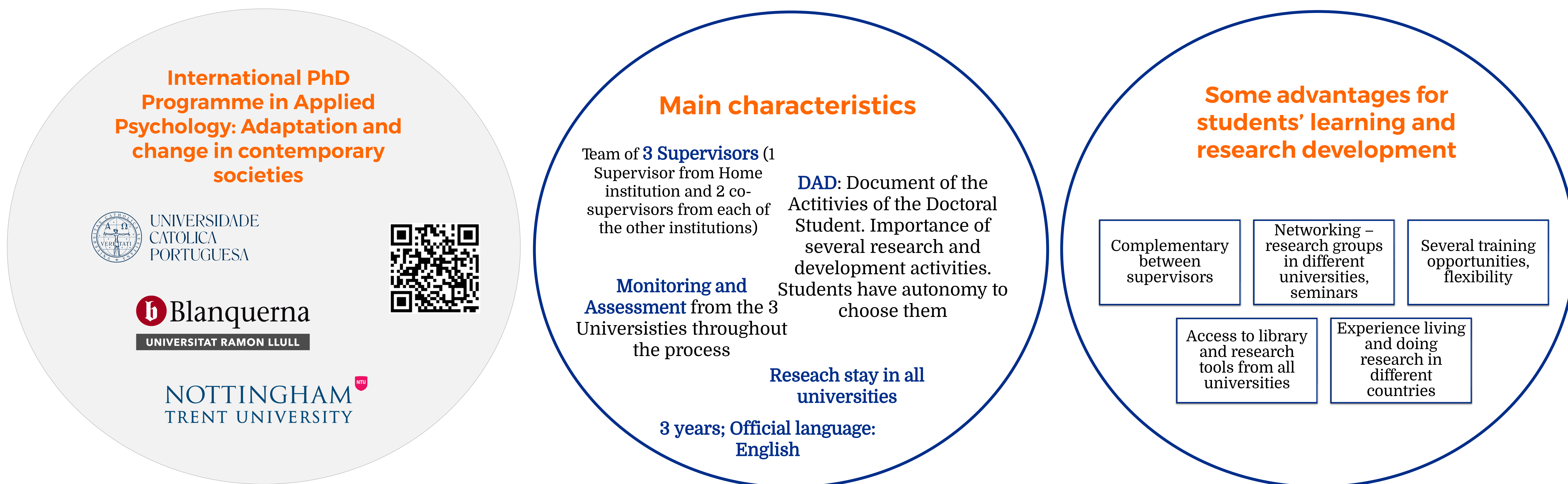


Developing conjoint research work through a Joint PhD Programme

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Project overview of the first two students of the PhD Programme

A whole-school approach to mental health and well-being promotion: Contributions for school-based universal screening from students to principals in Portuguese and UK schools

PhD Student: Rosário Serrão Cunha
Home institution: Universidade Católica Portuguesa
Supervisors: Pedro Dias, Mhairi Bowe, Ana Andrés
Data collection in Portugal and in the UK

School-based mental health promotion

Adolescents' mental health remains important

(e.g., Brooks et al., 2020; Gaspar et al., 2019)

Need to address school employee mental health

(e.g., Education Support Partnership, 2018)

Multi-Tiered System of Supports (MTSS)

Enhances the need for universal school-based screening (e.g., Rodgers, 2019)

Dual-factor mental health model

Proposes complete mental health screening (e.g., Moore et al., 2015)

Need for proper tools adapted to the context

Scarce literature in CMH screeners, including in Portugal and the UK (e.g., von der Embse et al., 2017)

Adaptation and validation process of **universal school-based screening tools for the complete mental health of pupils (12-15 years old), their teachers, headteachers, and non-teaching staff in Portuguese secondary state schools.**

Spatio-temporal dynamics in Alzheimer's disease: integrated knowledge from fMRI and EEG studies

PhD Student: Lucía Penalba Sánchez
Home institution: Universitat Ramon Llull
Supervisors: Ignasi Cifre, Patricia Oliveira-Silva, Alexander Sumich
Type of data analysed: resting state fMRI and EEG

SLEEP QUALITY, AGEING AND ALZHEIMER'S DISEASE

PROBLEMS:

- Changes in the brain connectivity start 20 years before symptoms.
- Statistics and ML techniques used until the moment cannot assess accurately the dynamism of the brain.
- Excellent discriminative markers and classifiers are needed.

OBSERVATIONS:

Traditional static functional connectivity approaches are based on the analysis of the gradual and continuous changes of the signals. These methods require increased computational processing and are prone to residual noise. The point process analysis and other novel similar methods decrease noise, computational demands and might improve classification performance.

OBJECTIVES

- (O1) recognize the spatial-temporal changes in the brain of patients with AD and MCI
- (O2) classify healthy young adults, MCI, AD and typical ageing as a function of sleep quality
- (O3) compare methods of acquisition and analysis techniques

STUDIES

- I. Apply PPA to existing rsfMRI (ADNI)
- II. Apply ML algorithms to sleep quality data and an existing rsEEG (from NTU)

DATASETS

- n=36 TA, n=59 MCI and n=34 AD
- n=29 young participants, n=39 TA, and n=27 MCI