UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

SYLLABUS DEL CORSO

Cognitive Development

2627-1-F5109P004

Learning area

Applied Experimental Psychological Sciences

Learning objectives

Knowledge and understanding

Students will acquire competencies in:

- Theories and methods in cognitive development
- The developmental cognitive neuroscience approach to the study of the human mind
- Developmental change from infancy to adolescence across a variety of cognitive domains

Applying knowledge and understanding

Students will acquire competencies in:

- Empirical questions, methods and limitations of research in cognitive development
- Evaluation of research outcomes and understanding of how empirical evidence and theories of cognitive development can inform each other

Making judgment

Students will gain the ability to independently integrate methodological and theoretical skills in the field of cognitive development and to apply them to critically judge previous studies and propose new research projects in the different sub-fields of cognitive development, taking into account the specific critical aspects of each research technique and various operational situations. Students will also gain the ability to reorganize the acquired

knowledge to promote innovative and original solutions through judgment based on empirical data and a critical reading of the complexities inherent to cognitive development. This will be achieved through class discussions, group work and paper presentations.

Communication skills

Students will acquire communication skills that allow effective interaction with various professionals from different cultural and scientific backgrounds; through group presentations, students will learn how to propose innovative research projects in cognitive development and to communicate their results and conclusions to an audience of specialists and non-specialists in a clear, detailed, and scientifically grounded manner, using the specific lexicon of the discipline. Students will also learn how to coordinate during teamwork and collaborate effectively and competently in English.

Learning skills

The course will promote the acquisition of the ability to adopt new developments and innovations emerging from international scientific results in cognitive development, updating one's skills to the rapid evolution of the field. The course will also promote the use of specialized bibliographic resources to perform in-depth scientific reviews to critically judge current knowledge in cognitive development and capitalize on it to propose further advancements in the field (e.g., through the development of new scientific projects). This will be achieved by discussing the available digital instruments to perform bibliographic research and through class discussions.

Contents

This course is aimed at providing an understanding of how children’s cognitive processes develop from early infancy to adolescence across a variety of cognitive domains. State-of-the-art research on cognitive development will be illustrated and discussed in relation to contemporary and more traditional views. The class will focus on how attention, perception, memory and mentalizing abilities change over time, and on the neurobiological mechanisms at the basis of these developmental changes.

Detailed program

- Theoretical approaches to developmental change
- Behavioral (e.g., eye-tracking) and electrophysiological (e.g., EEG, ECG, EMG, skin conductance) research methods in cognitive development
- Development of attentional, perceptual and memory processes
- Development of physical objects and numerical knowledge
- Origins and development of the social brain
- The neuroconstructivist approach to the study of atypical development

Prerequisites

A good knowledge of the basis of developmental psychology enables a more informed use of the course contents. Students lacking such basic knowledge are encouraged to ask for a list of basic references.

Teaching methods

Teaching will consist of lecture-based lessons (70%) and interactive classwork, i.e. discussion on ongoing data and research articles, group works and practical activities in the Bicocca baby labs (30%). Lessons are held in person and will contain at least a part of interaction with students. All course materials (e.g., slides, readings) are made available on the e-learning website of the course, so that also non-attending students can use them.

Assessment methods

The exam will consist of multiple choice questions and open-ended questions on the course topics (with optional oral examination). The questions are aimed at verifying the effective acquisition of both theoretical knowledge and research methods in the field of cognitive development. For the open-ended questions, the answers will be evaluated in terms of correctness, argumentative capacity, synthesis, and the ability to form links among the different areas of cognitive development.

An optional activity will be offered for students attending lessons. This will consist in a presentation of a research article in the field of cognitive development (20% of the grade). The presentation will be evaluated in terms of knowledge of the background literature, the correctness and argumentative capacity to report the aim, methods and results, and the ability to link the findings of the paper to the contents of the course.

Textbooks and Reading Materials

The bibliography will be provided at the beginning of the course and published in the course web-site.

Sustainable Development Goals

GOOD HEALTH AND WELL-BEING