

Psychometrics

Code: 102569
ECTS Credits: 6

Degree	Type	Year	Semester
2502443 Psychology	OB	3	1

The proposed teaching and assessment methodology that appear in the guide may be subject to changes as a result of the restrictions to face-to-face class attendance imposed by the health authorities.

Contact

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Use of Languages

Principal working language: catalan (cat)
Some groups entirely in English: No
Some groups entirely in Catalan: Yes
Some groups entirely in Spanish: Yes

Teachers

Maria Carme Viladrich Segués
Juan Martín Aliága Ugarte
Ariadna Angulo Brunet
Jennifer Morata Serrano
Albert Espelt Hernandez
Marina Bosque Prous
Eva Penelo Werner

Prerequisites

It will be very useful to acquire the competencies of previous methodology subjects: Methods, designs and techniques of investigation, Data Analysis and Statistical Models and Psychometrics. Therefore, students must be able to understand and apply the methodology used in research in psychology, and particularly the concepts of sampling and design with selective methodology. With regard to data analysis, you must know how to use basic descriptive and inferential analysis techniques and in particular, techniques for data reduction and reliability analysis. Other competences previously acquired and especially necessary to study this subject are the application of the APA regulations as regards the writing of texts and references as well as the application of the ethical principles of psychological assessment.

Objectives and Contextualisation

The subject Psychometry is part of the broader subject Methods of research and psychometrics. It is taught in the first semester of the third year of the Degree in Psychology. It is the last subject to be studied. The three previous subjects offer the basics of research methodology and univariable and multivariable data analysis. The formative objectives of the subject are:

1. Know the normative texts on the use and valuation of the instruments of measure in Psychology.
2. Analyze the psychometric properties of the psychological measures.
3. Calculate and interpret scores obtained with measurement instruments in psychology.

It is expected that at the end of the subject the student will be able to:

1. Learn relevant strategies to evaluate the validity and reliability of test scores
2. Know the characteristics of the tests that determine and affect the validity and reliability of their own scores.
3. Correctly interpret the scores offered by the tests.
4. Apply the criteria to select the tests and the guidelines to use and adapt them.
5. Understand scientific reports on the psychometric properties of the scores, with the objective to select tests for their correct use.
6. Use psychometric vocabulary correctly.

This subject, with Project-Based Learning (PBL) teaching methodology, has a link of Learning Service (ApS) with the Psychological Assessment Instruments Loan Service of the Faculty of Psychology and with the General Council of Psychology of Spain. The ApS is a social commitment of the university and at the same time an educational proposal through which the student can be trained by participating in a teaching project aimed at solving a real need in a given community (for more information <http://pagines.uab.cat/aps>, <https://eoslhe.eu>).

Competences

- Maintain a favourable attitude towards the permanent updating through critical evaluation of scientific documentation, taking into account its origin, situating it in an epistemological framework and identifying and contrasting its contributions in relation to the available disciplinary knowledge.
- Recognise and evaluate the procedures and techniques applied to the construction and adaptation of the instruments of evaluation in psychology.
- Recognise the deontological code and act ethically.
- Students must be capable of applying their knowledge to their work or vocation in a professional way and they should have building arguments and problem resolution skills within their area of study.
- Students must be capable of collecting and interpreting relevant data (usually within their area of study) in order to make statements that reflect social, scientific or ethical relevant issues.
- Use different ICTs for different purposes.

Learning Outcomes

1. Draw reasoned conclusions on the results obtained with respect to each of the types of evidence for the quality of psychological assessment instruments.
2. Evaluate the scoring and interpretation criteria for scores designed to draw conclusions about the characteristics of the people evaluated.
3. Identify research methods and data analysis techniques suitable for providing each of the required quality indicators in psychological assessment instruments.
4. Maintain a favourable attitude towards the permanent updating through critical evaluation of scientific documentation, taking into account its origin, situating it in an epistemological framework and identifying and contrasting its contributions in relation to the available disciplinary knowledge.
5. Make conclusions about statistical indicators of reliability and validity based on test theory.
6. Recognise the deontological code and act ethically.
7. Select the most appropriate instrument psychological evaluation to solve specific practical problems, taking into account quality requirements.
8. Students must be capable of applying their knowledge to their work or vocation in a professional way and they should have building arguments and problem resolution skills within their area of study.
9. Students must be capable of collecting and interpreting relevant data (usually within their area of study) in order to make statements that reflect social, scientific or ethical relevant issues.
10. Use different ICTs for different purposes.

Content

Thematic block 1: Introduction

1. What is a test and what is it for?
2. Documentation
3. Selection criteria for tests

- Thematic block 2: Interpretation of scores
1. How to interpret the scores of a test?
 2. Transformations of the scores
 3. Communication of the scores of the people in the tests
- Thematic block 3: Validity
1. Definition of validity
 2. Content of the tests
 3. Response processes
 4. Internal structure of the tests
 5. Relationship with other variables
 6. Consequence of the evaluation
 7. Aspects to consider for the evaluation of validity
- Thematic block 4: Reliability
1. Definition of reliability
 2. Psychometric theories for the study of reliability
 3. Designs for the assessment of reliability
 4. Estimation of scores
 5. Aspects to consider for the assessment of reliability
- Thematic block 5: Equity
1. Definition of equity
 2. Ways to check the equity of the tests

Methodology

In this course we propose different activities in active learning methodologies focused on students. Teaching techniques are based on Project Based Learning (PBL) that encourage meaningful and cooperative learning.

N.B. The proposed teaching and assessment methodologies may experience some modifications as a result of the restrictions on face-to-face learning imposed by the health authorities. The teaching staff will use the Moodle classroom or the usual communication channel to specify whether the different directed and assessment activities are to be carried out on site or online, as instructed by the Faculty.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
ABP seminars: approach and resolution of different practical cases of a psychometric nature and tutored work on the project of assessment of a test that is carried out throughout the course (seminar type classrooms and / or equipped with computers)	26	1.04	1, 3, 4, 8, 9, 6, 7
Type: Supervised			
In-person and virtual tutors	15	0.6	1, 3, 7
Type: Autonomous			
Cooperative learning activities	10.5	0.42	1, 3
Critical reading of psychometric material	30.5	1.22	1, 3, 9, 7
Participation in virtual debate forums	7.5	0.3	3
Reflective study and integration of matter	35	1.4	1, 3, 4, 9
Selection of psychometric material to prepare theoretical thematic blocks	7.5	0.3	7, 10

Assessment

The assessment of this subject is carried out continuously and has a clear formative function. With this intention, it includes reassessment within the normal course development and there is no special reassessment at the end of the course. Learning evidences must allow three groups of learning outcomes to be assessed:

1. Knowledge (E40.1), the use of score criteria and interpretation of scores, the ability to identify appropriate methods and techniques to evaluate the quality of the measures, and the ability to identify the results that are obtained and the main models and techniques of psychometric analysis and interpretation, and the critical application of the acquired knowledge.)
2. The selection on psychological evaluation instruments, writing conclusions, the correct interpretation of the results obtained from the application of psychometric tests presented and writing reasoned conclusions based on the results obtained after applying the psychometric methods and techniques that provide a response to a research hypothesis.
3. Positive attitude to continuous updating of knowledge, know and apply the code of ethics

Evidences of continuous assessment

The assessment is divided into two blocks. In the first block the knowledge of the theoretical part (up to 5 points) is assessed and in the second it assesses a project that consists of tasks of development (up to 2 points) and the presentation of a report (up to 4 points). The assessment of the theoretical part is done with face-to-face tests of closed or short answer questions. The project consists of the critical assessment of the manual of a test.

The first block, the TEST, is to demonstrate all psychometric knowledge answering knowledge tests that can be complemented by brief argumentations. Two tests are done face-to-face (TEST1 and TEST2). In the second, the knowledge shown in the first is re-assessed. A total of 5 points can be scored for this block.

TEST1. Completion of the test that includes all the subject contents explained. It is done individually and in person during (first assessment period). Maximum 5 points which may be recovered later.

TEST2. Completion of the test that again includes all the subject content. It is done individually and in person during (second assessment period). The 5 previous points are recoverable.

The second block begins with the project that seeks to consolidate the acquired knowledge of psychometrics by applying them to the assessment of the manual of a test.

It consists in exercising the contents of the manual that are proposed, worked on and delivered during the practical classes. The exercises are presented individually. Four subjects are worked on in the subject at the rate of half point each so that in total 2 points can be added. These points are not recoverable.

This second block is completed with presentation of the project report, which consists in putting in evidence psychometric knowledge by filling out, presenting and defending a document orally (CET-R) on the evaluation of the manual of a test. It is presented in writing twice (PROJECT1 and PROJECT2) and in the second an oral defense is also made. During the second presentation, knowledge shown in the first is reassessed and the grade may be different for each one. In total you can accumulate 4 points.

PROJECT1. Presentation of the draft report of the project, which includes the assessment of sections 1 and 2 of the CET-R, corresponding to all the subjects. This is done as a team and is presented in writing in the online campus (expected during Week 9). The team receives feedback on their draft and a score on 4 points that is recoverable.

PROJECT2. Final presentation of the project report and oral defense. The level of knowledge is assessed as much from the test manual as the evidences of interpretation of scores, validity and reliability that support it. The text is delivered, a collective presentation is made and finally individual answers are given to the questions

of the teachers. The presentation of the written text and the oral defence is given to the practical classes as of the week 12 on the prior agreement of the teaching team. In this evidence the 4 previous points are recoverable. Specifically, 2 of the points correspond to collective defence and the other 2 to individual defences.

These evidences are assessed by the teachers responsible for each project. The best evaluated reports in this part goes to a phase of corrections to be included in the psychological instruments database of the faculty and be sent to the publisher of the test manual if interested.

The criterion for calculating the accumulated score in recoverable evidence (TEST1-TEST2 and PROJECT1-PROJECT2) is the following: if the grade obtained in the most recent evidence exceeds the grade obtained previously, the accumulated grade is the most recent; however, if the grade obtained in the most recent evidence does not exceed the previous one, the accumulated grade is the average of both.

The results of the evidence will be discussed collectively in face-to-face sessions, and they may be personal interviews in the tutorial sessions with the teachers responsible for the group of seminar.

Definition of subject outcome

To pass the subject, two requirements must be met within the same academic year: a) Present at least TEST2 and PROJECT2 evidence, and b) Have accumulated a total of at least 5 points, with a minimum of 2 points in the course of the course presentation of the project report (of 4 possible) and a minimum of 2 points for the TEST evidence (of 5 possible). In the event of not meeting these requirements, the maximum grade to be recorded in the academic record will be 4.9 points.

Reassessment is continual and no separate reassessment system is anticipated.

Management of incidents with the learning evidences, and especially in the case that despite the reassessment planned during the course the required threshold is not reached, is done through face-to-face interviews with him teachers responsible for the group of practical classes.

Definition of non-evaluable students

Student who have given evidence of learning with a weight equal to or greater than 4 points will be considered "assessable". Otherwise, they will not receive an assessment grade.

Students registering for the second time (or more) have the same options as the others to create a new project and present at face-to-face tests. No integrative test is anticipated.

The formal characteristics of the evaluation are summarised in the table below.

Code EV	Denomination	Weighting	Fo
D	DEVELOPMENT OF PROJECT. Exercises in the classroom about him content of the manual	2	Wr
P1	PROJECT1. Report (sections 1 and 2)	4b	Wr
T1	TEST1. Knowledge test with answer argumentation	5b	Wr

P2	PROJECT2. Report (all sections) and oral defense	4a	Wr
T2	TEST2. Knowledge test	5a	Wr

Grade: a) Requirement to pass the subject; b) re-assessable

Link to Faculty assessments criteria: <https://www.uab.cat/web/estudiar/graus/graus/avaluacions-1345722525858>

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
0 DEVELOPMENT OF THE PROJECT. Exercises in the classroom on the contents of the manual	Maximum of 2 points	0	0	1, 3, 4
1 PROJECT1. Report (sections 1 and 2)	The PROJECT evidences are cumulative and carry a maximum of 4 points.	0	0	5, 1, 8, 9, 6, 7, 2
2 TEST1. Knowledge test of all subject (to that moment)	The TEST evidences are cumulative and carry a maximum of 5 points.	1.5	0.06	3
3 PROJECT2. Report (all sections) and oral defence	The PROJECT evidences are cumulative and carry a maximum of 4 points.	0	0	5, 1, 4, 8, 9, 6, 7, 10, 2
4 TEST2. Knowledge test that includes all the subject content.	The TEST evidences are cumulative and carry a maximum of 5 points.	1.5	0.06	3

Bibliography

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