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Profile

For over 13 years, I have been involved in **teachers' professional development**, in **teaching** undergraduate and postgraduate students, and in doing **research** and **consultancy** in projects related to **Science Education, Distance Education, Educational Technology** and **Learning Environments**.

Experience

TEACHERS' PROFESSIONAL LEARNING

Since 2007, I **designed and taught several certified teacher training courses** on distance education, educational technology, curriculum development in science education, active learning and science learning spaces, for both private and public schools and for the Portuguese Directorate-General for Education. I emphasise in my courses teachers' autonomy, collaboration, artistry, time-savvy practices and embedding in everyday practice. Some representative examples include: (a) Organisation and management of school science laboratories (2016-2018, 4 editions, circa 80 teachers); (b) "Use of learning platforms for managing synchronous and asynchronous learning, communication and collaboration" (2014-2017, 6 editions, circa 120 teachers); (c) "Using the new school science laboratories", with the collaboration of DGIDC and Parque Escolar, (2010, circa 120 teachers from 66 schools).

TEACHING

Between 2004 and 2015, I **have taught different subjects at several education levels, from primary to postgraduate**, including: (a) Children aged 13 to 18 (Natural Sciences in years 8 and 9 and Biology in year 11 in a public school in Portugal, Secondary School José Afonso, Seixal); (b) Future teachers (Educational Technology in the MEd in Physics and Chemistry and Biology and Geology Teaching offered by School of Sciences and Technology, New University of Lisbon); (c) Postgraduates in Education (Internet and Education in the MSc in Educational Sciences offered by Portuguese Catholic University); (d) Engineers and Science postgraduates (Scientific and Technical Writing in in the masters and doctoral programmes offered by I3N on Nanotechnology and Materials Sciences in the School of Sciences and Technology, New University of Lisbon). I have Qualified Teacher Status in England and Wales since 2008.

CONFERENCES AND WORKSHOPS

I have **given communications, presented posters and organized workshops** in national and international conferences and events. Some recent examples include: (a) Fernandes, J. & Barbeiro, L. (2015). Designing Pedagogical Graphic Novels as Tools for Educational Research, Practice and Professional Development? In EERA ECER 2015 Conference, 7 – 11 September 2015. Budapest, Hungary: Corvinus University of Budapest (communication); (b) Fernandes, J. & Barbeiro, L. (2015). Onenote: a digital tool for qualitative research. In ESERA 2015 Conference, 31 August – 4 September 2015. Helsinki, Finland: University of Helsinki (workshop); (c)

Fernandes, J. & Teodoro, V. D. (2014). Attitudes, expectations and practices in the Portuguese secondary schools' science learning studios. Flipped Learning for large groups: SCALE-UP Conference. UK: Nottingham Trent University, 12 September 2014 (poster);

RESEARCH

My **PhD thesis** discusses the development of the concept of **Science Learning Studio** as an alternative to the School Science Laboratory, in aspects such as space, technology, curriculum, pedagogy, assessment or teachers' professional development. My work also inquires about teachers views on the implementation of part of this concept in Parque Escolar's modernization plan, develops the concept of **Digital Research Notebook** (<http://onenoteinresearch.com>) as a meta-tool to make more transparent, collaborative and ethical the research process, and puts forward the concept of **Pedagogical Graphic Novel** as a process of documentation, reflective practice and analysis of practice resorting to a reconceptualization of **Activity Theory** (the thesis is available at <https://zenodo.org/record/1145642>).

I have **published** some recent papers departing from my thesis such as (a) Fernandes, J. & Teodoro, V. D. (2017, invited paper). O desenvolvimento dos espaços para a Educação em Ciências: do Laboratório Escolar ao Estúdio de Aprendizagem de Ciências. *Interações*, 13(44), 84-122. <http://revistas.rcaap.pt/interaccoes/article/view/12225/9335>; (b) Fernandes, J. & Barbeiro, L. (2017, peer-reviewed invited case study). Coordinating diverse research practices using Digital Research Notebooks - a case study in Science Education. *SAGE Research Methods*. <http://dx.doi.org/10.4135/9781473993983>.

I have participated in **research projects funded by Portuguese and European agencies**, on topics such as educational technology and design of school science laboratories: (a) Socrates Comenius project ITforUS - Information Technology for Understanding Science, 2005-2006; (b) Tempus Project DICSIM - Develop ICT Capable Schools in Moldova, 2007-2010; (c) FCT, the Portuguese national Science foundation, project Attitudes, Expectations and Practices in the Portuguese Secondary schools' science laboratories. I was involved in much of the activities carried out in these projects such as organizing events and seminars, designing the implementation strategy, designing the grant application, the research design, data collection and analysis, communication and paper writing, project management and reporting.

OPEN EDUCATIONAL RESOURCES

In 2009 I was part of a **consultant** team for the Plano Tecnológico da Educação (Education Technology Plan), coordinated by University of Évora, proposing a **digital educational resources implementation strategy** for Portugal.

In 2012, I **designed** the alternative model, **coordinated** and participated in the technical conception of the **self-published and open access Mathematics textbook for year 12**, NiuAleph 12, available at <http://niualeph.eu>.

DISTANCE EDUCATION

Between 2014 and 2018, I acted as **consultant for the Directorate-General of Education** for the initiatives: (a) Ensino a Distância (Distance Education), a K5-12 public online school for **traveller children** and other children that cannot attend brick and mortar schools; (b) Ensino Secundário Recorrente a Distância (Distance Adult Secondary Education), a public online secondary school for **adult education**; (c) and UAARE (Unidades de Apoio ao Alto Rendimento na Escola, Units of Support of High Performance in Schools), a pilot project to support **dual career athletes** in a network of 12 schools across the country. I reported directly to the Director-general or the National coordinator and developed the distance education aspects of the projects on a daily basis, supporting head teachers and school coordinators, designing the model, planning and supporting its development, applying for funding, designing and testing the IT infrastructure, spaces and software, training the teachers in new methodologies and supporting reflective practice, monitoring and reporting on progress, among others.

In 2009 I acted as a **consultant** for the Plano Tecnológico da Educação (Education Technology Plan), in a team of experts led by University of Lisbon, proposing a model for **communication, collaboration and LMS integration in the national web portal** for teachers, students and schools.

Between 2005 and 2007, I managed the **e-learning platform** of a higher education institution with over 4000 students (FCT NOVA), providing support, teacher training and developing its use from an early stage. I also participated in the initial steps

to develop an **institutional-wide digital repository** for technical and academic production.

LEARNING ENVIRONMENTS

Between 2007 and 2012, I **participated in the design of the new model for school science laboratories developed for the Portuguese secondary schools' modernisation plan led by Parque Escolar E.P.E.** This model was implemented in more than 120 schools across the country. I collaborated with the lead consultant in working with architects, engineers, science teachers, the industry and other technical teams to develop the new model, reviewed the literature, visited and reported on exemplary educational facilities in Europe and the USA, designed 3D models of prototype spaces, furniture and IT, participated in the review of the first implemented prototypes, organized and provided teacher training, commented building plans, shared the development work in national and international conferences, among others. More information can be found on <http://laboratorioscolares.net>.

In 2016, I acted as **short-term consultant for The World Bank**, for the initiative "Republic of Belarus Education Modernization Project", reviewing the procurement specifications to equip 120 schools' science and computer classrooms in the country (furniture, IT equipment, scientific equipment) and 3D modelling a proposal for a concept of science laboratories.

In 2017, I began the development of the Salas de Estudo Aprender + (Study Rooms Learn +) for UAARE

PROFESSIONAL SOCIETIES AND NETWORKS

In 2015 I acted as an **invited presider for a paper session on Epistemology and Science Learning** in the NARST Conference 2015 in Chicago, USA.

In 2014, I was one of the **journal editors** of the Thematic Issue on STEM Education of Revista Lusófona de Educação, Universidade Lusófona de Humanidades e Tecnologias, Lisbon, Portugal, available at <http://revistas.ulusofona.pt/index.php/rleducacao>

I am a **member** of ASE, NARST and ESERA (2018).

Education

PhD in Education (Curriculum Theory and Development), 2017, Joint Programme between New University of Lisbon and ISPA, Inter-University Institute.

Enrolment in the MPhil/PhD in Science Education, 2008, King's College London.

Degree in Natural Sciences Teaching (Biology and Geology), 2000-2005, New University of Lisbon.

Skills

Personal: I pursue slow science, minimal bureaucracy, generalist specialism, quality of life at work, meaningful and ethical projects and work-life balance. I suppose I have good interpersonal and communication skills (verbal, graphical). I am dedicated to innovating the field while learning from the past.

Technical: I am skilled with computers, networks and multimedia production, showing independent use of software for Productivity (Adobe Creative Suite Master Collection, Microsoft Office, OneNote Class Notebook Creator, Google Sketchup), Social Sciences Research (SPSS, XLStat, NVivo, EndNote, Zotero, Papers, Mendeley, Wizard, Jamovi, JASP), Instructional Design (Camtasia Studio, Captio), Server Management (Synology Diskstation, Cpanel), Content Management Systems (Wordpress, Drupal), Learning Management Systems (Moodle), Digital Repositories (DuraSpace, Omeka), Project Management (Redmine, Basecamp), Collaboration tools (Google Apps for Education, Office 365 Education, Zoom), Open Source Software and web applications related to education and multimedia. I am also skilled in technical writing and copyediting, particularly in scientific writing (e.g. desktop publishing, structured documents, mathematical notation following international standards).

Languages: International English Language Testing System's Academic Test (January 26, 2008) - Overall band score: 8 (Listening – 8.5; Reading – 8.5; Writing – 7.5; Speaking – 7.5). Fair use of Spanish and French.

Other: I am a 2nd Kyu in Aikido Aikikai, training with Sensei Francisco Carvalho since 2011 in Almada. I am also interested in sustainable farming and spend some of my weekends in the Santarém region since 2012, growing vegetables and trees and using the internet to program the irrigation system <http://blog.mogru.pt/>.