delimitation of the study problem, the choice of method and the selection of the context of the analysis.
- The values of the subjects are relevant to be able to understand the behavior.
- The researcher establishes a collaborative relationship with the subjects of the research, but is not emotionally involved with them.
- The researcher must interpret what happens in the study context, and not adopt the point of view of the subjects (disciplined subjectivity).

Please see the following summary of a research work:

| The research work intends to analyze how the teaching staff of primary education, who are in a practice period, teach the contents on the European Union. The study was conducted with 6 teachers in practice. Teachers were selected based on their responses to a previously applied questionnaire to identify different teaching styles. The data collection with the 6 teachers was carried out through interviews, field diaries and narrative reports of observations in the classroom. The interviews (at the beginning, during and at the end of the internships) aimed to find out what previous ideas the teachers had about the EU, how they think that the contents on the EU in Primary Education should be taught, and what teaching activities they perform; the teachers described the teaching activities developed and their reflections on them in the diaries; the narrative reports were used to obtain direct information about these teaching activities. The analysis of the content of the transcripts of the interviews, the reports and the diaries made it possible to progressively reconstruct the teaching model used by each teacher to teach content about the EU. |

This study has the characteristics of an interpretative investigation:
- The researcher is interested in understanding how teachers act in the classroom and in analyzing the meanings they attribute to their actions.
- The research work aims to understand what is singular and characteristic about each teacher.
- The understanding of teachers’ actions is linked to the context which they are developed in.
- The values/ideas of the teachers are taken into account to understand their behavior.
- Comprehension focuses on what happens at a certain time and place
- The researcher establishes a collaborative relationship with the subjects investigated and interacts with them.

3.3. We research to Transform

This aim of the research is framed within the socio-critical perspective of social studies. This perspective arises as a response to the positivist and interpretative approaches of science, and has its conceptual basis in the Frankfurt School, whose most significant representatives are Max Horkeimer, Theodor Adorno and Leo Lowenthal; with their approaches being developed through neo-Marxism and the critical social theory of Jürgen Habermas. 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 analyze social reality, become aware of their situation and be involved in its transformation. The socio-critical perspective of the research is characterized by:

- Denouncing the reductionism of positivism, since it ignores the unconscious aspects of the actions and the historical-social contexts where they are generated.
• Criticizing the conservatism of the interpretive perspective due to its excessive emphasis on the particular meanings of social actions, at the expense of the historical and social context in which they are generated.

• Considering that social studies should be more than a description of reality; they must incorporate a capacity for discernment between the truth and the falsity of a social reality that is antagonistic and contradictory.

• Rejecting the neutrality of science. Ideology and self-reflection are introduced in the processes of the elaboration of knowledge.

• Facilitating the emancipation of people with respect to the ideological constraints that hinder the modification of social situations.

• Introducing the exercise of criticism as a method to highlight the contradictions existing in social reality. The aim is for people to be able to eliminate existing distortions in their subjective meanings, to interpret themselves, and to change the conditions of social action.

The following consequences for the investigation are derived from these approaches:

- Social reality is dynamic and evolves. The subjects involved in this reality participate in its configuration and construction.
- The research object has an ideological and socio-political dimension, where class interests, power issues and ethical problems are reproduced.
- To understand reality, one must take into account the subjects’ interpretations and ideologies and the historical and sociopolitical coordinates of the context in which they act.
- 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. Symmetrical relationships are established between the participants. Decision making is democratic. The subjects share responsibilities in the definition of the problems to be investigated, in how to collect the information and analyze it, and in the planning of the actions for the change.
- The theory should be oriented towards:
  - The transformation of the way in which subjects see themselves; this allows them to recognize and eliminate the factors that condition their objectives and intentions.
  - The transformation of situations that: a) hinder the achievement of goals, b) perpetuate ideological distortions, and c) prevent rational and critical work in the context of action.
- La investigación no se conforma con explicitar los valores de los sujeto, se critica y se reflexiona sobre ellos con la intención de cambiarlos. Research is not satisfied with explicitly stating the subjects’ values, they are criticized and reflected on with the intention of changing them.

Please see the following summary of an investigation:

| The investigation begins when the teachers of a secondary school notice a certain isolation of the immigrant students with respect to the rest of their classmates inside and outside the classroom. The teachers, supported by an external advisor, agree to form a working group to analyze the integration difficulties detected. An initial exploration of the situation takes place, collecting information through questionnaires for the students, observations in the classrooms and interviews with the immigrant pupils, non-immigrant pupils and teachers. The analysis of the information shows that the pupils and teachers contribute to the lack of integration of immigrant students. The work team makes a list of different aspects concerning pupils, teachers and the center that generate the isolation. |
the isolation of immigrant students; these aspects are then classified in order of importance. It is clear that the professional practice of teachers favors isolation: “Teachers do not promote group work during the teaching-learning process or the dynamics of interaction among pupils”. Action alternatives were proposed and planned to facilitate the integration in the classrooms based on these reflections. During the implementation of the actions, information on what happens in the classroom is collected through observations. This information is the subject of discussion in the working group, reflecting on: what has been achieved? What objectives remain to be achieved? What is learned from the implementation of the actions? The reflection process gave rise to successive plans of action that facilitated the integration of immigrant students.

This study has the characteristics of a critical investigation:

- The research is committed to the transformation of a situation: the lack of integration of immigrant pupils.
- There is no hierarchy of roles among the members of the work team. Teachers share responsibilities in the definition of the problem to be investigated, the identification of the factors associated with the problem, the proposal of improvement strategies, decisions on how to collect and analyze the information, and the planning of actions for change.
- In the research, not only the interpretations of the subjects of their situation are taken into account, but also the critical personal and social aspects that generate that situation.
- Research is a process committed to clarifying and criticizing the behaviors, 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 teachers.

4. What are the stages of a general research process?

This section is a commentary on the outline of the general research process. A scientific investigation presents a methodological strategy made up of different stages. These stages are common to all research works, regardless of the perspective which they are carried out from (Figure 1). The following sections explain what each stage consists of. Specific information is included in the commentary of some stages according to each of the three research approaches (Positivist, Interpretative and Critical).

Figure 1. Outline of the general research process
4.1. Choice of research topic

El proceso de investigación se inicia a partir de un tópico que interesa al investigador (p.e. la crisis de la democracia, el nacionalismo en la UE, la inmigración y los refugiados), bien porque está relacionado con su línea de trabajo, por su actualidad o por una combinación de ambas circunstancias. Un tópico de interés puede concretarse en varios temas o cuestiones. Por ejemplo, las siguientes cuestiones se podrían analizar dentro del tópico “Jóvenes y Unión Europea”: The research process starts from a topic that interests the researcher (e.g., the crisis of democracy, nationalism in the EU, immigration and refugees), either because it is related to their line of work, to their present or a combination of both circumstances. A topic of interest can be specified in several topics or issues. For example, the following issues could be analyzed under the topic "Youth and the European Union":

- What attitudes do young people have towards the process of European integration?
- How do young people participate in the construction of the EU?
- How do young people perceive the functioning of the European Institutions?
- What values do young people in the European Union defend?
- How do young people perceive the arrival of refugees in the European Union?
- What are the most important problems facing young Europeans?
- How can the participation of young Europeans in solidarity actions be increased?
- What is European citizenship for young people? "
- What socio-family, academic and socio-community factors are related to Europhobia and Europhilia in young people?

Therefore, once the topic of interest has been chosen, it is necessary to delimit the question or theme of the subject that will be the object of study.

4.2. The bibliographic review

If we are not clear about the topic of the investigation, it is necessary to review the published information on the topic of interest. The bibliographic review is fundamental to:

- Identify relevant research issues.
• Analyze the theories developed around these issues and become familiar with the terminology they use.
• Justify the need to study these issues and know the current status of their research.
• Know the research methods used in the study of these issues.
• Prepare and formulate the problem and the hypothesis of our investigation.

Among the documentary sources for information on research issues are:

- Books. They deal with different topics related to the topic.
- Monographs. They present different points of view on a topic of the topic.
- Handbooks. They allow a quick consultation on a certain topic or research procedure.
- Conference Proceedings. They contain diverse works where current trends and problems related to the topic are described.
- Specialized articles. They present works where theoretical questions related to the topic are examined and/or debated.
- Application articles. They present works that report the methodological characteristics and the results of investigations.
- PhD theses or reports of unpublished research projects. They allow us to analyze the most recent studies on issues concerning the topic, to know the research methods used, and to familiarize ourselves with the vocabulary used.

Computerized databases facilitate access to documentary sources quickly and efficiently. Through the computerized databases it is possible to search and consult bibliographical references of recent years on a wide variety of topics. One of the most used databases in the field of education is the Education Resource Information Center (ERIC) of the Institute of Education Sciences of the USA. ERIC contains articles from magazines, books, theses, reports, conference proceedings, essays, book reviews, etc., from 1966 to the present, including the indexing of more than a thousand titles of journals. It also offers links to more than 340,000 documents with full text (free access): (https://eric.ed.gov/)

Other computerized databases to search for bibliographic references are:

- Eurydice. An institutional network created in 1980 by the European Commission responsible for the collection, analysis and dissemination of information on educational systems and policies in Europe. It contains reports on a) European education systems, b) comparative studies of issues, indicators and statistics in the field of education, c) how countries address challenges at all educational levels. Free access:
  • https://webgate.ec.europa.eu/fpfis/mwikis/eurydice/index.php/Main_Page
  • https://eacea.ec.europa.eu/erasmus-plus/library_en

- Academic Search Premier. This is a database that allows access to the complete texts of more than 4,660 academic publications of social sciences, humanities, education, information sciences, natural sciences, etc., from 1975 to the present. Restricted access: https://www.ebsco.com/products/research-databases/academic-search-premier

- PsycINFO: This is a database of the American Psychological Association that contains more than 3.2 million bibliographic references from 2,500 journals on psychology and related disciplines. Restricted access: http://www.apa.org/pubs/databases/psycinfo/index.aspx

- Dialnet. This is a database specialized in human and social sciences created by the University of La Rioja (Spain) in 2001. It contains 400,000 bibliographical references from
2,000 Spanish, Portuguese and Hispanic American journals, books, doctoral theses and other types of documents. It also includes documents in other languages. The full text of many of the documents is available online. Free access: https://dialnet.unirioja.es/

- **UNESDOC.** This is a database that contains bibliographic references and complete texts of UNESCO documents, journals and publications since 1945. These documents and publications cover all areas of UNESCO activity: education, natural sciences, social and human sciences, culture and communication and information. Free access: http://www.unesco.org/new/es/unesco/resources/online-materials/publications/unesdoc-database/

- **Web of Science.** This is a scientific information platform of Thomson Reuters. It facilitates the search for high quality research works. This platform allows you to explore thematic connections between articles through the references cited with links. It contains three databases: Science Citation Index (SCI), Social Sciences Citation Index (SSCI), Arts and Humanities Citation Index (A & HCI) and two databases of communications in congresses and conferences (Conference Proceedings Citation Index: Science, Conference Proceedings Citation Index: Social Science). It contains more than 61 million records of the main publications, conference proceedings and books on science, social sciences and art and humanities. Restricted access.

- **EUROSTAT** has numerous databases. These include: Population and Social Conditions (asylum and managed migration, demography and migration, education and training, labor market, etc.) and Migrants Integration Indicators (social inclusion, employment, etc.)

To perform a search in ERIC or other computerized databases, you must:

- Be clear about the topic of the study.
- Provide a list of keywords on the topic.
- Delimit the period of years of the search.
- Specify authors who have addressed the research topic (if we know who are the most important)

The search in a computerized database is done through the use of keywords. You can do a search of bibliographic references with a single keyword or by making combinations of keywords through the following operators:

- **Refugees AND Globalization.** All bibliographic references that contain both keywords are obtained.
- **Refugees OR Globalization.** All the references they contain are obtained by one of the two keywords.
- **Refugees NOT Globalization.** The references containing the keyword "refugees" are obtained and do not include the keyword "globalization".

The researcher can use Thesauri such as those provided by ERIC or the European Thesaurus of Education (http://vocabularyserver.com/tee/en/) to decide which keywords can be useful in the search of bibliographic references. These thesauri provide words related to the topic of the search (e.g., refugees: foreign workers, acculturation, immigrants, immigration, safety, undocumented immigrants, political attitudes, etc.). The researcher can also review the keywords that appear in articles related to the research topic.
The result of the search for references in the database is a list of documents. An abstract and its keywords are provided from each document; documents with full text available in PDF are also listed. Some databases such as ERIC classify the documents found by publication date, descriptors, type of source, authors, type of publication, or educational level.

Figure 2. The ERIC database

The researcher is recommended to create folders of the selected references:

- By concepts (listing the pages of the bibliographic references where a concept related to the topic is commented).
- By authors (summarizing the ideas and relevant results shown by the authors of a reference).

References are organized in folders according to the topics covered. After the analysis of the bibliographic references, the researcher assesses whether there is sufficient information on the topic of the research. If the answer is affirmative, the outline of the theoretical framework of the study is then designed.

4.3. Identification/formulation of the research problem

The research problem is a question for which there is no answer with the available knowledge. At the beginning of an investigation the first difficulty is in the specification and formulation of a problem. The problem of an investigation arises when: a) there are contradictions between the results of previous investigations on a topic; b) a new fact is observed that needs to be explained/understood; c) areas/issues are detected which were not analyzed in previous investigations on a topic. Sources of possible research problems are:

- Personal experience in certain socio-educational contexts, contact with the agents that participate in these contexts.
- The conclusions of research seminars and work teams.
- The application of theories to specific socio-educational contexts.
• Examination of the discussion sections and suggestions for further investigation of the research reports.

A well-formulated research problem should be posed: a) in the form of a clear and concise question, and b) in a way that can be analyzed empirically. Value judgments should not be included in the formulation of the problem. Please see below a list of research problems that meet such criteria:

<table>
<thead>
<tr>
<th>1. Descriptive</th>
<th>What attitudes do Spanish teenagers have towards the process of EU integration?</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Descriptive</td>
<td>What socio-familiar characteristics do young French people who vote for far-right parties have?</td>
</tr>
<tr>
<td>3. Correlation</td>
<td>Is there a relationship between the attitudes of young Europeans towards the EU and their attitudes towards the reception of refugees in their country?</td>
</tr>
<tr>
<td>4. Experimental</td>
<td>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?</td>
</tr>
<tr>
<td>5. Interpretative</td>
<td>How do adolescent immigrants interpret xenophobic behaviors of certain sectors of the population of the host country?</td>
</tr>
<tr>
<td>6. Interpretative</td>
<td>What political model of Europe do young Eurosceptic people have?</td>
</tr>
<tr>
<td>7. Critical</td>
<td>How can the social integration of the refugees sheltered in our community be improved?</td>
</tr>
</tbody>
</table>

- In problems one and two (Descriptive) exploring personal, academic and/or family characteristics, behaviors, beliefs, attitudes, etc is proposed.
- In problem three (Correlation) a question is asked about the relationship between two variables.
- Problem four (Experimental) raises a question about the cause-effect relationship between two variables.
- Problems five and six (Interpretative) raise questions about the meaning of certain processes or events for the people involved in them.
- Problem seven (Critical) raises a question about how to modify a problem situation noticed by the members of a collective, institution or community.

The problem must be evaluated according to the following criteria to be sure that the study is worthwhile:

• Real. Is it considered in terms of an interesting and significant difficulty for the researcher and the scientific community?
• Relevant. Is it a current problem? Does it have practical relevance? What implications can be derived from its study?
• Clear. Are the terms used in its formulation ambiguous?
• Feasible. Does it match the level of knowledge of the researcher and the means available for obtaining data?
• Generator. Does the investigation of the problem add anything to existing knowledge? Does it contribute to the improvement of the situations analyzed?
• Resoluble. Can it be analyzed empirically? Can you formulate a testable hypothesis empirically in response to the problem?

4.4. Hypothesis formulation
Once the problem is formulated, it is necessary to find a solution. The next stage of the general research process is the formulation of hypotheses. A hypothesis: a) is an empirically verifiable statement, b) offers an attempt to respond to the problem of the study. It should be mentioned that:

- The formulation of a hypothesis is not always made at the beginning of the investigation. For example, hypotheses in interpretative investigations arise during the process of analyzing information, as the researcher "deciphers" its meaning.
- Hypotheses are not posed in descriptive investigations. The purpose of these investigations is to explore how certain characteristics are distributed in a population or in a sample; therefore, no attempt to respond is required.

The hypothesis, besides proposing the solution to the problem of the study, guides the methodological decisions of the investigation. Please see the following example:

<table>
<thead>
<tr>
<th>Research problem:</th>
<th>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?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypothesis:</td>
<td>Secondary school pupils who do 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 do the seminar.</td>
</tr>
</tbody>
</table>

The hypothesis proposed is indicating that
- The subjects must be secondary school pupils and they cannot have 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 made.
- 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.

The formulation of hypotheses has a creative component. However, the creativity of the researcher is not enough to propose hypotheses, meaning that it is necessary to use the following sources:

- Knowledge. An exhaustive review of the results obtained in previous investigations allows the generating of new hypotheses
- Experience. The continuous observation of the different aspects of the socio-educational context which it participates in can suggest new hypotheses

The elaboration of hypotheses includes four phases: a) resorting to bibliographic review/experience to look for possible answers; b) thinking about the pros and cons of each answer; c) choosing the most appropriate solution; d) assessing the adequacy of that response. To assess whether a hypothesis is appropriate we must raise the following issues:

- Is the hypothesis relevant to the problem?
- Does it express the expected result of the investigation in detail?
- Is it stated clearly and concisely?
- Does it include any value judgment?
- Does the way of formulating it make it possible to test it empirically?
- Does it comply with the principle of parsimony? (between two equally probable hypotheses, the simplest should be selected)
- Is it in harmony with the theory already demonstrated?

Please see below the types of hypothesis according to the research perspective.

<table>
<thead>
<tr>
<th>Positivist Perspective</th>
<th>Problem</th>
<th>Type of hypothesis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Is there a relationship between the political affiliation of young French people and their attitudes towards the reception of refugees in their country?</td>
<td>Conceptual Hypothesis</td>
</tr>
<tr>
<td></td>
<td>&quot;The political affiliation of young French people is related to their attitudes towards the reception of refugees in their country&quot;</td>
<td>Empirical hypothesis</td>
</tr>
<tr>
<td></td>
<td>&quot;The young French voters of the X party will have a mean score on the attitude scale towards the reception of refugees significantly higher than the average score of the young voters of the Y party&quot;</td>
<td>Statistical Hypothesis</td>
</tr>
<tr>
<td></td>
<td>H. Alternative $\bar{x} &gt; \bar{y}$</td>
<td></td>
</tr>
<tr>
<td></td>
<td>H. Null $\bar{x} &lt; \bar{y}$</td>
<td></td>
</tr>
<tr>
<td></td>
<td>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?</td>
<td>Conceptual Hypothesis</td>
</tr>
<tr>
<td></td>
<td>&quot;Holding a training seminar on the causes of emigration to the EU influences the attitudes of young people towards the reception of refugees in their country&quot;</td>
<td>Empirical hypothesis</td>
</tr>
<tr>
<td></td>
<td>&quot;Young people attending a seminar on the causes of emigration to the EU will have a mean score on the attitude scale towards the reception of refugees significantly higher than the mean score of young people who do not attend the seminar&quot;</td>
<td>Statistical Hypothesis</td>
</tr>
<tr>
<td></td>
<td>H. Alternative $\bar{x} \neq \bar{y}$</td>
<td></td>
</tr>
<tr>
<td></td>
<td>H. Null $\bar{x} = \bar{y}$</td>
<td></td>
</tr>
<tr>
<td>Interpretative</td>
<td>What is the perception of adolescent refugees of their situation in the host country?</td>
<td>Working hypothesis</td>
</tr>
<tr>
<td></td>
<td>&quot;The rejection that the refugees perceive in a part of the population is interpreted as the consequence of the stereotyped view of the refugees&quot;</td>
<td></td>
</tr>
</tbody>
</table>
|                        | "They consider that they are seen as a threat to the stability and security of the community. Misinformation about who they are and why they
have been forced to emigrate to the host country increases the sense of threat "

Action Hypothesis
"If mutual knowledge between the inhabitants of the community and refugees is enhanced through their participation in multicultural activities, the process of social integration can be facilitated"

"If the multicultural activities are collaborative, dynamic and based on the proposals of the inhabitants of the community and refugees, they will actively participate in them"

a) In the investigations carried out from a positivist perspective (with the exception of descriptive studies), the researcher proposes the following hypotheses based on the research problem:

- Conceptual hypothesis. This hypothesis expresses a conjectural relationship between two or more variables. Basically it is formulated by turning the problem of research into affirmation.
- Empirical hypothesis. In this hypothesis, the variables are defined operationally (it indicates how they are manipulated or observed) and the type of relationship expected to be found between them.
- Statistical hypothesis. These hypotheses express the relationship between the variables in a quantitative way (in the form of an equation). They are used at the time of performing the statistical analysis of the data. Two types of statistical hypothesis must be formulated:
  - Null hypothesis (H₀). This hypothesis is what the researcher tries to reject. He/she points out that there are no differences between the statistics of the samples taken from the same population.
  - Alternative Hypothesis (H₁). This hypothesis indicates that the difference between the statistics of the samples is significant.

b) In the research works carried out from the interpretative perspective, the researcher proposes a Working Hypothesis. These hypotheses arise during fieldwork, as information is collected and analyzed. The Working Hypotheses are interpretations that the researcher makes about what happens in a specific socio-educational context. These interpretations are extracted from the meanings that the subjects give to the events which they are involved in. The researcher contrasts his/her interpretations throughout the field work, collecting new information that allows their confirmation or rejection.

c) In research conducted from a critical perspective, the research group agrees on the Action Hypothesis. In these hypotheses, action strategies are proposed to modify the situation perceived as a problem. The Action Hypotheses emerge from a process of group reflection on the situation-problem and the objectives proposed for its change.

4.5. Research design

The research planning takes place in this stage. The conditions in which the study is carried out must be specified, making decisions regarding the following issues:

- Characteristics of the participants
Number of participants
Sampling technique of the participants
Information that needs to be obtain
Techniques/tools for obtaining information
Information analysis techniques
Research procedure

Answering these questions implies having knowledge about sampling techniques, research designs, data collection techniques and tools, and data analysis techniques. Then the following will be briefly commented on: a) each of the questions raised in this stage of the research and b) the options that the researcher has when making decisions regarding the design of his study.

4.5.1. Characteristics, number and sampling technique of the participants

The first questions that need to be answered in the research design refer to the participants. The questions that should be asked about research participants are: What characteristics should the participants have? How many people should participate in the research? In what way will the participants be selected? The answers to these questions will be different depending on the kind of problem and the research perspective.

- Research of positivist nature

Research guided by a positivist perspective seeks to find applicable (generalizable) behavioral principles to all members of a population (set of individuals that have certain characteristics in common). Data on the entire population can be obtained in some research works; but when this is not possible, a representative subset of individuals of the population (sample) is selected. From the measures obtained in the sample (Statistics), inferences are made with respect to the measures of the population (parameters).

Formulas or tables can be used to calculate the size of a simple random sample. There are also Web pages that offer help on how to calculate the sample size:
- https://www.surveysystem.com/sscalc.htm

Calculating the size of a sample requires defining beforehand:
- The kind of Population: finite (less than one hundred thousand individuals) or infinite (more than one hundred thousand individuals)
- The Statistical Confidence Level. This is the level of confidence that is established to generalize the results of the sample to the population (usually a confidence level from 95% is used, in cases of high accuracy 99.7%). When the confidence level is higher, a larger number of individuals is required.
- The Estimation Error (sampling error). This is the error that is made when extracting a small group of individuals from a population (usually the estimation error oscillates between + 0.5% and + 10%). When a larger estimation error is allowed, fewer subjects in the sample are needed.
- The Percentages or Proportions. These are two percentages whose sum is 100% of the population: (p) is the percentage of individuals who have a certain characteristic; (q) is the complementary percentage. These percentages are obtained through a pre-research survey. If this survey cannot be conducted, the most common form is to give (p) and (q) the same proportion (50%).

A sample is representative of the population when the characteristics of that population are reflected in the sample. The selection of a sample of individuals is called sampling. Probabilistic
sampling is used to extract a representative sample of a population. The Principle of Equiprobability is fulfilled in the probabilistic sampling:

- All individuals must have the same probability of being chosen to be part of the sample.
- The selection of an individual does not influence the selection of another.

It is recommended to use probabilistic sampling techniques whenever possible to ensure the representativeness of the sample. Probabilistic sampling includes the following sampling techniques:

- Simple Random Sampling. This sampling technique guarantees each individual of the population the same probability of being chosen, and that their selection does not depend on another's. The steps to select a random sample are:
  - To define the population and record all its individuals
  - To assign consecutive numbers (from 1 to n) to each individual
  - To calculate the sample size
  - To extract the elements randomly

Among the procedures for selecting individuals in simple random sampling are the Random Number Tables (lists of randomly distributed numbers in columns and rows), found in statistical texts and Web pages. Random numbers can also be generated through Excel:

- http://www.excelfunctions.net/excel-random-number.html#RandInt
- https://exceljet.net/formula/random-number-between-two-numbers
- https://www.youtube.com/watch?v=Z_b3tSEbvtA

Example:
If you need to select a sample of 50 individuals from a population of 500, you must perform the following steps:

- List the 500 individuals from 001 to 500
- Use a table of random numbers
- Randomly determine the number where you will start in the table
- Start to follow a horizontal or vertical route in the table
- Record the numbers that appear until the 50 individuals in the sample are completed (repeated numbers are not taken into account nor those with a value greater than 500)

- Stratified Random Sampling. This is used when the characteristics of a population are not homogeneously distributed (as the population is divided into heterogeneous strata or subsets).

Example:
- Population: Refugee people who live in Tolouse
- Relevant characteristic for the research: origin area (North Africa, Sub-Saharan Africa, Middle East, Asia). Number of strata: Four

The following steps must be performed to obtain a stratified random sample:

- Divide the population into strata or subsets according to their most relevant characteristics
- List individuals in the strata
- Select a sample at random by:
  - Constant stratified sampling. The strata are represented in the sample with the same proportion of individuals. This kind of sampling favors the smaller strata and harms the large ones
  - Proportional stratified sampling. The strata are represented in the sample with the
Random cluster sampling. This is used when the population is made up of natural groups (refugees who live in reception centres in Andalusia, students from public secondary schools with more than 20% of immigrants in Canary Islands, teachers from state primary schools in Spain with coexistence educational projects, etc.). The sampling unit is not the individual, but the cluster. Once the clusters are defined and enumerated, they are randomly selected. The sum of individuals from each of the selected clusters configures the sample size.

- Multistage Sampling. This sampling procedure uses a combination of sampling techniques that are sequenced in stages. The selection sequence starts with larger sampling units and ends with smaller sample units.

Example:
- Research objective. To analyze the attitudes of Parisian baccalaureate students towards the reception of refugees
- Educational centres are divided into strata (according to the percentage of enrolled immigrant students)
- Educational centres are selected by cluster in the strata
- Classrooms are selected from educational centres by clusters
- Students are selected from the classrooms by random sampling

The Non-Probabilistic Sampling is used when it is not possible to randomly select the individuals of a sample. The principle of equiprobability is not used in non-probabilistic samplings; other criteria are used to select the individuals, ensuring that the sample is as representative as possible. Among the non-probabilistic sampling techniques are:

- Quota Sampling. This sampling technique is characterized by previously establishing population quotas. Each quota is a number of individuals that must have certain characteristics.
Example:
- Research objective. To analyze attitudes towards the European Union of people over 18 in a city of 10,000 inhabitants
- Sample size: 1000 individuals
- Sex and age are relevant in the selection of the individuals
- Quotas are established in the sample by sex and age taking into account the demographic characteristics of the population

The researcher follows a route through the streets of the city using a "roadmap” to locate and survey the individuals of the quotas. Each “roadmap” indicates: a) the number and characteristics of the people that should be surveyed; b) a street and a building completion number (between 0 and 9)

- The researcher stands in front of the building and starts walking to his left
- He performs the first survey in the building whose number ends in the established digit (if the number is 2: building 2, 22, 32,...)
- Once the first survey is done, the researcher follows the same direction
- If there is no building with the specified number, the investigator turns to the right when arriving at the first corner looking for buildings with that number
- The investigator turns again to the left at the next corner and to the right at the next corner, until he/she finds enough homes with the predetermined number to locate and survey the
individuals

The researcher also uses the "selection table". It is a double entry table: the number of floors of the building is indicated in the rows; the order number of the survey is indicated in the columns. The survey is conducted on the floor number resulting from the crossing between the row and the column (if the building has 1 to 6 floors, a survey must be conducted; if it has 7 to 12 floors, two surveys must be carried out and if it has more than 12, three surveys must be carried out).

- Incidental or Convenience Sampling. The criterion used by the researcher to select individuals is the facility to access them (they select the individuals that are most available); a particular case of incidental sampling is to use volunteers. This sampling technique allows a quick selection of individuals; however, it has the disadvantage that the samples obtained are biased, that is, they are not representative of their population. It is recommended to select a large number of individuals to attenuate the bias of an incidental sample.

- Research of interpretive nature
Research works conducted from an interpretative perspective perform the in-depth study of one case (single case design) or several cases (multiple case design). A case may be a refugee, an educational center, a reception center of immigrants, a group of social educators, a neighborhood with a high immigrant rate, a social integration project, etc. The case is defined by some physical or social limit. The interest of interpretative research focuses on understanding how a certain socio-educational situation occurs and reconstructing the process; with this purpose, the meaning that people give to their behavior and to the facts in which they participate is analyzed. The selection of cases is carried out by non-probabilistic sampling techniques:

  - Intentional Sampling. The researcher specifies the profile of the cases that may be relevant for the investigation, taking into account different theoretical and practical criteria. The cases that fit the established profile are selected, that is, the cases that offer the opportunity to learn more about the object of the investigation.

  - Snowball Sampling. The procedure of this sampling technique is similar to that of a snowball that grows when rolling. It begins by locating people who are an important source of information because of their experiences. These informants facilitate access to others, and so on until the researcher obtains the number of individuals needed for the study.

- Research of critic or socio-critic nature
Research carried out from a critical perspective aims to change a situation perceived as a problem by the people involved in it. Representative samples of individuals or cases are not selected in critical research: people who carry out the research are the object of the study. The research is used by people to: 1) analyze the socio-educational reality in which they participate, 2) become aware of their limitations and the limitations of the context, 3) become involved in overcoming those limitations and in the transformation of that socio-educational context.
People who intend to transform a problem-situation form a work team. The negotiation among the participants is one of the basic pillars to address the difficulties of the configuration of the work team and the development of the research. The feeling of shared responsibility and collective control of work is fostered through negotiation. The following issues should be raised in the negotiation process:

What interests unite us?
- Why do we need to form a research group?
- What does it mean for us to participate in a research group?
- How can we exercise shared responsibilities
Under what conditions are we going to participate?
To what extent can we get involved with this project?
What will our contributions be to the group?
How will we organize ourselves to carry out the investigation?
What tasks will we do?
How will we coordinate?

4.5.2. Data collection techniques and instruments

The second decision in the design of a research is related to the instruments and techniques that we will use to obtain data. The researchers have to ask themselves the following questions: What information do I need to obtain?

- What instruments or techniques should I use to obtain data?
- Can I use instruments and techniques used in other investigations?
- Should I make adaptations in such instruments or techniques?
- Should I design specific instruments/techniques to obtain data?

The instruments (questionnaires, attitude scales, sociometric tests, etc.) are applied by the researcher and completed by the participants in the research. The techniques (open interviews or discussion groups, etc.) are carried out by the researcher; that is, the researcher has an important role during its realization, conducts its development, determines what information is substantial and what is not and delves into the most relevant issues.

Depending on the information that needs to be obtained, the researcher can use/adapt techniques and instruments previously applied in other investigations, or the researcher will have to design them for the research. Depending on the type of information that the techniques and instruments obtain, a distinction is usually made between quantitative and qualitative techniques/instruments:

- **Quantitative techniques/instruments:** a) include items with closed response alternatives; b) the individuals must indicate the alternatives that best reflect their situation or opinion; c) the items give numerical data
- **Qualitative techniques/instruments:** a) are based on scripts of open questions; b) individuals respond in their own words; c) transcriptions of conversations and narrations are obtained

  - The techniques and instruments used in positivist research are usually quantitative
  - The techniques and instruments used in interpretative research are usually qualitative
  - Quantitative and qualitative techniques and instruments are used in research conducted from a critical perspective, although greater use is made of qualitative techniques
  - The techniques and instruments used in positivist research are usually quantitative
  - The techniques and instruments used in interpretative research are eminently qualitative
  - Both quantitative and qualitative techniques and instruments are used in the investigations carried out from a critical perspective, although a greater use is made of the qualitative ones

The purpose and characteristics of the techniques and instruments commonly used in the collection of research data are briefly discussed below:

- **Questionnaire**
  - Purpose. To obtain information in a systematic and orderly manner about: 1) personal, family, professional and academic characteristics of the individuals; 2) their behavior,
opinions, expectations and motivations.

- Characteristics
  - The Questionnaire consists of closed questions that provide numerical data
  - Easy, economical and uniform application (allows to compare answers)
  - A lot of information is obtained through a massive application in a short time
  - The questionnaire provides time to respond and guarantee freedom of response when it is anonymous
  - The questions of the questionnaire analyze objective and subjective aspects of people

- The questions that must be asked for the design of the questionnaire are:
  - What is the general objective of the questionnaire?
  - What are the specific objectives of the questionnaire?
  - On what topics will information be obtained?
  - What indicators will be examined in each topic?
  - How will the presentation of the questionnaire be written?
  - What instructions will be given? How will they be written?
  - How many questions will be asked?
  - How will the questions and their response alternatives be written?
  - In what order will the questions be sequenced?
  - How will the response alternatives be coded?
  - Who will review the content of the questionnaire?
  - Who will check the adequacy and time of completion of the questionnaire?
  - What statistical analyses will be done with the data obtained?

- Open interview
  - Purpose. To explore: 1) thoughts, feelings, intentions, assessments, and perceptions of people; 2) the way they organize their world; 3) the meaning that they give to their behavior, the behavior of other people, and the events that happen around them.

- Characteristics
  - The open interview allows us to know in depth how people interpret their world
  - It is based on a script of themes
  - The sequence of the topics is flexible, based on the dynamics of the conversation
  - It is open to unforeseen issues
  - Open and neutral questions are posed during its development
  - The open interview requires asking in-depth questions
  - The interviewer leads and stimulates the development of the interview
  - The open interview provides qualitative information

- The questions that must be asked for the design of the open interview are:
  - What will we use the interview for?
  - Why do we use this technique and not another?
  - What topics are we going to deal with in it?
  - What kind of questions will be asked?
  - Who will be interviewed?
  - How will we explain the reasons for its realization?
  - In what context will we carry out the interview?
  - How will we break the ice at the beginning of the interview?
  - How will we show acceptance towards the interviewee?
- Sociometric Test
  - Purpose. To explore:
    a) The structure of the relations among a group members and the existence of subgroups
    b) The intensity of the relationships among group members
    c) The social status of the individuals in the group
    d) The level of conflict/rejection among group members
    e) The perception of individuals about their relationships with group members
  - Characteristics.
    - The Sociometric Test (ST) allows information collection about the structure of relationships (affective or functional) among the members of a group
    - The ST application is simple and requires little time
    - The ST analyzes objective and subjective issues
    - The ST questions ask the group members to choose in order of preference people with whom they would or would not carry out an activity
    - The ST includes questions about a person's expectations of being elected by group members.
    - The ST is not anonymous
    - The ST provides time to respond
    - The ST provides quantitative data: a) number of choices received by each person; b) number of rejections received by each person; c) number of choices made by each person; d) number of rejections made by each person; e) number of expectations of a person regarding being elected or rejected by members of the group; f) number of successful positive/negative expectations; g) number of people waiting to be elected or rejected by a group member
    - The ST provides qualitative information on: a) people elected/rejected by each member of the group; b) popular or isolated people in the group; c) people rejected or not rejected in the group; d) people with a more or less real perception of their relationships with group members; e) people who feel more or less isolated in the group; f) people who feel more or less rejected in the group
  - The questions that must be asked for the design of the Sociometric Test are:
    o Which group will we apply the ST to?
    o What information will we need to know about the group?
    o What relational structure will we analyze: affective, functional or both?
    o What will be the activity on which elections or rejections will be requested?
    o How long is that activity?
    o How will the ST presentation be written?
    o What kind of questions will we include in the ST? Questions about choices, rejections, perceptions?
    o How will we write the questions?
    o What number of choices/rejections will we allow?
    o Will the members of the group be chosen in order of preference/rejection?
    o How will we guarantee the confidentiality of the answers

- Focus Group
• Purpose.
  a) To generate and reconstruct the dominant discourse of a group addressing a socio-
educational reality
  b) To understand how socio-educational situations are organized, perceived and interpreted
     by the group members
  c) To explore feelings, motivations, ways of thinking of the group members about the
     family context, the social context, the educational context, etc.

• Characteristics.
  ➢ A group of 6-12 persons and a moderator participate in this technique. The participants
     do not know each other
  ➢ The participants have certain characteristics in common (homogeneity). This allows
     the generation of the dominant discourse
  ➢ The group also presents differential characteristics (heterogeneity). This prevents a
     simple or linear speech
  ➢ The members of the group report on "how they think the analyzed socio-educational
     reality is?"
  ➢ The moderator guides the discussion from a script of flexible, open and neutral
     questions
  ➢ The group provides security and acts as a reinforcement during the process of verbal
     interaction
  ➢ This technique provides qualitative information

• The questions that must be asked for the design of the Focus Group are:
  o What will we use the Focus Group for?
  o Why will we use this technique and not another?
  o On what topics will we carry out the discussion (education for citizenship, family
     relations, social integration, political corruption ...)?
  o What kind of questions will we pose?
  o How many groups should we form?
  o How many people will form the group?
  o What characteristics should the participants have?
  o In what context will we carry out the Focus Group?
  o How will we record the information?
  o How will we negotiate the participation in the Focus Group?
  o How will we break the ice at the start of the Focus Group?
  o How will we motivate the most passive people and calm people who monopolize
     the discussion?
  o How will we ask the participants to expand on a comment, reflection or idea?
  o How will we communicate to the participants’ interest in what they say?
  o How will we redirect the verbal interaction when the group deviates from the topic
     of discussion?
  o How will we analyze the information?

- Systematic Observation (with structured scales)
  • Purpose. To analyze the occurrence, frequency and intensity of behavior performed by one
    or more persons in a specific socio-educational context.

  • Characteristics.
    ➢ This technique obtains direct information about the behavior of people in everyday
      situations
    ➢ Prefixed and mutually exclusive behaviors are observed
No new behaviors are added during the observation process.
The behaviors are defined without ambiguity, in an operative way
The information is collected in observation record sheets, where behaviors and observation times are specified
The observer records the occurrence of behaviors, their frequency, duration and/or intensity
The time limits of the observed situation are not taken into account
This technique provides quantitative information

• Observation record sheets.
  a) Checklist.
    ➢ This record sheet is an inventory of behaviors related to the analyzed behavior area
    ➢ The observer should mark the behaviors that appear during the observation session
  b) Interval record sheets.
    ➢ This record sheet contains a small number of behavior categories (e.g., aggressiveness, collaboration, etc.), the behaviors included in each category and the time intervals of the session
    ➢ The categories of behavior must be exhaustive (they cover all the behaviors of the analyzed behavioral field)
    ➢ The behavior categories must be exclusive (a behavior cannot belong to two categories)
    ➢ The observer must record the times the behaviors appear in each time interval
  c) Rating scale.
    ➢ This record sheet includes descriptions of behaviors or adjectives
    ➢ The observer must assess the intensity, frequency or appropriateness of a behavior on the scale
    ➢ The scales can be numerical, graphic or descriptive
    ➢ The evaluation of the behavior is carried out at the end of the observation session

• The questions that must be asked for the design of a Systematic observation are:
  o Why will we carry out the observation?
  o Why will we use this technique and not another?
  o What categories of behavior will we analyze?
  o What behaviors will we observe?
  o How will we define the behaviors and behavior categories?
  o In what context/situation will we carry out the observation?
  o How many observation sessions will we have to carry out?
  o How long will each session last?
  o When will we carry out the sessions?
  o What will we record in the observation session? The occurrence, frequency, adequacy or intensity of the behavior?
  o What type of record sheet will we use?
  o How many people will we observe?
  o What people will we observe?
  o Will we make a preliminary observation to check the adequacy of the record sheet?
  o How will we calculate the reliability of the observation?
  o How will we analyze the information?
- Non-systematic observation (without structured scales)

- Purpose. To explore:
  a) How a specific socio-educational context is organized
  b) What kind of processes/activities are developed in that context
  c) How these processes/activities are developed
  d) How people interact during the development of those processes/activities.

- Characteristics.
  - This technique allows the observation of socio-educational situations in a natural way
  - Behaviors, events and processes are recorded
  - The observation is guided by a script of open questions about different aspects of the observed situation. No particular behavior is specified to be observed
  - The observer is the instrument of observation
  - This technique allows detailed descriptions of the processes and identify behavioral patterns to be obtained
  - The temporal limits of the observed situation are taken into account
  - This technique provides qualitative information

- The information is recorded in:
  a) Narrative stories. This is a detailed description of the observed situation, of what happens in it, of the sequence of events and the behaviors of the people. It reflects the complexity of the observed situation. It registers the comments of the people literally. It differentiates clearly between the description and interpretations of the observer.
  b) Anecdotal record. This is a brief description of unforeseen behaviors or events, relevant and significant to the subject of the investigation. The anecdotal record includes the description of the event, when and where it occurs, comments on the possible reasons for the event and its relationship with previous events.

- The questions that must be asked for the design of a Non-Systematic observation are:
  - Why will we carry out the observation?
  - Why will we use this technique and not another?
  - What group will we observe?
  - What situation will we observe?
  - In what place will we carry out the observation?
  - Will the focus of the observation be an individual, a group, the development of a project?
  - What questions will we include in the observation script?
  - How many observation sessions will we carry out?
  - How will we record the information?
  - How will we analyze the information? What is the aim of the observation?

- Likert Scale

- Purpose. To analyze the favorable or unfavorable disposition of a person towards an object, event, idea, concept, group of people, fact, etc. A person's attitude is examined through their degree of agreement/disagreement with a set of items (positive/negative affirmations about the attitude object).

- Characteristics.
  - The scale design is simple.
  - The scale includes a set of items representative of the positive and negative opinions on the attitude object.
The scale does not require a large number of items for its design.
Each item has several response alternatives of agreement/disagreement. This allows accurate information about the opinion of the individual to be obtained.
Attitude scales provide quantitative data.

- The questions that must be asked for the design of a Likert Scale are:
  o What attitude will we analyze?
  o Why will we use a Likert scale to measure that attitude?
  o How many items will we need?
  o How will we collect the items?
  o Which items are favorable/unfavorable for the attitude object?
  o How many items should be favorable/unfavorable for the attitude object?
  o How will the agreement/disagreement alternatives of the items be codified?
  o How many alternatives of agreement/disagreement should the items have?
  o How will we code the response alternatives?
  o How will the presentation of the scale be written?
  o What instructions will be given? How will they be written?
  o Who will apply the scale to?
  o How will we calculate the score on the scale?
  o How will we identify the items that discriminate between people with favorable/unfavorable attitudes?
  o What items should be kept on the final scale?
  o What kind of statistical analysis will we carry out with the scale scores?

- Semantic Differential (SD)
  - Purpose. To analyze the attitudes of a person towards objects, events, ideas, concepts, groups of people, facts, etc. The SD examines the connotative or affective meaning that certain objects have for an individual.

  - Characteristics:
    - The SD design is simple
    - One or several stimuli (words) related to the attitude object (refugee, asylum, war, poverty, immigrant, xenophobia ...) are examined in the SD
    - The stimulus is evaluated through bipolar scales
    - The bipolar scales are formed by two opposing evaluative adjectives (good-bad, pleasant-unpleasant, cheerful-sad, positive-negative ...)
    - The selected adjectives must be relevant to the attitude object
    - Adjectives can be selected from a list of adjectives with a high weight in the evaluative dimension
    - Each bipolar scale contains 6-7 response alternatives (e.g., from very good to very bad)
    - Response alternatives can be scored from 1 to 6 or from -3 to 3.
    - A score is obtained for each stimulus by adding the scores of each scale

  - The questions that must be asked for the design of SD are:
    o What attitude will we analyze?
    o Why will we use the SD to measure that attitude?
    o What stimuli related to the attitude object will be evaluated?
    o What adjectives will be selected?
    o How will we determine if the adjectives are relevant to the stimuli?
    o Do the adjectives have the same meaning for each stimulus?
    o How many response options will be included in each scale?
- Other techniques of interest

- Snowball. Purpose: In this technique, the members of a group must: a) point out the difficulties or problems that they observe in a socio-educational context; b) give ideas when they have to make a joint decision (for example when they have to plan an intervention strategy). The result is a common list with the contributions of the group. The process is similar to that of a snowball that grows as it rolls:

  - It starts with individual lists
  - Individual lists are presented and commented on in groups of 5-6 people
  - Each group prepares a list with the contributions of all its members
  - The lists of each small group are commented on
  - Finally, a list is prepared with the contributions of all the small groups

- Diamond. The objective of this technique is to select nine proposals generated in the snowball, and order them according to their importance. The diamond allows the organization of individual and group reflection, and to prioritize difficulties or problems that people perceive in a socio-educational context.

  - The process follows the following sequence:
    - The proposals obtained in the snowball are numbered
    - Each person selects nine proposals (the ones they consider most relevant)
    - Each person orders the 9 selected proposals using the shape of a diamond: the most relevant proposal is placed at the top vertex (9), then the next two proposals (8 - 7), the next three (6-5-4), the next two (3- 2), and the less relevant proposal is placed (1) in the lower vertex
    - Individual diamonds are presented in small groups (5-6 people). Each small group makes its diamond. For this purpose, the scores obtained for each proposal are added. The proposal with the highest score will be placed in the first position, and so on
    - Finally, all the diamonds are presented and a single diamond is created reflecting the priorities of the whole group. For this purpose, the scores of each proposal are added

- Reflective writing (Qualitative research diaries). This is a type of record that the researcher uses to describe/reflect on/interpret what happens during the research process. The facts, reflections and interpretations must be described with precision and clarity. The writing helps the researcher to reflect on the development of the research and the results obtained. The diary is configured as an agenda where the researcher details the progress and the events of the investigation. The writing must be done every day to avoid forgetting important details of the research process or conversations that are held during the research. There is no single diary model, but it must contain: a) date; b) description of what happened in the investigation process; c) valuations and interpretations about the activities, relevant facts, responses of the people, etc.
• "Stimulated memory". In this technique one person sees or listens to the recording of a situation which they have participated in (a debate on the advantages and disadvantages of belonging to the EU, the development of an activity of a social integration project, a teaching session, etc.). During the visualization that person is asked to: a) remember and comment on the reasons for their behavior, b) point out the most significant moments of the situation. The recording can be stopped when the person reflects on what they observe. These comments are complemented by predetermined or spontaneous questions from the researcher. Everything is recorded for later transcription and analysis.

4.5.3. Information analysis techniques

The third fundamental decision in the design of an investigation is related to the analysis of the information. According to the type of techniques and instruments used in the data collection, the necessary analyses must be specified to obtain the results and respond to the research problem.

Statistical analysis of the data is performed when statistical techniques and instruments are used. The table below shows examples of statistical analysis in relation to certain research objectives:

<table>
<thead>
<tr>
<th>Objective</th>
<th>Analysis</th>
</tr>
</thead>
</table>
| To explore the score distribution on the attitude scale towards refugees of the students of the University of Seville | - Frequency distribution tables  
- Histogram, simple bar diagram, sector diagram  
- Measures of central tendency, dispersion skewness, kurtosis, and position |
| To explore the joint distribution of the variables "Having participated or not in the Erasmus Program" and "Degree of interest in the EU problems" | - Contingency tables  
- Chi squared coefficient, Contingency coefficient  
- Grouped bar diagram, stacked bar diagram, multiple line diagram, stacked area diagram, simple box diagram |
| To determine whether there is a relationship between the scores on the attitude scale toward the European Union and the scores on the attitude scale towards immigration | - Pearson's correlation coefficient  
- Determination Coefficient |
| To determine whether there is a relationship between the classification of different nationalities of immigrants according to their social insertion and their labor insertion | - Spearman's correlation coefficient, Kendall's Tau |
| To determine the weight of the "Perceived Social Threat", the "Similarity with the Outgroup" and the "Level of Contact with Persons of the Outgroup" in the prediction of Attitudes towards immigrants | - Multiple Linear Regression |
| To analyze whether there are differences between the attitudes toward the EU of university students who vote for party B and those who vote for party C | - Student's T test for independent samples  
- Cohen's d |
| To analyze whether there are differences between the average scores on the attitude scale towards the EU of the students of the University of Milan according to their faculty | - One-way analysis of variance (one-way ANOVA)  
- Eta square  
- Test of variance homogeneity  
- Multiple post hoc comparisons: Tukey  
- Analysis of Covariance |
| To analyze whether there are differences between the | - Student's T-test for related samples |
average scores of attitudes toward the EU of secondary school students before and after holding a workshop on European citizenship

To analyze whether there are differences between the intention to vote in the next European elections (no intention, little intention, fairly high intention, a lot intention) of the students of the University of Seville according to sex

To analyze whether there are differences between the intention to vote in the next European elections (no intention, little intention, fairly high intention, a lot intention) of the students of the University of Seville according to the faculty where they study

To analyze whether there are differences between the frequency of vote in national elections and the frequency of vote to the European Parliament (never, sometimes, often, always) of the students of the University of Seville

To analyze whether there are differences between the frequency of vote in the elections to the National Parliament, to the European Parliament and to the Autonomic Parliament of the students of the University of Seville

To determine the internal consistency of the scale of attitudes towards the EU

To determine the factors that group the items of the scale of attitudes towards the EU

- Cohen's d
- Mann-Whitney U
- Kruskal-Wallis Test for k independent samples
- Wilcoxon Signed-rank Test
- Friedman Test for K related samples
- Alpha Cronbach's coefficient
- Exploratory Factor Analysis
- Confirmatory Factor Analysis

When techniques that provide qualitative information are applied, the qualitative content analysis should be used. The analysis of qualitative content reduces the information obtained, for example, in open interviews or non-systematic observations to units of significant content. The process of qualitative content analysis has the following phases:

- **Simplification. Coding and Categorization**
  Coding consists of assigning codes (abbreviations) to fragments of a transcript to identify its content
  Categorization consists of grouping a set of codes into a category. The categories must be: a) internally homogeneous (the codes of a category have something in common); b) externally heterogeneous (a code cannot belong to two categories); c) exhaustive (all codes must be included in some category); d) replicable (the categorization process can be replicated by another researcher)

- **Synthesis. Design of matrices.**
  Matrices are double entry tables with several rows and columns.
  A matrix is designed for each category of the analysis.
  The codes included in a category are specified in the columns.
  People interviewed, observation sessions, etc., are itemized in the rows.
  A synthesis of the information related to a code is introduced in each box (citations, comments and valuations can be included)

- **Interpretation.** To establish relationships between the ideas obtained from the information.
This is carried out by exploring the ideas synthesized in the boxes. Conclusions on the possible relationships among the ideas of a category and among the ideas of several categories are obtained and organized. Conclusions are written and exemplified with literal transcript citations. Conceptual maps of the relationships between different ideas are drawn up.

There are computerized programs, such as Atlas.ti, which facilitate the analysis of the textual content of the information. However, the researcher must synthesize and relate the ideas obtained in open interviews, focus groups, non-systematic observations, etc.

4.5.4. Research procedure

The decisions made at this point in the design refer to the process of obtaining data:

- Who will obtain the information?
- In what context will the information be obtained?
- What will the timeline be for obtaining the information?
- How will the information be obtained?
- In the case of experimental investigations, decisions must be made about group formation and manipulation/control of variables.

4.6. Laboratory research/field experiment/Fieldwork (Empirical research)

The research design is implemented. This stage will be more or less flexible with respect to the initial design depending on the perspective that guides the research:

- a) Positivist perspective. The laboratory research or the field experiment is adjusted to the planning decided on in the design stage. No modification is made during the research process regarding the initial design.
- b) Interpretive perspective. The collection, analysis and interpretation of information involve reviewing decisions on the research design. During the field work, the researcher finds new questions that they must respond to, and elaborates interpretations that they must contrast; this involves collecting new information, selecting/designing new techniques and instruments, selecting new informants, etc.
- c) Critical perspective. The members of the work team can make adaptations of the previously planned actions during their implementation. These actions are rethought according to the answers of people involved in the socio-educational context object of the change. Likewise, decisions can be made during the realization of the actions regarding the techniques and instruments for collecting information, and about the times and places of their application.

4.7. Data Analysis

The information obtained is analyzed by means of quantitative (statistical) or qualitative (qualitative content analysis) procedures, in order to answer the questions raised in the research. The timing of the data analysis depends on the type of perspective guiding the research:

- a) Positivist perspective. The data analysis starts when the researcher has already applied the data collection tools and techniques and collected the information they need. Therefore, this is a stage of the investigation that is carried out after the collection of the information. The hypothesis of the study is confirmed or rejected through data analysis.
- b) Interpretive perspective. The data analysis is simultaneous to the collection of information. The researcher conducts interviews, discussion groups, observations, etc., and at the same time transcribes and analyzes the information obtained. During this process, the researcher makes interpretations about what happens in the analyzed socio-educational context. These interpretations need to be corroborated. The researcher must
collect and analyze new information to corroborate their interpretations. The process continues until the researcher has sufficient evidence to support their interpretations.

c) Critical perspective. The analysis of the information is performed after putting into practice the actions for the improvement of the socio-educational context. The work team collaboratively examines and reflects on the scope and limitations of these actions to plan and implement new lines of action.

4.8. Drawing conclusions

In this phase of the research: a) results are discussed in relation to the results of other research and the theories on the analyzed topic, b) conclusions are drawn up, c) new research lines are determined. An investigation should never begin and end in itself, since this would not be productive, it must raise new questions to continue investigating.

4.9. Research report

The research report allows other researchers to know: a) the characteristics of the research process; b) the results and conclusions of the research. The writing and publication of the report allows the research to be subject to public criticism: other researchers may discuss the strengths and weaknesses of the research and the scope and limitations of its conclusions. The publication of the research results and conclusions contributes to increasing the body of knowledge. A research report should be clear, concise and comprehensive, in such a way as to allow another researcher to replicate the study. The sections that are usually included in a research report and a scientific dissemination article are listed in the table below.

<table>
<thead>
<tr>
<th>Report</th>
<th>Article</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Title and author&lt;br&gt;- Index&lt;br&gt;- Theoretical framework&lt;br&gt;- Research&lt;br&gt;  - Problem or general objective&lt;br&gt;  - Hypothesis&lt;br&gt;  - Method&lt;br&gt;    - Participants&lt;br&gt;    - Techniques and instruments&lt;br&gt;    - Data analysis&lt;br&gt;    - Procedure&lt;br&gt;  - Results&lt;br&gt;  - Discussion&lt;br&gt;  - Conclusion&lt;br&gt;  - Bibliographic references</td>
<td>- Title and author&lt;br&gt;- Summary. Keywords&lt;br&gt;- Background of the issue&lt;br&gt;- Problem&lt;br&gt;- Research Method&lt;br&gt;  - Hypothesis&lt;br&gt;  - Participants&lt;br&gt;  - Techniques and instruments&lt;br&gt;  - Data analysis&lt;br&gt;  - Procedure&lt;br&gt;  - Results&lt;br&gt;  - Discussion and Conclusion&lt;br&gt;  - Bibliographic references</td>
</tr>
</tbody>
</table>

- Work title. This must reflect the content of the investigation as faithfully as possible, avoiding unnecessary words that lengthen it. The name of the authors and the center where the research has been carried out should be displayed after the title.

- Abstract. A paragraph of 12 or 15 lines that is usually included in the first page of a scientific dissemination article and that contains the most important information on the research: general objective, participants, techniques and instruments for collecting information and main results. The type of information included in the summary can determine the reader's interest: so special care must be taken in its writing. Four or five keywords related to the research are included in the abstract. These keywords allow other
researchers to locate the article through computerized databases.

- Theoretical Framework (or introductory section of a scientific dissemination article). The theoretical framework responds to the following questions:
  - Why is it important to analyze the research problem?
  - What theories have been developed on the subject?
  - What authors have developed these theories
  - What is the relationship among the theories of these authors?
  - What studies have been conducted on the problem?
  - Who conducted them and what research methods did they use?
  - What results and conclusions are derived from these research works?
  - What questions are derived from these research works?

The following guidelines must be taken into account when drafting the theoretical framework:

- The theoretical framework must be an ordered synthesis of the information gathered about the research problem. Therefore, it cannot be a copy of fragments of different bibliographical references
- The exposure of the information must be well structured, avoiding discontinuity between the different sections of the theoretical framework
- Excessive use of quotations should be avoided.
- The footnotes should only be used when it is necessary to introduce complementary information that is not essential within the discourse of the theoretical framework
- The tables and figures must be numbered and identified by a brief title (at the top of the tables, and at the bottom of the figures).

- Empirical Research. This section includes the following points:

  - Research problem or general objective
  - Specific research questions or specific objectives
  - Hypothesis.
    - Positivist perspective: Conceptual and Empirical hypotheses
    - Interpretive perspective: Work hypothesis
    - Critical Perspective: Action hypothesis

  - Method. This point describes the research method, and its suitability for the study of the problem.
    - Participants:
      - a) Number of participants
      - b) Sampling technique
      - c) Relevant characteristics of participants (personal, family and professional characteristics)
    - Techniques or instruments of data collection:
      - a) Information that the techniques or instruments collect
      - b) Whether they have been specifically design for the research or designed by other authors
      - c) Description of the technique/instrument (number and characteristics of the items of the questionnaire/scale, script of the interview, etc)
      - d) Psychometric characteristics (if they are quantitative instruments): validity and reliability
Procedure:

- Where/how the research was carried out?
- When it was carried out? (It is advisable to introduce a timeline)
- Who developed the research?
- Type of data analysis and computer program used

The Results are commented on taking into account the objectives or questions of the research.
- The commentary of the quantitative results is supported by tables or figures (numbered and identified by a brief title). Repetition of what is shown in the tables and figures should be avoided, highlighting only the most relevant data.
- The comment on the qualitative results is based on paragraphs of transcriptions or narrations. These paragraphs support the researcher’s interpretations, and therefore they must be carefully selected.

Discussion. The results of the research are commented on and evaluated in relation to those obtained in other investigations. The limitations of the study and the suggestions for future research are expounded.

Conclusions. The main findings of the investigation are summarized in this point. (The discussion of the results and the conclusions usually go in the same point in scientific articles).

- Bibliographic references. Only the references of the authors cited in the text should appear. The writing of the bibliographic references must conform to the norms of the American Psychological Association 2018 (APA Standards):

5. Research methods in Social Sciences

A research method is a set of procedures that allow us to approach the analysis of a problem. The problems that arise in social sciences have a determinate paradigmatic root (Positivist, Interpretive or Critical). It is necessary to previously determine the perspective that requires the analysis of the problem to choose the most appropriate research method.

Research methods are not alternative ways of answering the same question, but ways to respond to the different questions that can be asked about a topic. For example, if the topic of interest is "the social integration of refugees" one could ask questions such as:

- Are there differences in the social acceptance perceived by the refugees according to their country of origin?
- What models of social relations do refugees establish with members of the host community?
- How can we improve the social integration of refugees in our community?

The research perspective of the first problem would be the positivist one; the second problem requires an interpretative approach, while the research perspective of the third problem would be the critical one. Some of the methods used in social sciences are described below.
5.1. The research process from the Positivist perspective

The following methodological approaches are derived from the assumptions that the Positivist research perspective holds about the social reality and about the way of knowing it:

- The research problems are deduced from theory, they are not experiential.
- The research method is hypothetico-deductive: a) the problem and the hypothesis of the investigation are specified by a deduction process; b) the conclusions of the research are obtained through an induction process.
- The objectivity of the information must be guaranteed using structured, valid and reliable data collection techniques and instruments that provide numerical data.
- Representative samples of the population should be selected in order to generalize the results. The size of the sample is determined by statistical procedures. The selection of the sample is carried out using probabilistic sampling techniques.
- The design of the research is prior to the laboratory research or field experiment, and cannot be modified during the development of the study.
- The research is carried out in laboratories or laboratory conditions to prevent uncontrolled variables from interfering in the research process.
- The data analysis is carried out after its collection. Statistical techniques are used to guarantee the objectivity of the results.
- The evaluation of the research is based on the criteria of: a) objectivity; b) internal validity (manipulation performed on one variable is the only thing that causes the changes observed in another variable); c) external validity (the results obtained in the selected sample can be generalized to the population), reliability (constancy to capture the relationship between the variables analyzed when successively applying the same research design in similar circumstances)

5.1.1. Experimental method

Objective: To verify cause-and-effect relationships between an Independent Variable and a Dependent Variable (or among several).

Figure 3. Scheme of the research process
- An example of experimental research

**Problem:** Does the participation in a seminar on European citizenship influence the attitudes of compulsory secondary school students towards the European Union?

**Conceptual hypothesis:** the participation in a seminar on European citizenship influences the attitudes of students of compulsory secondary education towards the European Union

**Empirical hypothesis:** The average score of attitudes toward the EU of the students participating in the seminar on European citizenship will be significantly higher than the average score of the students who do not participate.

**Sample:** Incidental. Fifty students in the last year of compulsory secondary education (public center).

**Independent variable:** Participation in a seminar on European citizenship

**Values VI:** participate/not participate

**Dependent Variable:** Attitude towards the EU

**Measurement of the Dependent Variable:** Scores on scale of attitude toward the EU (measured twice: before and after the seminar)

**Experimental situation:** Intergroups

**Number of groups:** Two (while the experimental group participates in the seminar, the control group performs a computer activity with tablets)

**Assignment of subjects to groups:** random.

**Assignment of the values of the VI to the groups:** random.

**Controlled variables:** Age, sex, previous knowledge on the subject, physical characteristics of the classrooms, time.

**Data Analysis:** Student's T test for independent samples. Cohen d.

**External validity:** Low (the sample is not representative of the population)

**Internal Validity:** High (relevant variables are controlled)

Questions that should be considered in the design of an experimental research:

- **Independent Variable of the research**
  What Independent Variable will be manipulated to study their effects on a Dependent Variable?

- **Experimental manipulation of the Independent Variable**
  a) What values (experimental treatments) of the Independent Variable will be selected? (e.g., to participate/not participate in a seminar on European citizenship; to receive
information about European citizenship through a face-to-face seminar, an online seminar, only through recommended readings)

b) How will the experimental treatments of the Independent Variable be assigned to the individuals or groups of subjects? (random assignment is recommended)

- **Number of subjects / groups**
  a) How many people will be needed?
  b) What sampling technique will be used to select the sample (probabilistic/non-probabilistic)?
  c) How many groups will be formed in the research?

- **Experimental situation:**
  Will the application of the treatments be intergroup (each subject or group of subjects is assigned a single treatment) or intragroup (all subjects go through all treatments)?

- **Type of group:**
  a) Will a treatment be assigned to each group (experimental groups)?
  b) Will there be any group without treatment (control group)?

- **Research Dependent Variable:**
  a) What technique or instrument will be used to measure the Dependent Variable?
  b) Who will apply the technique or instrument? How? When? Where?

- **Controlled variables:**
  a) What variables will be controlled? (characteristics of the subjects, characteristics of the experimenter, context, materials, familiarization, boredom/fatigue with the task)
  b) What experimental control techniques will be used? Elimination, constancy, balancing, randomization?
  c) What statistical control techniques will be used?
  d) What type of design will be used? Experimental (total control of relevant variables VC)? Quasi-experimental (incomplete control of relevant variables? Pre-experimental (little or no control of relevant variables) Contaminating Variables (CV).

- **Data analysis**
  What statistical analysis techniques will be used?

- **External Validity:**
  What type of population, situations, and treatments can the effects observed in the research be generalized to?

### 5.1.2. Causal Comparative Method

Objective: To analyze whether there are significant differences in a criterion variable based on the values of a predictor variable.

The scheme of the causal comparative research process is similar to the scheme of experimental research. However, it shows the following differences:

- The predictor variable is a characteristic that the subjects possess (sex, age, profession, country of origin, political party which they vote for, etc.) and that precedes the criterion variable in time.
- The researcher can select the values of the predictor variable, but not assign them to the subjects (because they are personal characteristics).
- The influence of other variables on the criterion variable can only be controlled by:
  a) Analysis of covariance. Statistical technique that allows the separation of the effect of one or more variables on the criterion variable
  b) Pairing. This technique consists of forming groups of subjects with equal values in the variables whose effect must be controlled
The designs used in causal comparative research can be:

a) Retrospective designs. The research is conducted when the antecedents and the consequences of the analyzed fact have already occurred.

Example:

<table>
<thead>
<tr>
<th><strong>Problem:</strong></th>
<th>Is there a relationship between the socioeconomic level of the family and the affective family support perceived by the 5th and 6th grade students of primary education?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Conceptual hypothesis:</strong></td>
<td>The socioeconomic level of the family is related to the affective family support perceived by the students of 5th and 6th grade of primary education</td>
</tr>
<tr>
<td><strong>Empirical hypothesis:</strong></td>
<td>Students with high socioeconomic status will have an average score on the scale of perceived affective family support which is significantly higher than the average score of students with low socioeconomic status</td>
</tr>
<tr>
<td><strong>Predictor Variable:</strong></td>
<td>Socioeconomic level of the family</td>
</tr>
<tr>
<td><strong>Values of the Predictor Variable:</strong></td>
<td>High/low socioeconomic level of the family</td>
</tr>
<tr>
<td><strong>Measurement of the Predictor Variable:</strong></td>
<td>Perceived affective family support</td>
</tr>
<tr>
<td><strong>Criterion Variable:</strong></td>
<td>Perceived affective family support</td>
</tr>
<tr>
<td><strong>Measurement of the Criterion Variable:</strong></td>
<td>Scale of perceived affective family support</td>
</tr>
<tr>
<td><strong>Other Variables:</strong></td>
<td>Not controlled</td>
</tr>
<tr>
<td><strong>Subjects:</strong></td>
<td>Two hundred and fifty 5th and 6th grade primary school students from five public centers (132 with high socioeconomic level, 118 with low socioeconomic level)</td>
</tr>
<tr>
<td><strong>Data analysis:</strong></td>
<td>Student's T test for independent samples. Cohen’s d</td>
</tr>
</tbody>
</table>

b) Prospective designs. This type of research is conducted when the background of the analyzed facts has already occurred, but the consequences have not yet occurred.

Example:

<table>
<thead>
<tr>
<th><strong>Problem:</strong></th>
<th>Is there a relationship between social popularity in the classroom and the academic achievement of the students at the end of the academic year?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Conceptual hypothesis:</strong></td>
<td>The social popularity in the classroom is related to the academic achievement of the students at the end of the academic year</td>
</tr>
<tr>
<td><strong>Empirical hypothesis:</strong></td>
<td>Students with a high level of popularity in the classroom will have an academic achievement at the end of the academic year which is significantly higher than the academic performance of the isolated pupils</td>
</tr>
<tr>
<td><strong>Predictor Variable:</strong></td>
<td>Social popularity level in the classroom measured by a sociometric test</td>
</tr>
<tr>
<td><strong>Values of the Predictor Variable:</strong></td>
<td>Popular/Isolated</td>
</tr>
<tr>
<td><strong>Criterion Variable:</strong></td>
<td>Academic achievement at the end of the academic year</td>
</tr>
<tr>
<td><strong>Measurement of the Criterion Variable:</strong></td>
<td>Average mark in the following subjects: Mathematics, Natural Sciences, Social Sciences, Language and Literature</td>
</tr>
<tr>
<td><strong>Other Variables:</strong></td>
<td>Not controlled</td>
</tr>
<tr>
<td><strong>Data analysis:</strong></td>
<td>Student's T test for independent samples. Cohen’s d</td>
</tr>
</tbody>
</table>

Questions to ask in the design of a causal comparative research are:

- What is the predictor variable of the research?
- What values of the predictor variable will be selected?
- How many people will be needed?
- What technique will be used to select the sample (probabilistic/non-probabilistic)?
- What will the criterion variable be?
- What technique or instrument will be used to measure the criterion variable?
- Who will apply the technique/instrument? How? When? Where?
- Will the effect of other variables be controlled by covariance analysis or pairing?
- What statistical analysis techniques will be used?
5.1.3. Correlational Methods

Objective: To analyze the relationships between two or more variables using correlation coefficients.

The scheme of the research process is similar to the scheme of experimental and comparative-causal research. It is difficult to differentiate between certain comparative-causal and correlational studies. The difference is in the objective of the study rather than in the statistical analysis technique.

Types of studies:

- **Correlation studies.**
  Objective: to determine the magnitude and direction of the relationship between two or more variables. (Statistical techniques: correlation coefficients, coefficient of determination, multiple correlation coefficient, partial and semi-partial correlation).

- **Predictive studies.**
  Objective: to determine the weight of certain variables in the prediction of another variable. (Statistical techniques: correlation coefficients, multiple regression).

- **Studies based on Factor Analysis.**
  Objective: to simplify and organize a large number of variables into factors; for example, to identify the factors that group the items of an attitude scale.

- **Studies based on Discriminant Analysis.**
  Objective: to differentiate groups of subjects, centers, etc., based on their profiles in a group of variables. The technique of discriminant analysis allows the identification of: a) the variables that differentiate the groups and b) how many of those variables are necessary for the best classification of the groups.

- **Studies based on the analysis of conglomerates.**
  Objective: to classify the subjects in internally homogeneous and externally heterogeneous groups, from the similarity between the cases in one or more variables.

Questions to ask in the design of a correlational research:

- What are the study variables? (in the case of predictive studies: What will the predictor variables be and what will the criterion variables be?)
- How many people will be needed?
- What technique will be used to select the sample?
- What techniques or instruments will be used to measure the variables of the study?
- Who will apply the data collection techniques and instruments? How? When? Where?
- What statistical analysis techniques will be used?
- What type of population can the research results be generalized to?

5.1.4. Descriptive Methods

Objective: To systematically and objectively explore the distribution of certain characteristics in a sample/population.

The scheme of the descriptive research process is similar to the scheme of the previous methods. Hypotheses are not proposed in exploratory studies. These studies allow the identification of relationships between variables, facts and relevant behaviors, and suggest hypotheses for further research.

Types of studies:
• **Survey Studies.**  
Objective: to explore the distribution of certain characteristics in a population/sample and the relationships among facts  
What information do young Spaniards have about European citizenship?  
What are the academic and work expectations of young unaccompanied immigrant?

• **Observational Studies.**  
Objective: to obtain direct information about the behavior of a person or a group in a specific context.  
What antisocial behavior does student X display with respect to the rest of his classmates during the classes?  
What participation behavior do students display during the development of a discussion group?

• **Studies on Development.**  
Objective: to identify patterns and sequences of change in certain characteristics of the subjects over time  
o Do the strategies used by young immigrants to address conflict change with age?

Studies on development can be::  
➢ Longitudinal studies. Data are collected from members of the same sample at different times and the changes they experience in certain characteristics are explored.  
➢ Transversal studies. Certain characteristics are analyzed in groups of different ages simultaneously. These groups must cover the proposed age range.

5.1.5. *Similarities/differences among positivist research methods*

After commenting on the different positivist research methods, the following table shows their similarities and differences according to the following questions: a) what is the purpose of the study?, b) What kind of problem is posed in this research?, c) are there manipulated variables?, d) are there controlled variables, e) Are there hypotheses?, f) in what context is the research carried out? g) is the research oriented towards the analysis of past, present or future events?

Figure 4. Comparison among positivist research methods
5.2. The research process from the interpretative perspective

The following methodological approaches are derived from the assumptions that the interpretive research perspective holds about the social reality and about the way of knowing it:

- Research problems do not arise from preexisting theories, but from the perceptions, sensations and feelings of social groups. The problem is reformulated throughout the research based on the data that are obtained.
- The research method is inductive, which goes from the particular to the general, that is, the theory is generated from the data extracted from the study of particular cases.
- Data collection techniques are open (interviews, focus groups, participant observations ...). These techniques obtain information about the interpretations that people make of the situations and events which they participate in.
- The researcher becomes an instrument for collecting data.
- The selection of subjects is theoretical and intentional; it seeks to obtain maximum information about the different perspectives regarding the analyzed social reality to generate a theory. The selection is adjusted to the information that needs to be obtained and to the work hypotheses that arise during the study. The number of selected subjects increases during the investigation.
- The research has an emerging design; it is elaborated as the investigation progresses. The phases of the process are not given linearly, but interactively. There is a close relationship between the data collection, the elaboration of work hypotheses, the selection of subjects and the interpretation of results. The research design has a flexible nature and can vary during the investigation.
- Data analysis is simultaneous to data collection. There is a reciprocal relationship.
between both phases, forming an interactive cyclic process, which has an inductive nature.

- The content of the transcriptions (interviews, focus groups...) or narrations (nonsystematic observation) is analyzed by means of a three-phase process: a) simplification (reduction of information to units of meaningful content through codes and categories); b) exposure (organization of information in matrices to obtain conclusions); c) verification (there are checks to see whether the conclusions are correct through validation techniques such as persistent observation, checks with participants, or triangulation of sources and techniques/instruments.

- The assessment of the research is based on the following criteria:
  a) Credibility. Isomorphism between the data collected by the researcher and reality.
  b) Transferability. The results obtained in a context or case can be applied to other cases or similar contexts.
  c) Dependency. Repetition of results when research is done on the same subjects and in the same context.
  d) Confirmability. The results are not biased by the motivations, interests and perspectives of the researcher.

Each of these criteria has verification techniques: theoretical sampling, large data collection, persistent observation, exhaustive description, triangulation of sources and techniques, checking with participants, etc..

Figure 5. Scheme of the research process

The research process ends when the collected information does not add anything to the interpretations about what happens in the analyzed case (saturation).

Example

- Problem: What models of relationship are established among unaccompanied young immigrants residing in shelters?
- The researcher decides to conduct the study in a shelter where 500 young people of different nationalities live. Half of the young people have lived more than a year in the center. These circumstances made the center ideal for obtaining information
relevant to the study.

- The researcher negotiates with the director of the youth protection system and with the director of the center permission to conduct the investigation (they facilitate entering the center). The following issues are commented on in the negotiation: the objectives of the study, the role of the researcher in the research process, their presence during a certain period of time in the center, the commitment of the center to facilitate the development of the research.

- Once the access was negotiated, the researcher collected information about the center over the first weeks: the distribution of spaces, schedules and activities, professionals who work in the center and young unaccompanied immigrants. They also consulted the center’s documentation to find out its history, organization and most relevant problems.

- The director of the center put the researcher in contact with different young people and educators. The researcher specified the problem of the study in the following questions during the initial contacts: what activities do young people do in the center? What activities enable relationships between young people? What rules do they make among one another to regulate coexistence? etc.

- When the researcher considers that they have established a certain affinity with some young people, they hold the first interviews, to obtain information about different aspects of life at the center. As key informants they chose young people who had lived more than a year in the center. In addition to the interviews they have there are a) nonsystematic observations at various times and areas of the center, b) interviews with staff of the center with the more years of work experience, and c) qualitative research diaries. The information obtained in the observations and the interviews with the staff served to contrast (to triangulate) the information provided by young people.

- The researcher progressively collects and analyzes the information at the same time. The researcher elaborates interpretations (work hypothesis) about the relationship models using the analysis of the content of the narrations and the transcriptions

- The researcher continues collecting information with other informants, in other areas of the center. In addition to observations and interviews, they organize discussion groups. The analysis of the information allows the modification and/or successive enrichment of the work hypotheses until the elaboration of a model on the relationships between the young people in the center.

- The researcher decides to finish the information collection/analysis process when it does not add anything new to their model.

- The study report is returned to the participants to see whether the model adequately interprets what happens in the analyzed context.

The researcher must take a series of questions into account when making decisions during the development of the investigation:

- What will the objective of the research be?
- What will be the case of the study? A person, a group of people, a center, an intervention program...?
- How many cases will be selected?
- What characteristics should the cases have?
- Who will access to the case of study be negotiated with?
- How long should I stay in the case of the study?
- What information about the case at the beginning of the investigation will be necessary to obtain?
- What questions should be asked about the case?
5.3. The research process from the critical perspective

The following methodological approaches are derived from the assumptions that the critical research perspective holds about the social reality and about the way of knowing it:

- The problems are identified by a group of people who perceive a difficulty in the context where they interact. These problems are posed with the aim of transforming/improving the social situations in which the individuals are involved.
- Through self-reflection, subjects become aware of how historical, political, social and personal factors distort their perception of social reality. Self-reflection helps to show these distortions and to transform the social context which they interact in.
- Quantitative and qualitative data collection techniques and instruments are used; more emphasis is placed on qualitative techniques and interpersonal communication.
- The sample is formed by the members of the work team conducting the research. The researchers are at the same time the subjects of the research.
- All the members of the work team participate in the analysis and interpretation of the data through discussion and reflection. The critical research perspective takes into account the political, social, historical, personal and academic factors that underlie the context which the subjects interact in.
- The assessment of the research is based on consensual validity, that is, on the potential of agreement among the members of the work team.
- The work team needs to have the following to ensure consensual validity: a) correct and complete information about what is being discussed; b) the ability to reasoned argument about the validity of the interpretations/reflections discussed; c) sufficient knowledge of one another to ensure that their participation is free of inhibitory mechanisms. Other criteria are used alongside consensual validity such as credibility.
- Scheme of the research process. The research design is elaborated using dialogue and consensus among the members of the work team. The design is not static; it is improved through a spiral process formed of successive cycles of planning/action/observation/reflection.

Figure 6. Scheme of the research process
Each cycle of planning/action/observation/reflection is organized based on the results and reflections derived from the previous cycle. This is so that the subjects progressively overcome the difficulties they perceive in their social context.

Figure 7. Action-Research cycles

Example

The educators of a center for young immigrants perceive that the young people have low academic and work expectations, and consider the need to improve those expectations.

- Given their lack of research experience, they contact with a university expert. This expert proposes that the educators collaboratively assume the search for solutions
- By means of a negotiation process, all educators commit to actively participate in the research and responsibilities are shared.
The group members diagnose the situation, analyzing the deficiencies of the center, the limitations of the educators and the difficulties of the young immigrants who arrive at the center. This diagnosis is made using the snowball, diamond, nonsystematic observation and open interview techniques.

The results of the diagnosis show deficiencies in the center, educators and young immigrants that prevent the improvement of academic/labor expectations.

Based on the diagnosis, the group members mark out the objectives of the research and the action hypotheses by consensus. The intervention strategies that should be used to improve the expectations of young immigrants are defined in the action hypothesis.

The proposed strategies are specified in a plan drawn up among all the members of the group. This plan includes: a) the actions to be carried out, b) the way in which the actions must be presented to and developed with the young people, c) the support materials, d) the timing, d) the techniques for collecting information on the implementation of actions, etc.

The implementation of the action plan is flexible. Each educator adapts the plan based on the response of the young immigrants. Educators meet on a daily basis to discuss the development of the actions.

The group members collect data on the process and its results during the development of the action plan. The data collection is performed: nonsystematic observations, group interviews, qualitative research diaries, etc.

The group members analyze the obtained information and reflect on the scope and limitations of the implemented actions. The reflection process involves reaching conclusions by consensus on the strengths and weaknesses of the action plan.

The members of the group begin to design a new cycle of planning-action based on the conclusions from the previous cycle, in order to continue improving the expectations of young immigrants.

The members of the group should consider the following issues during the development of the research process:

- Is the problem we have experienced in our professional practice relevant?
- Can we solve it? Do we need a research expert?
- Is it convenient to form a work team to find solutions to the problem?
- What responsibility will each one of us assume in that team?
- Will the decisions be debated and agreed?
- What techniques and instruments will we use to make an initial diagnosis about the problem? Who will apply them? Who will they apply to?
- How will we analyze the information obtained?
- What difficulties or shortcomings should be the object of preferential attention?
- What objectives of change will we propose?
- What actions will be most appropriate to achieve our objectives?
- Who will carry them out? Where, how and when will such actions be implemented? What materials will be used in the implementation of these actions?
- Can adaptations be made during the implementation of the actions?
- What techniques and instruments will we use to obtain information on the development of the actions? How will we analyze the obtained information?
- Do the actions carried out achieve all the planned objectives? Why have certain objectives not been achieved?
- What actions have facilitated the achievement of the objectives?
- Is it necessary to develop another cycle of planning-action? Why?

6. The methodological plurality in social research
Each of the three perspectives of the social research guides on: a) the problems that the investigators must analyze; b) the research process that allows us to respond to these problems; c) the research techniques that are adequate. Several authors point out that:

- The research perspective of a researcher determines their research method
- Given the differences among the different research perspectives, it is not possible to propose a complementary view among the research methods.

The following questions should be raised regarding the above assertions:

- Is it incoherent that a researcher supports a research perspective and uses the research method of another perspective?
- Is methodological complementarity possible in a research?

When a researcher chooses a research method, not only are their perspective on the social reality and the way to analyze it important, the type of the research problem and the available resources are also relevant. The defense of a research method against others has given way to a new idea that defines the current state of research: methodological complementarity. Complementarity not only implies tolerance towards the different ways of conducting research, it also supposes mutual support among them. The reasons for the complementary use of different research methods are:

- Research can have multiple purposes that require the use of different research methods.
- The joint use of different research methods provides perceptions that each method could not provide on its own.
- Since no research method is free from prejudice, only the "underlying truth" can be reached through the use of different research procedures.

The problem posed by a researcher will require them to conduct an experimental, correlational, interpretative or critical study. However, the study of a problem may require the use of different research methods at different moments of the research; for example, a) first, a survey study is carried out to know the behavior habits of the analyzed population; b) second, a case study is carried out to understand the models of the behavior habits.

Figure 7. Example of multi-methodological research
The adequacy of a research work to the demands of the problem depends on the researcher’s level of knowledge, intuition and creativity.

Research must be linked to the professional practice of teachers: "Well-cultivated teachers are needed, endowed with sensitivity and good pedagogical common sense, who are properly selected, continuously perfected, professionally motivated, who can to live with dignity of their profession and feel political, family and social support in their teaching activity, in order to achieve quality educational systems " (Gimeno, 2005: 122).

One of the most important conclusions derived from this brief manual on social science research is related to the fact that there are many more questions than the answers, more uncertainties than certainties, more tentative answers than closed answers. Researchers should adopt an open and authentic human dialogue in these times of crisis that facilitates understanding among cultures and helps to clearly formulate the real problems that beset postmodern society. A compass and an anchor are needed for an inescapable and potentially creative navigation in the wild river of life; the compass being education, information and knowledge and the anchor being our identities, knowing who we are and where we come from so as not to lose the track of where we are going (Castells, 1998).

Bibliography

Further information
5. conflict analysis

**Method: key questions for conflict analysis**
(A model from Hermann Giesecke, 1965)

**Underlying concept:**
Understanding a current conflict with the help of categories is the core of the method of conflict analysis (lat.: configere – to clash, to fight)

- **Concreteness**: What is the conflict about?
- **Historicality**: How did the conflict arise?
- **Interests**: What interests are important?
- **Power**: How is the balance of power?
- **Co-determination**: What options of co-determination exist?
- **Context**: In which functional context is the conflict embedded (general context, effects and consequences, future prospects)
- **Solutions**: Which legal options are available?
- **Solidarity**: What level of loyalty between people, groups, and societies is existing and necessary?
- **Fundamental rights**: How is the conflict to be assessed from the point of view of human rights?
6. Operators and Competency model

The following tables show “Operators” and the model of competencies by Oskar Negt, which students need in order to develop their own learning targets during a Reflect Lab.

For example, a student deals with issues about migration and refugees. A lecturer (together with the student) needs to make sure that the student strengthens competences like economic competence, ecological competence or competence of justice while dealing with issues of migration and refugees. At the same time, the lecturer and the student need to agree on the range of requirements. What does the student want to achieve? Does the student want to analyse or classify issues in a Reflect lab, outline certain aspects or develop solutions for specific situations?

It is the task of every lecturer to clarify these aspects together with a student at the beginning.

a) Operators*

<table>
<thead>
<tr>
<th>Operator</th>
<th>Description of the expected performance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>range of requirements 2:</strong></td>
<td></td>
</tr>
<tr>
<td>analyse</td>
<td>extrapolate the materials, content and/or state of affairs aspect-conducted and criteria-orientated and depict them structured</td>
</tr>
<tr>
<td>characterize</td>
<td>Describe facts in their own idiosyncrasies (quirks), mark typical characteristics and if applicable merge those under one or multiple certain aspects.</td>
</tr>
<tr>
<td>classify</td>
<td>assign a position/material reasonable or rather to put reasoned facts into perspective</td>
</tr>
<tr>
<td>explain</td>
<td>depict facts or issues - possibly with theories or mockups - ,so that conditions, causes, legitimacy or functional context become understandable</td>
</tr>
<tr>
<td>Outline</td>
<td>to clarify issues in their complex relations with examples and/or theories (based on acquirements or analysis of materials)</td>
</tr>
<tr>
<td>work something out</td>
<td>Examine materials on certain and explicit issues (not necessarily mentioned ones) and create coherences between the issues.</td>
</tr>
<tr>
<td>Prove</td>
<td>examine and provide evidence on materials</td>
</tr>
<tr>
<td>compare</td>
<td>Show similarities, commonalities and differences between issues</td>
</tr>
<tr>
<td><strong>range of requirements 3:</strong></td>
<td></td>
</tr>
<tr>
<td>asses</td>
<td>consider in a balanced way the points for and against issues or processes in a certain context</td>
</tr>
<tr>
<td>develop</td>
<td>state an assessment, a specific model for resolution, an opposite standpoint or a solution regarding an issue for the future</td>
</tr>
</tbody>
</table>

*based on a document by the ministry of culture of lower Saxony
b) model of competencies

According to the competency model, the aim of education is not just to collect as much knowledge as possible about a subject area. In addition, the ability to judge and act should be trained in order to reflect on the environment and to be able to measure one’s own behaviour against self-imposed demands within the framework of basic democratic values (cf. Hufer et al, p. 65, 68). According to Negt, the key to this is that learners are enabled to identify and establish interrelationships in politics and society in order to assess their environment (cf. Hufer, p. 80).

**Understanding of the competences**

In order to do this, these competences must be learned and deepened. Performance measurement is explicitly not even meant by the focus on these competences, so these competences are no instruments of control (cf. Hufer et al, p. 65, 67).

Competences in civic education are needed in order to understand politics and to be able to expand knowledge about them individually and independently. Normativities such as democracy, reason in the sense of delightment and human rights are used as reference points in order to formulate an opinion or judgement in accordance with the intention of political education. Central problem areas of the political are fields of conflict such as power, interest, domination, consensus and will formation, which must be worked on by the learners by independent judgement and opinion formation. (cf. Huber et al, p. 66).

**Demands on the concept of competences**

Lecturers need to have the skills they wish to impart to learners and assess and further consolidate their skills in discursive exchange.

Hubert et al list claims to a concept of competence in social science education that is at least consistent with the enlightened concept of education and thus promotes the harmony of reason, empathy and action, enables autonomous and subject-oriented education, focuses on central categories of the political and is oriented towards human rights and democracy (Hubert et al, p. 68)
Negt developed the concept of experiential learning and describes six key areas of competence that are essential for opening up society. The key competences are not to be viewed in isolation from each other, but are closely linked to each other. (Negt 2010, p. 234) (cited and translated from Hufer, p. 80-81):

1. **identity competence**
   According to Negt, identity has to be learned and changes within social context. Identity is a lifelong process, (cf. Negt 2010, p. 224).

2. **Technological competence**
   Knowledge of the effects of technologies on societies (cf. Negt 2010, p. 225)

3. **competence for justice**
   Awareness for equal treatment and inequality (cf. Negt 2010, p. 227)

4. **ecological competence**
   Awareness of sustainable management of nature, people and the environment (cf. Negt 2010, p. 230)

5. **Economic competence**

6. **Historical competence**
   Dealing with the past enables the ability to remember and to avoid mistakes from the past. In addition, it enables scenarios for the future (cf. Negt 2010, p. 232)

**Bibliography:**

Hufer, Klaus-Peter; Menke, Barbara; Overwien, Bernd: Kompetenzen in der außerschulischen politischen Jugend- und Erwachsenenbildung – eine Definition.

Hufer, Klaus-Peter: Oskar Negt: Zusammenhänge herstellen durch gesellschaftliche Kompetenzen.

7. Creating a mind map

A mind map serves to visualize thoughts. Our thinking is not necessarily linear, but in jumps and net-like relationships. This process should be reflected on the „memory map“, the mind map. A mind map consists of a central term written in the middle of a sheet of paper (a poster or a blackboard). This centre is the starting point for “main branches”, which “carry” sub-concepts of the topic. These, in turn, give rise to ramifications that contain further sub-concepts. Further terms can be added at any point. Instead of terms you can also use pictures or symbols.

What is the use of a mind map?
If you want to develop a topic (also in cooperation with others), you can collect all aspects that come to your mind, for example as preparation for a presentation or a scientific paper, then mind mapping is a good way to stimulate your imagination on the one hand and to structure it (in the form of generic terms and sub-concepts) on the other. You can also use a mind map to take notes about a lecture or a TV or radio report and then use your drawing to recapitulate what you heard.

Example*

*Source: http://www.mind-mapping.co.uk/wp-content/plugins/download-manager/cache/Terrorism-2000x0.jpg
8. Guide for the analysis of cartoons

Guiding Questions:

- What social, cultural or economic issue is illustrated in the cartoon?
- What does the cartoonist criticise?
- How is the cartoonist's opinion/message conveyed?
- What stylistic devices are used and how do they underline the meaning of the cartoon?

Assessment

In the end you assess a cartoon. Is the opinion or critique of the cartoon convincing?

Guiding Questions:

- Is the cartoon convincing? - Ist die Karikatur überzeugend?
- What effect does the cartoon have? - Welchen Effekt erzeugt die Karikatur?
- Does the cartoonist use suitable stylistic devices to convey his message? - Verwendet der Karikaturist passende Stilmittel, um seine Aussage zu vermitteln?
9. self-reflection

Questions for reflection are very important. They help the learners to organize their reflections and can be worked out together before, during or after the development of a portfolio.

The following exemplary questions have turned out to be useful in portfolios:

- Why do I consider this as my best work?
- What have I already achieved during the process (interest in the topic, difficulties and how to overcome them, preliminary hypotheses and solutions, review and application, newly acquired methods)
- How did I accomplish and complete this work?
- What does the result of my work show and what does it say about me?
- Where do I see missing parts and opportunities for learning?
- What would I do differently next time?
- What is the difference between this best result and the best result so far?
- How does the result relate to what has been learned so far?
- What is the achievement of this result? Where are still uncertainties?
- To what areas could my new knowledge be transferred?

It is also possible to place concrete orders instead of asking questions:

- Describe the work process in its individual stages and name the places where you have discovered the problem shown, where and how you got ideas, where difficulties arose and how they were overcome, how you explored the item and how you ensured the correctness of your result.
- Compare your result with the information you get from other sources.
- Describe with whom you discussed your results. List points that have been added as a result and state your approval or rejection of the suggestions you have received in each case in concrete terms.