

Academic Year/course: 2022/23

## 63130 - Theoretical framework for scientific knowledge production

### Syllabus Information

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**Academic Year:** 2022/23

**Subject:** 63130 - Theoretical framework for scientific knowledge production

**Faculty / School:** 107 - Facultad de Educación

**Degree:** 330 - Complementos de formación Máster/Doctorado  
573 - Master's in Lifelong Learning: Introduction to Research

**ECTS:** 6.0

**Year:** 573 - Master's in Lifelong Learning: Introduction to Research: 1  
330 - Complementos de formación Máster/Doctorado: XX

**Semester:** Annual

**Subject Type:** 330 - ENG/Complementos de Formación

573 - Compulsory

**Module:**

## 1. General information

### 1.1. Aims of the course

The student as user of research user:

a) Assess research scientificity, its credibility, rigor, substantiation, relevance and usefulness -among other criteria. As a future researcher or professional in the socio-educational field, the student will be able to discern between a scientific publication and other forms of knowledge.

And consequently,

b) Use the knowledge acquired about scientific approaches to evaluate specific research, assessing its contributions as well as its limitations and usefulness.

The student as a future researcher:

c) Be able to base their research under the criteria of scientificity of current social scientific and educational knowledge, and act accordingly in a theoretical, methodological and ethical manner.

These approaches and objectives are aligned with the following Sustainable Development Goal (SDGs) of the United Nations Agenda 2030 (<https://www.un.org/sustainabledevelopment/es/>), so that the acquisition of the learning outcomes of the subject provides training and competency to contribute to some extent to their achievement: Goal 4: Quality Education - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

From the utility of educational research and the impact of researcher training, the most remarkable targets of this objective are the following:

4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development

4.a Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all

4.b By 2020, substantially expand globally the number of scholarships available to developing countries, in particular least developed countries, small island developing States and African countries, for enrolment in higher education, including vocational training and information and communications technology, technical, engineering and scientific programmes, in developed countries and other developing countries

4.c By 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and small island developing States

Objectives 5 (Gender equality) and 10 (Reduction of inequalities) are assumed and included in the previous goal by ensuring quality education based on the ethical and social responsibility of educational research. Educational research will take these three goals into consideration in its epistemological referents and assumptions.

### 1.2. Context and importance of this course in the degree

A master's degree in research initiates students in research competence. This obviousness justifies the general goal of this subject: the student must know the epistemological foundations of scientific knowledge so that he/she can explicitly construct

his/her own worldview. The estimated disparity in previous training of students makes necessary a training diversification that will be reflected in different itineraries by optional subject modules. However, a common minimum will be established in order to ensure the scientific nature of studies and researches that students could carry on. This common minimum is established in this subject.

### 1.3. Recommendations to take this course

Students who have a previous psycho-socio-pedagogical training or they have studied some related subjects, they are in an ideal starting point. For those students coming from other knowledge macro-areas, it is recommended to watch some videos (for example, youtube platform) about epistemological foundations and education (in particular, we suggest this link <https://www.youtube.com/watch?v=DQvuw5nAjGg> on epistemology, education and complexity in educational research). However, the subject as a compulsory training starts with a basic terminological and conceptual introduction that allows students to follow its topics and syllabus without added difficulties.

The approach, methodology and assessment of this guide is prepared to be the same in any teaching scenario. teaching scenario. They will be adjusted to the socio-sanitary conditions of each moment, as well as to the indications given by the competent authorities.

## 2. Learning goals

### 2.1. Competences

#### *General and Basic Competences*

CG02 - Formulate new research problems broadening areas of knowledge and interest of science and society.

CG03 - Make decisions on the design of research to address specific problems based on scientific knowledge and in accordance with the values of professional ethics.

CG04 - Collect information and analyze it with tools and scientific guarantees.

CG07 - Elaborate and design proposals for solutions to problems identified or exposed based on scientific knowledge of a specific field.

CG08 - Plan actions to know the effects produced by specific interventions designed by public or private institutions.

CG10 - Understand the complexity derived from the changes produced in the educational system as a consequence of the presence in the classroom of students from different cultures, ages or learning rhythms.

CG14 - Elaborate reports and documents based on the adequate use of the language; and defend them orally and in writing according to the quality criteria of the specific fields and adapting them to the target audience.

CG19 - Plan processes of transferring research knowledge to the professional field.

CB6 - Possess and understand knowledge that provides a basis or opportunity to be original in the development and/or application of ideas, often in a research context.

CB8 - Deal with the complexity of formulating judgments based on information that, being incomplete or limited, includes reflections on the social and ethical responsibilities linked to the application of research and professional knowledge.

CB9 - Communicate conclusions, thesis and arguments to specialized and non-specialized audiences in a clear and unambiguous way.

CB10 - Develop learning skills for a continue studying in a way that will be largely self-directed and autonomous.

#### *Transversal Competences*

CT01 - Locate and manage sources of documentation for research.

CT02 - Plan the process of data collection and elaborate proposals for achieving solutions to complex problems or for evaluating their results

CT05 - Analyze data of research process

CT08 - Learn autonomously

CT09 - Develop an ethical commitment to research

CT10 - Develop critical reasoning

#### *Specific Competences*

CE01 - Understand the epistemological foundations of scientific knowledge in order to make explicit one's own worldview as a researcher

SC02 ? Use theoretical knowledge of educational research in different fields in order to analyze different researches and identify the most relevant methodological elements.

SC04 - Understand methodological implications in order to generate knowledge in the socio-educational field.

SC05 - Analyze the relevance of different types of methodological designs and analysis.

SC06 - Evaluate the quality of research according to the nature of the topic, the research purpose and the final sense of the knowledge production.

CE13 - Know formal and content issues about publication and elaboration of research papers and their oral defense

CE15 - Identify emerging problems in specific fields and design research or interventions for dealing with them.

## 2.2. Learning goals

1. Knows basic concepts of epistemology applied to research in education.
2. Analyzes epistemological referents of any educational research.
3. Transfers epistemological referents to a research project in education.
4. Applies theoretical and epistemological referents in order to choose pertinent research designs for the case.
5. Is aware of the specificity of educational research, compared to other knowledge areas and fields, and acts accordingly to this particularity.

## 2.3. Importance of learning goals

In the short term, this course is the basis for the development of Master's Thesis.

In the medium term, this course allows the novice researcher to provide a basis for his/her initial research worldview and to give a scientific account about it.

In the long term, this course imparts key references for scientific and professional meta-analysis, very useful for the professional and career development.

## 3. Assessment (1st and 2nd call)

### 3.1. Assessment tasks (description of tasks, marking system and assessment criteria)

#### Continuous Evaluation Process

Students must obtain a minimum of 5/10 by the following two assessment instruments:

A. An exam about minimum contents.

It is a written test of short essay or multiple choice questions. The evaluation criteria are correctness and content selection. The test revolves around the basic terms and concepts of epistemology, theorizing and the production of scientific knowledge.

The grade of this test will represent 40% of the final grade (from 0 to 4/10).

B. A Portfolio Assessment with the following products:

- Product I. Contextualization and justification of the epistemological foundation of the design/modality of a specific educational research.
- Product II. Thematization of a current problem on the epistemological referents of educational research.
- Product III. Documented self-evaluation in the realization of the tasks.

C. A self-evaluation report. It will account for 10% of the final grade (from 0 to 1 / 10). This report will be incorporated to the portfolio assessment.

The grade of the portfolio will represent 60% of the final grade (from 0 to 6/10) as follows:

- Product I. The rationale for the design/modality will account for 20% of the final grade (from 0 to 2/10).
- Product II. The thematization of the problem will be 20% of the final grade (from 0 to 2 / 10).
- Product III. The self-assessment will account for 20% of the final grade (0 to 2 / 10).

#### Product I Standards

- 1/10 Presents an adequate product - Correctly developed in its components.

- 2/10 Presents a relevant product - Evaluated in its sense.

#### Product Standards II

- 1/10 Presents a coherent product. Contains no errors. Basic development

- 2/10 Presents a relevant product - Integrated and extended development (references, arguments). Evaluated in its sense

#### Product III Standards

- 1/10 Self-assessment supported by completion of all tasks and assignments.

- 2/10 Reasoned self-assessment with the integration of teachers' feedbacks

#### Global Assessment

It will consist of a written test on the knowledge and application of the contents developed in the course. The structure will be as follows:

- 5 short questions on the knowledge of the program
- 2 development questions on the application to a practical case of the paradigmatic references of educational research, the rationale of the research design/modality and its openness to the most current challenges of educational research.

Passing the course will require passing the two blocks of the single test. Each block will represent 50% of the final grade.

The second call will be developed by global assessment.

## General warning

Fraud or total or partial plagiarism in any of the evaluation tests will result in the failure of the course with the minimum grade, in addition to the disciplinary sanctions that the guarantee committee adopts for these cases.

## 4. Methodology, learning tasks, syllabus and resources

### 4.1. Methodological overview

Given the fundamental condition and the mandatory nature, the teaching methodology articulates the development of the subject around three types of basic learning activities:

- Assimilation of the theoretical-practical contents of the program. It attends to the realization of all the tasks of the subject.
- Consolidation of the learning process. It integrates and is linked to the training developed in the methodological subjects in terms of research designs/modalities and demands its mobilization for knowledge, adequacy and operational rigor.
- Mastery of the learning process. It implies overcoming and opening to the current challenges of educational research and strengthening the levels of procedural and instrumental concreteness of methodological subjects and their foundation.

The autonomy (and responsibility) of students in the management of their own learning process is key and transversal.

Learning experiences are promoted with different didactic strategies:

- Lectures

- Practice

Sessions, Seminars and Workshops

- Problem-based learning

- Collaborative/cooperative learning

- Directed study/individual or group tutorials

### 4.2. Learning tasks

#### *Learning activities*

Activity	Hours	% On-site
Participation in Theoretical and Practice Sessions	35	100
Practices Sessions	25	100
Assessments	5	100
Assignments and Tasks	20	0
Autonomous work And study	60	0

All activities will be based on a critical reflection of the Sustainable Development Goals (SDGs) that guarantee quality education (goal 4) and inspired by equity (goal 5) and social justice (goal 10).

The themes of the activities and products will be defined from this perspective, exploring familiarities with other elective and compulsory subjects of the degree. As far as possible, this approach will also allow establishing synergies that allow a greater sustainability of the students' workloads. These possibilities will be explored throughout the academic year and within the educational innovation spaces that are expected to be promoted by the degree coordination.

### 4.3. Syllabus

The course will address the following topics:

Topic 1. Scientific theories and scientific educational knowledge

1.1. Epistemological evolution of science: the historicist school

1.2. Philosophy of science: Meanings of social scientific and educational knowledge

1.3. Current state of scientific-educational knowledge: complexity and educational research

Topic 2. The scientific communities: production and diffusion of educational scientific knowledge.

- II.1. Educational Research Designs
- II.2. Scientificity in Educational Research
- II.3. Evaluation of Educational Research

#### 4.4. Course planning and calendar

The academic calendar of the master's degree can be consulted on the web page of the Faculty of Education: [http://educacion.unizar.es/calendario\\_Master\\_aprendizaje.html](http://educacion.unizar.es/calendario_Master_aprendizaje.html)

For those subjects that provide for a final assessment and for those students who do not pass the continuous evaluation, dates and places of final exams can be found on the following page: [http://educacion.unizar.es/inf\\_academica\\_Master\\_aprendizaje.html](http://educacion.unizar.es/inf_academica_Master_aprendizaje.html)

Classroom materials will be available via Moodle: <https://moodle.unizar.es/>. These include a repository of the lecture notes used in class, the course syllabus, as well as other course-specific learning materials, including a discussion forum. Further information regarding the course will be provided on the first day of class.

The MaharaZar platform is also available for possible tracking and delivery of assignments and learning products ( <https://mahara.unizar.es/>).

The planning of the activities will be distributed as follows:

- November (14th, 21st, 28th)  
Topic 1. Scientific theories and scientific-educational knowledge / Evolution  
Analysis of discourses and research practices (referents and perspectives)
  
- December (12th, 19th)  
Topic 1. Scientific theories and scientific-educational knowledge / Evolution and Meanings  
Analysis of research discourses and practices (approaches, designs and models)  
Thematization of epistemological problems (product II)
  
- January and February (January 30th and February 6th)  
Scientific theories and scientific-educational knowledge / Meanings and Prospective  
Thematization of epistemological problematic (product II)  
Analysis of research discourses and practices (approaches, designs and models) [delivery].
  
- February (13th, 20th, 27th)  
Topic 2. The scientific communities: production of scientific-educational knowledge  
Thematization of epistemological problematic (product II)
  
- February (February 27th)  
Topic 2. The scientific communities: production of scientific-educational knowledge / Designs  
Foundations of the design/modality of an educational research (product I)  
Thematization of epistemological problems [delivery].
  
- March (6th,13th and 20th)  
Topic 2. Scientific communities: production of scientific-educational knowledge / Designs and Scientificity  
Fundamentals of the design/modality of an educational research (product I)
  
- March (27th)  
Topic 2. Scientific communities: production of scientific-educational knowledge / Scientificity and Evaluation  
Fundamentals of the design/modality of an educational research (product I)
  
- April-May (April 17th and May 8th)  
Fundamentation of the design/modality of an educational research (product I) [delivery].  
Global presentation of the tasks performed - Integrated self-evaluation (product III) [delivery].

According to the above planning, the three-hour sessions will be distributed in theoretical activities, seminars and practical workshops, and spaces for debate, exchange and contrast of information.

#### **4.5. Bibliography and recommended resources**

<http://psfunizar10.unizar.es/br13/egAsignaturas.php?codigo=63130>