Academic Year/course: 2021/22

63130 - Theoretical framwork for scientific knowledge production

Syllabus Information

Academic Year: 2021/22
Subject: 63130 - Theoretical framwork for scientific knowledge production
Faculty / School: 107 - Facultad de Educación
Degree: 330 - Complementos de formación Máster/Doctorado
    573 - Master's in Lifelong Lerning: Introduction to Research
ECTS: 6.0
Year: 573 - Master's in Lifelong Lerning: 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.

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 three assessment products:

A. An exam about minimum contents. The grade of this test will represent 40% of the final grade (from 0 to 4/10).

B. A Portfolio Assessment. The grade of the portfolio will represent 50% of the final grade (from 0 to 5/10).

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.

Rubrics

A. Exam of minimum contents

- It is a conventional assessment test. The grade is obtained following the usual criteria.

- Correction: 10 short questions or multiple choice (1 point / item).

- Grading: Decimal scale (from 0 to 4/10).

B. Portfolio Assessment

The portfolio includes the following evidences:

I) A brief essay on the theoretical contents taught in the first phase of the course (lectures) in which students incorporate complementary assignments (readings, discussions, etc.).

II) A shared reflection with teachers and tutors on the learning process.

III) A self-evaluation report.

Evidences and performances grading

I) The essay will account for 50% of the final grade (from 0 to 5/10).

SUSPENSED (0/10): Not respecting orthographic and typographic norms of a scientific essay. - Reducing the essay to opinions. - Not maintaining an argumentative coherence, or not responding to the topic of the essay and/or the proposed articles and readings. - Not maintaining an coherent argument, or not responding to the theme of the essay and/or the proposed articles.

PASSED (1/10): Meeting minimums indicated above. ? Integrating contents of lectures and suggested by teachers.

NOTABLE (2-3/10): Extending bibliographic references and readings. - Broadening fundamental references or argumentation structures (beyond minimum contents of lectures).

OUTSTANDING (4-5/10): Introducing original and current elements in epistemological and theoretical foundations, in thesis and ideas developments and argumentation structures (e.g., complexity).

II) The shared reflection will be APT/NOT APT.

NOT APT: no presentation or partial presentation.

APT: completed report presentation.

The grade of this evidence will be supervised by responsible teachers of tutorial processes.

III) The self-evaluation report will account the 10% of the final grade (from 0 to 1/10).

Considerations on evaluation system

Minimum contents of exam. Basic terms and concepts of epistemology, theorisation processes and production of scientific knowledge.

These contents will be reinforced with activities, tasks and assignments. However, when students will be confronted with educational research subjects for the first time, it is advisable to create a basic glossary. This task will be supervised in tutorials throughout the academic year.

Overall test and second call

This includes a written test about the contents of the program. This test will combine short and essay questions. The grade will be obtained following criteria in use.

Evaluation criteria:

 - Relevance and thoroughness of presented concepts.

- Adequacy and coherence in the application of theoretical knowledge to items proposed.

- Spelling and linguistic correctness

The second call will be developed by a global test.

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

The methodology followed in this course is oriented towards the achievement of the learning objectives. The methodology will be active and participatory (dialogic, creative, meaningful, critical and reflective). Given the fundamental condition and mandatory nature of the module 1, the teaching methodology will be articulated by three types of basic learning activities:

a) Activities that allow initiation in the theoretical-methodological foundation and production of scientific knowledge. As stated in the syllabus, they constitute the main part of the subject in terms of epistemological, theoretical and methodological references. They give a global scientific sense in order to follow other methodological subjects of module 1, as quantitative and qualitative approaches to educational research.

b) Operational development activities. They introduce methodological subjects about research designs and provide the basis for the collection and analysis of qualitative and quantitative data.

c) Instrumental skills activities. They imply a more concrete introduction to the methodological subjects and they are tutored by responsible teachers of methodological subjects.

The autonomy and responsibility of the student for managing his own learning process is a key and transversal issue.

Teaching methodology

A wide range of teaching and learning tasks are implemented, such as the following:

- Lectures: Presentation of the contents of the course by the teaching staff.
- Practice sessions: Promotion of collaborative learning
- Guided study: Process supported by teachers/tutors by individual and group modalities in different moments and spaces.

4.2. Learning tasks

Learning activities

Activity	Hours	% On-site
Assignments (individual/group)	30	10
Students presentations	30	50
Learning focus groups / Debates / Seminars	30	20
Autonomous work And study	60	0

4.3. Syllabus

The course will address the following topics:

I. Scientific theories and scientific educational knowledge.

I.1. The epistemological evolution of science: the historicist school.

I.2. The philosophy of science: the meaning of social scientific and educational knowledge.

II. The scientific communities: production and diffusion of educational scientific knowledge.

II.1. The criteria of scientificity in educational research.

II.2. Introduction to educational research designs.

II.3. The 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:

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

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 course is developed in three complementary sequences:

a) Expositive. Firstly, teachers will explain the theoretical contents, which are available in advance on the virtual platform Moodle (lectures, guided study);

b) Reflective. Secondly, students will prepare an essay in order to internalize and apply epistemological referents exposed (associated assignments, autonomous work and study, complementary readings, review of research reports and materials);

c) Applicative. Thirdly, students initiate in process of knowledge production under the supervision of a teacher and linked, as far as possible, to their Master's Thesis (associated assignments and tutorials).

4.5. Bibliography and recommended resources

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