Universitat Autònoma de Barcelona

2019/2020

Research Methods in Speech Therapy

Code: 101691
ECTS Credits: 6

Degree	Type	Year	Semester
2500893 Speech therapy	FB	2	1

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: No

Teachers

José María Losilla Vidal
Sonia Lorente Sanchez

Prerequisites

The student is assumed to have knowledge about the basic concepts of research methods that are taught in the subject Introduction to scientific methodology and psychological processes. The student is not assumed to have special knowledge of mathematics except to know the basic notions of data analysis taught in the Access to University Course and/or in secondary education in the different curricula. However, it is essential to have basic user computer knowledge

Objectives and Contextualisation

"Research Methods in speech-language therapy" is taught in the first semester of the second year of the degree. It provides the indispensable bases for a correct application of research methods and data analysis.

At the end of the course the student will be able to:

1. Understand the assumptions on which the logic of scientific research is based.
2. Differentiate the methodological alternatives used in speech therapy research.
3. Know the characteristics of the designs commonly used in speech therapy.
4. Appraise the research process using the main quality criteria.
5. Distinguish the level of measurement with which some data have been obtained, as an essential requirement for selecting properly the corresponding graphical analyses and the statistics or indices to be calculated.
6. Use descriptive statistical indices in order to summarize the data and correctly interpret the results obtained.
7. Know the basic methodological vocabulary in Catalan, Spanish and English.
8. Perform basic data analyses using statistical analysis software.

Competences

- Demonstrate an understanding and correct use of the terminology and methodology of speech-therapy research.
- Evaluate the scientific production that supports speech therapists professional development.
- Find, evaluate, organise and maintain information systems.
- Managing communication and information technologies.
- Reflect on and research into language and its treatment so as to help develop the profession.

Learning Outcomes

1. Argue suitably using within the framework of statistical thought.
2. Assess the usefulness of various theoretical models of language pathology, and methods and tools derived from each of these.
3. Critically and thoughtfuly evaluate scientific literature, placing it within an epistemological framework.
4. Discriminate between applied research using different research methods and techniques to search for evidence in speech therapy.
5. Draw reasoned conclusions on the advantages and limitations of different methodological approaches to addressing applied problems.
6. Explain critically and in a reflective manner the characteristics, advantages and limitations of scientific methodology in the field of speech therapy.
7. Explain the application of the scientific method for obtaining and accumulating evidence in speech therapy.
8. Formulate and test hypotheses about the demands and needs of recipients, and concerning research.
9. Interpret the content and scope of a claim by scientific evidence and the most adequate type of study to address this.
10. Managing communication and information technologies.
11. Properly identify the key components that are involved and participate in the process of scientific research.
12. Search, evaluate, organise and maintain information systems.
13. Set out reasoned proposals on methods of acquiring new evidence in speech therapy.
14. Use strategies pertaining to scientific method in the search for evidence in speech therapy.

Content

Principles of research methodology
-Methods, designs and quantitative and qualitative techniques in research in Speech Therapy
-Practice based on evidence
2. Experimental method
-Threats to internal validity (I)
-Between-subject vs. within-subject unifactorial experimental designs
-Factorial experimental designs
-Interaction

3. Extensions of experimental design
-Experiment vs. Quasi-experiment
-Threats to validity (II)
-Quasi-experimental designs
-Single case designs
4. Selective method
-"Ex post facto" designs: Cohort aetiological design, Case-control design, Analytical cross-sectional design
-Survey designs: Sampling and representativeness, Types of designs.
5. Observational method
-Characteristics
-Categorization and coding
-Sampling

6. Qualitative orientation and mixed methods
-Characteristics

-Main designs
7. Data processing
-Structure of a data matrix.
-Properties of the variables.
-Creation of variables.
-Case selection

8. Data analysis: descriptive statistics (I)
-Preliminary concepts
-Description of quantitative data: Graphic representations, Descriptive indexes based on moments (mean, variance, standard deviation and asymmetry), Descriptive indexes based on sorting (Median, quartiles and percentiles), Association between two variables (Scatter plot, Pearson linear correlation coefficient)
-Description of categorical data: Distribution of frequencies and graphs

9. Data analysis: descriptive statistics (II)
- Models of association between two variables: Two categorical variables, A categorical variable and a quantitative variable, Two quantitative variables

Methodology

On this course we propose different activities based on active learning methodologies focused on the student. In this way a "hybrid" approach is outlined in which we combine traditional didactic techniques with other resources aimed at encouraging meaningful learning.
1. Instructor-led
1.1. Master classes with multimedia support in group 1/1: Teacher's presentation of the main contents of the program and proposal of questions to favour the active participation of students. Methodological analyses and assessment of cases in which different statistical techniques and research designs are applied.
1.2. Practical classes in 1/4 groups: Presentation and practice in the computer room of methodological concepts through the use of ICT applied to bibliographic search and to data processing and analysis.
2. Supervised
2.1. Tutorials programmed with the teaching staff for the review of the directed activities.
2.2. Review of integrated problems.
3. Autonomous
3.1. Comprehensive reading of materials (books and scientific papers) referred by teachers
3.2. Individual preparation of summaries, diagrams and conceptual maps
3.3. Virtual tutoring with teachers and colleagues
3.4. Training in computer software based on tutorials prepared by teachers
3.5. Evidence 3. Self-evaluation of the learning process

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Class lessons 1/1 group	36	1.44	12, 4, 5, 6, 7, 13, 8, 11, 9, 1, 14, 10, 3, 2
Class lessons 1/4 group	8	0.32	12, 4, 5, 6, 7, 13, 8, 11, 9, 1, 14, 10, 3, 2
Type: Supervised			
Review of integrated problems	5	0.2	12, 4, 5, 6, 7, 13, 8, 11, 9, 1, 14, 10, 3, 2
Tutorship	5	0.2	

Type: Autonomous			
Abstracts, diagrams and conceptual maps	12	0.48	4, 5, 6, 7, 13, 8, 11, 9, 1, 14, 3, 2
Assessment. Self-assessment activity of the learning process	3	0.12	4, 5, 6, 7, 13, 8, 11, 14, 2
Comprehensive and critical reading of materials	36	1.44	4, 5, 7, 13, 8, 9, 1, 2
Tutorial-based training in software: data process and analysis	30	1.2	12, 13, 8, 9, 1, 14, 10
Virtual tutorials with teachers and peers	12	0.48	

Assessment

In this subject we intend that the assessment plays a pedagogical role and not just accreditation.
Next, we indicate the type of assignments that the student will have to contribute and their weight in the final grade:
Block 1
• Assessment 1 (Ev1). Written test. Contents: research methods.
• Assessment 2 (Ev2). Written test. Contents: data processing and analysis.
Block 2
• Assessment 3 (Ev3). Monitoring the self-assessment activity of the learning process that is carried out on the virtual campus. A trilingual Catalan / Spanish / English vocabulary must be delivered in the virtual campus. This activity is designed to set the pace of work, to reward continuous work, to consolidate concepts in a practical way and to answer questions that arise before taking Ev1.
* A student who has not submitted Ev1 or Ev2 will appear in the minutes ("actas") as "not evaluable" and therefore cannot take the re-assessment tests. In the event that a student does not submit any of the assessments in block 1, the student will need to provide proof of the reason why he/she has not been able to submit.
* Definition of passing the subject: a student has passed the subject when he/she has obtained a minimum score of 5 points and at least 1.5 of these points are from Ev1 and another 1.5 points are from Ev2.
* Re-assessment tests: Those students who have not met the criteria to pass the subject, and who have previously been assessed on a set of activities, will be able to take any of the re-assessment tests whose weight equals to a minimum of two-thirds of the total grade of the subject, and that have an average grade equal to or equal to 3.5 points.
The grade awarded in the assessment evaluated in the re-assessment will be Pass if the grade is greater than or equal to a grade of 5 or otherwise it will be Fail.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Evidencia 1 (Assessment 1). Written test. Contents: Research methods. Week 10	5 points	1.5	0.06	4, 5, 6, 7, 13, 8, 11, 9, 14, 3
Evidencia 2 (Assessment 2). Written test. Contents: Data processing and analysis. Week: 17	5 points	1.5	0.06	12, 4, 13, 9, 1, 14, 10
Evidencia 3 (Assessment 3).Self-assessment activity of the learning process. Week: 8	0,5 points	0	0	4, 6, 7, 13, 8, 11, 14, 2

Bibliography

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