

Fundação para a Ciência e a Tecnologia

Evaluation Research Unit 2013

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1. IDENTIFICATION OF THE R&D UNIT

1.0 Reference

194

1.1 Name of the R&D Unit

Research Centre Didactics and Technology in Education of Trainers

1.2 Acronym

CIDTFF

1.3 Coordinator

Nilza Maria Vilhena Nunes da Costa

1.4 Multidisciplinary/interdisciplinary R&D Unit

No

Scientific areas

Educational Sciences(**Main Scientific Area**)

1.5 Profile of the R&D Unit

40% Basic research

60% Applied research and/or Experimental development

1.6 Keywords

Education and societal challenges

Teaching, learning and multimedia resources

Impact evaluation

Education, diversity and development

1.7 Link to the R&D Unit's page on the Internet

<http://www.ua.pt/cidtff>

1.8 Unit registration options

Keep

2. INSTITUTIONS AND THEIR ROLES

2.1 Main Host Institution

Universidade de Aveiro (UA)

2.2 Other(s) Host Institution(s)

2.3 Participating Institution(s)

Institution Name Host Institution

2.4 Institutional commitment

TECHNICAL AND ADMINISTRATIVE STRUCTURE

University of Aveiro (UA)

The UA seeks to develop and maintain a supportive research environment, where researchers can count with a solid and experienced administrative, financial and legal structure from which, to this purpose, we highlight the Research Support Office (GAI), Management of Human and Financial Resources Services (MHFRS), Technology Transfer Office (UATEC), a Mobility Centre (MB) and the Library, Document Management and Museology (LDMM).

The GAI (<http://www.ua.pt/ii/PageText.aspx?id=13375>) team is composed by specialists and projects managers who can offer research centers (RC) at UA help in the development and implementation of strategies for research, in pursuit of the objectives established for the UA and for the European Research Area.

The MHFRS (<http://www.ua.pt/sgrhf/>) comprise several main areas of expertise, where we emphasise the Financial Management of Programs and Projects Office, composed by a team of 8 persons exclusively dedicated to the participation of UA in funded projects. Additionally, each Department/RC has its own administrative structure that directly assists the researchers and work together with the central services.

Researchers can also find in the UA all the necessary support in terms of technology transfer. The UATEC (<http://www.ua.pt/uatec/>) mission is to support researchers in areas like the management and protection of intellectual property rights.

The UA maintains a MB (<http://www.ua.pt/gesp/>) dedicated to researchers that provide information and practical assistance for researchers coming to and from Portugal, with particular emphasis on the Aveiro region.

The LDMM (<http://www.ua.pt/sbidm/>) has the mission to make available information resources, to provide user-focused services to support the university's teaching, learning and research. The UA Libraries has an annual library training program intended for its users in order to inform them about the libraries services and digital resources and organize several workshops focusing on various topics having as main objective to deepen participants' skills in research, analysis, retrieval and management of information in an academic context.

TECHNICAL RESOURCES

UA / Department of Education (DE)

The RC will be located at the DE (www.ua.pt/de) which will provide all necessary technical resources, namely the rooms for the Research Laboratories (RL), for the Science Garden (SG), for all researchers, for the secretariat of the RC and for all the events that will take place in this institution.

The DE will also provide the necessary materials and equipment (such as computers, printers, laboratorial equipment and reagents, desks, furniture, cabinets) for all rooms allocated to the RC. The library located at the DE, Mediateca (<http://www.ua.pt/sbidm/biblioteca/PageText.aspx?id=15659>), will also offer access to several kinds of publications in the Social Sciences' area.

3. R&D UNIT DESCRIPTION AND ACHIEVEMENTS

3.1 Description of the R&D Unit

CIDTFF is a FCT Research Unit (RU), created in 1994, located nowadays at the Department of Education (DE) of the

University of Aveiro (UA), evaluated as Excellent in the 4 international evaluations. It includes members from the DE, other UA departments & other HEI.

The RU has been winning its position in the educational research in Portugal & abroad, due to the rationale underlying its creation: the interfaces between teacher education, supervision & specific Didactics (Languages, Maths, Physics ...) and Technologies, being the only Portuguese RU developing this conceptual framework.

Different challenges (in terms of framework and of the socio-political, cultural and epistemological value of research) at a inter/national level, and processes of self-regulation, elicited also by the external evaluations, lead to the development of a more ecological & comprehensive approach of the RU's project, namely on its:

- object (which was expanded, including broader domains such as impact of research, inclusion, interculturality, quality evaluation);
- research settings and target public (including other professionals & educational contexts, besides teachers and schools, such as local government, associations, public spaces).

In a knowledge-based society, the RU, aware of the political dimension of research, has been committed to projects that contribute to social challenges & innovation. Thus, the RU moved from a focus mainly in classroom issues to an investment also on trans-disciplinary ones, which implies a stronger articulation between research topics & educational contexts & actors (including decision makers & stakeholders). New issues and research questions emerged from challenges within these contexts, such as: institutional evaluation (of professionals & programs), institutional leadership, interculturality, intercomprehension, plurilingualism, SEN, sustainability & the potential of new spaces (public, virtual) for educational purposes.

Within this background, CIDTFF's research policy relies on 6 strategic principles:

1. Balance between research & development (economic, human, institutional, social) reinforcing the articulation between knowledge production & its transposition to educational community & society.
2. Inclusion of new research contexts & publics.
3. Networks & partnerships as operational resources.
4. Research programs crossing disciplinary areas.
5. Support to young researchers.
6. Emphasis on internationalization.

The main RU research action axes are:

- Conception & deepening of theoretical & methodological frameworks on educational issues in what concerns the role of Didactics, individual, professional & institutional development & technologies, that sustain educational actions to approach societal emerging challenges, by means of meta-analysis studies & literature reviews;
- Production, dissemination & evaluation of didactical resources, models and education strategies, as well as tools for scientific research itself.
- Knowledge transfer to education & decision making contexts;
- Evaluation of the impact of local, national & international policies.

The strategies to achieve what has been mentioned are:

- Design & development of projects on topics of trans/national interest.
- Consolidation & expansion of research networks & partnerships.
- National & international cooperation for the development of training and research practices with an emphasis on the collaboration with Developing Portuguese-Speaking partners.
- Development of diversified science dissemination actions (events, training workshops, multimedia resources) addressing diverse publics (researchers, teachers, trainers, students, larger audience).
- Strengthening the articulation between research & advanced training in PhD programs.
- Developing an editorial policy addressed to the scientific community (Indagatio Didactica journal) and to a broader public, in order to overcome the gap research/society and to promote professional and institutional development (e.g. Didactic brochures, electronic newsletter Encontros).

Between 2008-2012, CIDTFF was organized in 3 research groups (RG):

- Education, Supervision & Development, focused on the comprehension of educational, professional and institutional development;
- Education, Teaching/Learning & Development, studying formal/non-formal contexts in the developmental perspectives of critical citizenship and scientific culture;
- Quality Evaluation in Education, centered on the evaluation and assessment processes to study ways to promote the quality of several phenomena.

The RG are interrelated, which allows the design and development of projects that lay in the rationales of more than 1 RG (e.g. the project Evaluation of the impact of the Training Programme in Experimental Sciences Teaching, related to the 3 RG). These interrelations are reinforced by the RU's Laboratories, functional structures supported by research technicians, promoting the articulation between knowledge production, knowledge transfer and dissemination: LALE (Open Lab. for Foreign Language Learning), LAQE (Lab. for the Evaluation of Educational Quality); LCD (Lab. of Digital Contents); LEdUC (Open Lab. for Science Education); LEIP (Research Lab. in Education in Portuguese); LEM@TIC (Open Lab. for Mathematics Education); PAELAB (Policy and Educational Administration Lab), UTIS (Transdisciplinary Unit of Research on Supervision).

The articulation between the RG and the involvement of the members in the RU's activities are facilitated by the management structure: plenary, coordinator, coordinating committee, scientific committee and permanent scientific committee. We highlight this last committee, which includes the coordinator, the vice-coordinator, the coordinators of the RG and 2 elected members. The RU also counts with a team of administrative and technical research fellows with specific functions: internal and external communication; technical support to the labs and the RG; management of databases, platforms and sites; support in the submission of reports, projects and publications.

The cohesion of the work environment is also favoured by internal means of communication: electronic newsletter Encontros and weekly flashnews.

The conditions to promote international research competitiveness include:

-Partnerships and networks with international researchers, institutions & scientific associations (allowing publications in international co-authorship, the mobility of researchers, namely with Developing Portuguese-speaking Countries and training of young researchers in those countries).

-Organization of international meetings and conferences;

-Support to the submission of projects and articles;

-International journal *Indagatio Didactica*;

-Budget management allowing the international mobility of researchers;

-Participation in international committees for science evaluation and management (peer-review, PhD programmes, projects).

The RU is involved with 2 PhD programs with high ability to attract students.

3.2 Major achievements

The developed activities, many of them undertaken in international contexts, aimed at the consolidation and expansion of the epistemological matrix of CIDTFF, namely concerning knowledge development, dissemination and transfer, in the scientific field of Didactics, Training and Educational Technology, considering the social role of science and inter/national challenges.

Thus, the main achievements for the period 2008-2012 can be organized as follows.

- Reference frameworks to sustain research on: science, mathematical, technological and plurilingual/intercultural curricular approaches; mother tongue transversal approaches; transversal competences (like critical thinking, argumentation and questioning); teaching and learning practices (in formal and non-formal contexts); teacher and other professionals (like nurses) development; supervision; teaching and learning in virtual environments; educational policies; school leadership; teachers (in-service and pre-service) social representations; collaborative work; welfare; assessment and evaluation.

- Knowledge production and dissemination, namely in the area of Didactics (teaching and learning of specific and transversal competences) but also in related areas such as teacher education, professional development (of teachers, trainers, health professionals), educational policies (administration and leadership), supervision, evaluation and assessment. This production leads to the development of conceptual frameworks and guidelines to enhance educational practices. The dissemination was carried out by publications, on scientific events and through the web, and also by the RU's own dissemination strategies (e.g. indexed journal *Indagatio Didactica*; blogs like www.galapro.eu; sites, such as AIA-CTS (aia-cts.web.ua.pt), and Critical Thinking Network, redispensamentocritico.web.ua.pt/?page_id=46&lang=en).

Production, evaluation and dissemination of didactical resources, models and training strategies in different disciplinary and transversal areas (languages, maths; sciences, , supervision) and for different publics (children, pupils, HE students, kindergarten educators, teachers, trainers, researchers) were developed. These tools aim to promote: autonomy, (virtual) mobility, (plural) literacy, linguistic and intercultural competences, critical thinking (e.g. Didactic Courseware SERe®, addressing the pupils from the 1st/2nd Cycles of Basic Education; the guides *Exploring the Science Garden*, addressing teachers). Web platforms (integrating resources, surveys, state of the art, references, training scenarios) were developed (e.g. *Redes I&D-* to support the supervision of research, cms.ua.pt/RedeSIDEdu; *Galapro-Education of Trainers for Intercomprehension in Romance Languages*, galapro.eu/sessions; *ArguQuest - Skills, Argumentation, Questioning*, eLearning platforms).

Some of these materials were produced in and for international contexts (e.g. textbooks and teachers guides published within the project Curricular Reform of General Secondary School in East-Timor; self-training worksheets in the platform *Galapro*; a virtual mobility course).

Production and dissemination of research resources (e.g. *WebQDA*, a qualitative data analysis software; *TRACER*, an online visualization tool which allows HE Institutions to share and update the way they use ICT).

Knowledge transfer for (formal, non-formal and informal) educational and training contexts and for society in general, aiming to promote scientific culture, namely:

- actions addressed to several audiences (pupils, students, teachers, trainers, young researchers, other professionals and extended public), in face to face (eg. workshops in LABs and public spaces; *Journeys*) and in virtual environments (FB, *SecondLife*, internet platforms), some of them with high international visibility;

- protocols and joint actions within partnerships (government, municipalities, schools, associations, agencies, organizations). Eg. Protocol with a municipality leading to the creation of the Integrated Centre for Science Education in V.N. Barquinha, the 1st *Ciência Viva* School in Portugal (ciec.vnb.pt/investigacao/ciec-projeto-de-investigacao); joint actions with international agencies for linguistic policies (e.g. Latin Union) for the Curricular insertion of Intercomprehension in European, African and Latin-American educational systems;

- editorial initiatives, to bridge the gap between research and teacher education, in order to promote professional development (e.g. *Cadernos Didáticos*, *Cadernos do Lale*, www.ua.pt/cidfff/lale/PageText.aspx?id=9753, books on Maths education resources, www.ua.pt/cidfff/lematic/PageText.aspx?id=15522).

Support of young researchers and Advanced Training Human Resources, mainly in the context of 2 PhD Programs (Didactics and Training; Multimedia Education), postdoctoral studies and funded projects, connected with the 3 RG. We highlight the dynamics of the RU's young researchers, evident in the organization of the I ENJIE (First National Meeting of young Researchers in Education).

To increase the internationalization of the advanced training, namely in Portuguese Speaking Countries, CIDTFF intensified contacts with several Universities (eg. ISCED Huila (Angola), Eduardo Mondlane (Mozambique), Federal de Goiás (Brazil)) and received young foreign researchers, namely within projects and networks.

Cooperation with governmental institutions is a very important main achievement because it evidences our engagement with the political dimension of research. We highlight the involvement of the RU in the support to East-Timor in curricular redefinition of general secondary education, through a multidisciplinary project (RG1/RG2) which aimed to conceive and develop Curricular Programs, student Books and teacher Guides regarding 14 subjects. These products express our research perspectives on curricular development, teaching, learning and assessment. This project includes an In service Teacher Training Program for 24 East-Timor Secondary school teachers.

Finally, we underline the collaboration with the Ministry of Education and other Agencies of the Portuguese Government. This collaboration highlights the recognition of CIDTFF members' expertise and contributes to knowledge transfer within political guidelines. E.g: impact evaluation of Teacher Education Programme in Experimental Sciences; contracts with the Ministry of Education to coordinate Training Programmes for Basic Education Teachers in Experimental Sciences, Maths and Portuguese, and the Supervision and Evaluation of the 1st implementation of the probation period for teachers.

Key Publications

1. webQDA: Software de apoio à análise qualitativa (2011). Aveiro: Universidade de Aveiro, CIDTFF, Esfera Crítica. www.webqda.com

Textbooks and Teacher Guides for Secondary Education (3 levels) in East-Timor. Díli: Ministério da Educação da República Democrática de Timor-Leste. Textbooks <http://www.ua.pt/esgtimor/> <http://www.ua.pt/esgtimor/PageText.aspx?id=16806> <http://www.ua.pt/esgtimor/PageText.aspx?id=16807> Teacher Guides <http://www.ua.pt/esgtimor/PageText.aspx?id=17681> <http://www.ua.pt/esgtimor/PageText.aspx?id=17684> <http://www.ua.pt/esgtimor/PageText.aspx?id=17685>

Sá, P., & Martins, I. P. (2012). Education for Sustainable Development in Primary Schools: contributions from the development of a teacher training program. In F. Gonçalves, R. Pereira, W. L. Filho, & U. M. Azeiteiro (Eds.) Contributions to the UN Decade of Education for Sustainable Development (pp. 163-189). Frankfurt am Main: Peter Lang (ISBN 978-3-631-61347-4).

Baptista, A.V., Huet, I., & Jenkins, A. (2011). Quality of Doctoral Supervision: supervisors' conceptions of learning, supervision and students' profiles. In N. Jackson, L. Frick, C. Nygaard & N. Courtney (Eds.), Postgraduate Education: Form and Function (pp.43-58). Libri Publishing (ISBN 978 1 907471 26 1)

Ribeiro, J., Moreira, A., & Almeida, A. M. (2010). ICT in the education of students with SEN: perceptions of stakeholders. Communications in Computer and Information Science, 73, 331-337 (ISSN: 1865-0929).

Ventura, A., & Jang, S. (2010). Private tutoring through the internet: globalization and offshoring. Asia Pacific Education Review, 11(1), 59-68. (ISSN: 1598-1037 (print version); ISSN: 1876-407X (electronic version) <http://www.eduventura.com/resources/Ventura-e-Jang.pdf>

Araújo e Sá, M. H., de Carlo, M., & Melo-Pfeifer, S. (2010). O que diriam sobre os portugueses? [What would you say about Portuguese people?]: intercultural curiosity in multilingual chat-rooms. Language and Intercultural Communication, 10(4), 277-298. (ISSN: 1470-8477). [http://www.galanet.eu/publication/fichiers/539347_929947061_929816228\(1\).pdf](http://www.galanet.eu/publication/fichiers/539347_929947061_929816228(1).pdf)

Albergaria-Almeida, P. (2011). Critical thinking, questioning and creativity as components of intelligence. Procedia Social and Behavioral Sciences, 30, 357-362. (ISSN: 1877-0428). <http://www.sciencedirect.com/science/article/pii/S1877042811018957>

Bernardino Lopes, J., Branco, J., & Jimenez-Aleixandre, M. (2011). 'Learning experience' provided by science teaching practice in a classroom and the development of students' competences. Research in Science Education, 41(5), 787-809. (ISSN: 1573-1898). <http://link.springer.com/article/10.1007%2Fs11165-010-9190-5>

Nzau, D. K., Lopes J. B., & Costa, N. (2012). Formação Continuada de Professores de Física, em Angola, com base num modelo didáctico para o campo conceptual de Força. Revista Brasileira de Ensino de Física, 34(3), 3402.1-3402.14 (ISSN: 1806 - 1117 (print version); 1086 - 9126 (electronic version) <http://www.sbfisica.org.br/rbef/pdf/343402.pdf>

3.3 External Advisory Committee Reports

R&D Unit

File

Research Centre Didactics and Technology in Education of Trainers [CIDTFF Report_MichaelByram.pdf](#)

Research Centre Didactics and Technology in Education of Trainers [CIDTFF Report_HansHooghoff.pdf](#)

3.4 Composition of the External Advisory Committee

R&D Unit

Member Name

Institution

Research Centre Didactics and Technology in

Faculty of Education, University of

Education of Trainers	Jean Clandinin	Alberta, Canada
Research Centre Didactics and Technology in Education of Trainers	Michael Byram	University of Durham, England, UK
Research Centre Didactics and Technology in Education of Trainers	Anna Maria Pessoa de Carvalho	University of São Paulo, Faculty of Education, Brazil

3.5 Brief description of the output indicators 2008/2012 of the research team of the new unit that support the vision and objectives of the strategic program

4. FUNDING 2008/2012

Description	2008	2009	2010	2011	2012	TOTAL (€)
Pluriannual Programme/Strategic project	141750	136125	220000	246342	246342	990559
FCT-funded projects	103037	67400	89839	161992	207250	629518
European Commission-funded projects	71867	89543	45584	57976	24509	289479
Other international projects	0	0	0	0	1363	1363
Other national projects	41848	16086	498655	468352	377207	1402148
National industry projects	0	0	0	0	0	0
International industry projects	0	0	0	0	0	0
TOTAL (€)	358502	309154	854078	934662	856671	3313067

5. GENERAL INDICATORS 2008/2012

Description	2008	2009	2010	2011	2012	TOTAL ()
No. of researchers	113	126	142	170	156	707
No. of integrated researchers	40	51	56	66	73	286
No. of technicians and administrative staff	8	8	8	19	24	67
PhD theses under the supervision of integrated members	9	11	10	20	52	102
Publications in international peer reviewed journals	29	60	47	81	93	310
Books and chapters of international distribution	19	25	25	41	43	153
Models	0	0	0	0	0	0
Patents	2	2	2	1	0	7
Prototypes	0	0	0	0	1	1
Industry research contracts	0	0	0	0	0	0
Research contracts with national or international bodies	3	3	10	5	3	24
Research projects funded by the I&D Unit (CIDTFF)	2	0	3	1	1	7
Publications in national peer reviewed journals	18	13	28	18	20	97
Books and chapters of national distribution	17	33	35	24	39	148
International conference proceedings	77	73	95	111	94	450
National conference proceedings	47	47	26	40	16	176
Edition of journals and books	2	8	14	12	16	52

Textbooks and scholar editions	3	3	0	5	4	15
Didactic Resources	6	3	6	7	3	25
Audio/visual and electronic/digital materials, including software and web-based resources	2	1	4	5	5	17
Organisation of scientific dissemination activities	21	29	30	32	44	156

5.2 Overall description of indicators and research outputs/Highlights

Table 5.1 evidences CIDTFF's research results & dynamics (2008-2012), namely through the increase of indicators, e.g. researchers (38%), integrated researchers (83%), publications in peer-reviewed journals (210%), international books/book chapters (137%) & PhD thesis (478%) (112 supported by FCT).

The growth of international publications is enhanced by the scientific & financial management of the RU: supporting missions whose products are papers or investing in translation (mainly to English). Some papers received awards (e.g. International Award for Excellence in the world universities field, uaonline.ua.pt/pub/detail.asp?lg=pt&c=9506).

This dynamic was mainly undertaken in international contexts, particularly within projects. From the 24 listed projects, 8 are international, potentiating a high no. of publications with researchers from other countries: GALAPRO; European Network on Intercomprehension; The European Research Network on Learning to Write Effectively; Teacher Virtual Campus; Western-Eastern Teacher Education Network; Teacher Education Review and Update of Curriculum; Mutualisation et Innovation pour un Réseau de l'Intercompréhension à Distance; Passeport Numérique de Compétences pour Améliorer l'Employabilité des Lauréats de l'Enseignement Supérieur Marocain.

Another increasing indicator concerns hiring research technicians, which tripled between 2008 and 2012. This financial effort is aimed at supporting activities of research, dissemination and knowledge transfer (KT), specifically: projects, publications, attraction of competitive funding, events and dissemination activities aimed at different audiences (e.g. Research Day, Summer Academy, Summer School) and open Lab programs (e.g. visits, workshops, training courses, dissemination of materials and resources, training & communication platforms management).

This management enables an increase in dissemination and KT outputs. With regard to dissemination, there is an increasing no. of activities, both national & international, targeting different audiences (peers, teachers, stakeholders):

- International Conferences: 4th EDILIC Congress, 2nd International Seminar on Research on Questioning; 7th EDEN Open Classroom Conference; 2nd ECIU Symposium; ICEM&SIIE'11 Old meets new - media in education;
- National Conferences: 1st Math and Creativity Meeting; 1st National Meeting of Young Researchers in Education;
- publications (for peers - *Indagatio Didactica*; for education professionals: *Cadernos Didáticos*; *Cadernos do LALE* (4), *Cadernos do Leip* (2));
- Open Seminars promoted by: CIDTFF (uaonline.ua.pt/pub/detail.asp?lg=pt&c=16332); RG (uaonline.ua.pt/pub/detail.asp?lg=pt&c=24680); Labs (uaonline.ua.pt/pub/detail.asp?lg=pt&c=28530);
- projects (www.ua.pt/cidfff/lematic/PageText.aspx?id=15640);
- exhibitions (From planetary emergency to the construction of a sustainable future);
- sites (aia-cts.web.ua.pt), blogs & videos.

In what concerns KT, the following indicators stand out:

- International training courses: GALAPRO (www.galapro.eu/sessions); 796 enrolled from 14 countries, 3 continents); Teacher Virtual Campus (40 participants of 5 nationalities and managed by 6 European HEI);
- Workshops for pupils and teachers (in 2008-2012 the Science Garden received 2509 visitors & LALE 2205).
- Textbooks & scholar editions for different publics (children, students, teachers, other professionals, specific publics, like SEN), different levels (from preschool to secondary), for different subjects (Geology, Math, English, Physics, Portuguese), different competences (reading, creativity, math literacy, learning, plurilingual, writing), topics (sustainability, intercomprehension, poetry) & for formal & non-formal contexts;
- New materials, including audio/visual & digital, web-based resources, software & courseware (Galapro and RedeSID platforms, EVtux, Arguquest, WebQda, Courseware Sere). Some of these materials originated workshops & training courses, some of them international ([WebQda, www.webqda.com/formacao/equipa-de-formacao/](http://WebQda.com/formacao/equipa-de-formacao/)), some with the collaborations with enterprises (e.g.BP).

Another relevant output is the national & international research contracts. With a dimension of KT, we highlight:

- East-Timor project in Curricular Redefinition of General Secondary Education (www.ua.pt/esgtimor/Default.aspx) coordinated by our RU & involving 60 other members (9 from CIDTFF). Curriculum Programs, student Books & teacher Guides on 14 subjects were conceived & developed, and an in-service teacher training program for 24 East Timor teachers (14 subjects) was developed in the UA by RG 1 & 2;
- Contracts with the Ministry of Education (ME): National Program for Teaching Portuguese in elementary school; In-service Program for Basic School Math Teachers; Elementary Teachers Training in Experimental Teaching of Science. The Math program involved 1861 trainers & generated 10 meetings & 9 books. The excellence of the work program in Sciences generated a subsequent contract with the ME (Evaluation of the impact of the Training Program in Experimental Teaching of Science: A nationwide study, 2010), involving 4 universities, 14 polytechnics, 140000 pupils

& 7000 teachers. Contract with the ME (Supervision & Evaluation of the 1st implementation of the probation period(PP) for teachers), involving all teachers of Portugal in PP.

Another meaningful KT example, with high national visibility (presented in the TV program Câmara Clara, camaraclara.rtp.pt/#/arquivo/265) and involving a contract with a municipality (V.N. Barquinha), was the creation of the Integrated Centre for Science Education, the 1st Ciência Viva school in Portugal which supports teacher practice of innovative approaches (ciec.vnb.pt/investigacao/ciec-projeto-de-investigacao).

The excellence of the CIDTFF's research has been stressed out in the highlights of UA (e.g. revistas.ua.pt/index.php/researchua/article/viewFile/1115/1042; www.ua.pt/research/ReadObject.aspx?obj=23287).

6. SCIENTIFIC COMPONENT - STRATEGIC PROGRAMME 2015/2020

6.1 Abstract in Portuguese for publication

O CIDTFF é uma Unidade de Investigação (UI) FCT, criada em 1994 e sediada no Departamento de Educação (DE) da Universidade de Aveiro (UA). Integra membros do DE, outros Departamentos da UA e Instituições de Ensino Superior (ES). O seu referencial epistemológico é a exploração de interfaces da formação e da supervisão com didáticas específicas (Ciências, Matemática, Línguas, ..., do pré-escolar ao ES), e tecnologias, sendo a única UI portuguesa com tal matriz, singularidade que a projetou (inter)nacionalmente.

Numa sociedade baseada no conhecimento, a investigação, em particular em Educação, assume cada vez mais um papel (socio-cultural-político, económico) e, contribuindo para formar cidadãos mais qualificados, críticos e comprometidos com o futuro. Assim, o programa estratégico (PE) do CIDTFF define-se em articulação com desafios societais (identificados, em particular, pela Estratégia Europa 2020 e suas agendas, pelas Estratégias Regionais), problematizando-os a partir da didática e tecnologia na formação de formadores. Ainda, em espaços cada vez mais instáveis, deslocalizados e partilhados, onde o conhecimento é empresa coletiva, este PE desenvolve-se em redes (de pares e outras, com instituições e atores educativos), nacionais e internacionais, vistas como oportunidades de sustentabilidade e transferência da investigação para a sociedade.

A UI aposta também na captação e qualificação de recursos (humanos, financeiros, estruturais) que a dotem de meios de competitividade. A formação avançada (pos-)doutoral é aqui nuclear e a UI tem programas próprios e outros previstos em parceria.

Neste quadro, o CIDTFF define as problemáticas de investigação no âmbito de uma conceção alargada da Didática, ciência de interface que projeta um olhar ecológico sobre o seu objeto, os processos de ensino/aprendizagem, abrangendo as suas condições de regulação (discursos instituintes e instituidores), as circunstâncias em que ocorrem (atores, seus perfis e relações, representações, recursos) e os espaços comunicacionais em que se constroem (físicos, virtuais, públicos e privados), numa lógica de aprendizagem ao longo da vida (APLV). Para além do público escolar (alunos do pré-escolar ao ES, professores e formadores), o seu público-alvo inclui educadores num sentido mais lato (como responsáveis de programas e espaços educativos), stakeholders e decisores.

Assim, e tendo em conta o percurso do CIDTFF, as suas estruturas e perfis dos membros, definem-se como objetivos do seu PE:

- Construir conhecimento didático sobre processos educativos, formativos e supervisivos (em espaços formais e não formais, presenciais e virtuais), numa perspetiva de APLV, contribuindo com respostas inovadoras para o desenvolvimento de sujeitos, grupos e instituições comprometidos com desafios societais.
- Construir uma visão abrangente dos resultados da investigação, projetando quadros de referência para a conceção e prática de ações de educação/formação que os incorporem de forma integrada.
- Desenvolver, aplicar e avaliar programas, metodologias e recursos de suporte a processos de ensinar/aprender/formar e investigar de qualidade.
- Potenciar, em parceria com outros agentes e instituições, a transferência do conhecimento em Didática e avaliar o seu impacto no desenvolvimento dos públicos-alvo, tornando a inovação económica e socialmente mais aceite.
- Desenvolver perspetivas críticas sobre conexões entre políticas e práticas de educação/formação, contribuindo para a definição destas políticas com propostas baseadas na investigação.
- Investir na formação de jovens investigadores, capacitando-os para percursos de investigação/formação/inovação de elevado nível e profissionalmente inseridos.
- Consolidar uma política editorial diversificada (em destinatários e linguagens) de comunicação da ciência, com aposta nas TIC.

Para desenvolver este PE, o CIDTFF organiza-se em 4 grupos de investigação (GI):

- Linguagens, teorias e práticas de educação e supervisão, cujo foco é compreender como a diversidade de linguagens é usada e pode ser potenciada em situações de educação, formação e supervisão, tendo em vista o desenvolvimento de uma literacia plural dos atores e suas instituições.
- Ciência, ensino, aprendizagem e sociedade, focado no papel da ciência em contextos educativos formais e não formais e em modos de o potenciar, desenvolvendo a literacia científica dos cidadãos.
- Comunicação, media e ambientes digitais e virtuais em educação, orientado para o estudo de processos de promoção da literacia tecnológica, através de ambientes de educação/aprendizagem a distância e com aposta nos recursos multimédia.
- Políticas, organizações, avaliação e liderança, centrado na análise das relações entre melhoria da escola, políticas

educativas e o papel das lideranças e da avaliação.

Na complexidade crescente dos fenômenos educativos, a exigir abordagens transdisciplinares e integradas, o CIDTFF definiu ainda 2 Linhas Temáticas, que envolvem investigadores dos vários GI:

- Intercompreensão, sustentabilidade e desafios sociais, visando definir um quadro de referência e de ação coerente e mobilizador, com implicações curriculares, no sentido de uma educação comprometida com o desenvolvimento sustentável.

- Avaliação do impacto social da investigação em educação, com o objetivo de identificar condições que o potenciem junto de vários atores e espaços educativos.

Para cumprir este PE, o CIDTFF atua em rede e no cruzamento entre produção, difusão e transferência do conhecimento, apostando na formação dos públicos e na articulação com a comunidade. Os laboratórios, estruturas funcionais com recursos (humanos, didáticos e de formação) especializados e planos de ação concretos, servem este fim e constituem mais uma aposta do CI, configurando ainda um ambiente de acolhimento de investigadores, professores e formadores de Portugal e de outros países.

6.2 Abstract in English for evaluation

CIDTFF is an FCT Research Unit (RU) created in 1994 & located at the Department of Education(DE) of the University of Aveiro(UA). It integrates members from the DE, other UA Departments & other Higher Education (HE) Institutions. The epistemological framework of the RU strategic program (SP) is the exploration of teacher education & supervision interfaces together with Specific Didactics (Sciences, Math, Languages, PE) & ICT from pre-school to HE. It is the only Portuguese RU with such a matrix, which promotes its international prestige. In a knowledge-based society, educational research plays an important role (sociopolitical, cultural, economic & epistemological), increasing the need to educate more qualified & critical citizens. The CIDTFF SP is defined in close articulation with the challenges facing globalized societies (defined by regional, national & European strategies, specially in under the Europe2020 Strategy & Agenda) namely in the areas of Didactics & ICT in trainer education. In increasingly unstable, delocalized & shared spaces where the construction of knowledge occurs as a joint enterprise, the development of the SP is carried out in extended & complex networks, at inter/national levels (peer & institutional networks, with actors involved in educational training who perform in wider social spaces(municipalities, associations, libraries, theaters, museums...). Such networks provide opportunities both for knowledge production & transfer in areas where they acquire true meaning & strategic value, contributing to the development of such spaces, actors & institutions. In order to be sustainable, the RU SP is strongly committed to attract human, financial & structural resources, through active response to calls that may equip the RU with means to become increasingly competitive. In this context, the RU is committed to its own doctoral programs, as well as with other RUs, articulating R&D, training & innovation. CIDTFF defines its research questions in the context of a broader notion of Didactics, understood as a science that ecologically glances at its study object (processes of teaching/learning), covering its regulation conditions (institutional discourses), circumstances in which such processes occur (actors, profiles, relationships, representations, resources) & communication spaces where they emerge(f2f, virtual, public, private) from a lifelong learning (LLL)perspective not limited to formal/traditional education areas. The target public is not confined just to school(levels of education, students, teachers & trainers), but also other educators(caregivers, stakeholders & policy makers). Considering the research & knowledge already produced by the RU, its structures & members profiles, the following goals are defined:

- Develop didactics, training & supervision processes & knowledge(formal & non-formal spaces; f2f & virtual environments), from a LLL perspective, contributing with innovative responses to developing individuals, groups & institutions.
- Build a comprehensive overview of research results, defining reference frameworks for the design & action practices that integrate them.
- Develop, implement & evaluate didactic & research-based programs, methodologies & resources, which support quality teaching, learning, training & research processes.
- Foster Didactics knowledge transfer in partnership with educational actors & institutions, & assess its impact on the development of its target audience.
- Raise critical issues about connections between educational & training policies & practices, considering sociocultural & historical contexts, contributing with research-based proposals for the definition of education & training policies.
- Invest in young researchers, enabling them to follow high-quality research/training/innovation paths.
- Promote networks & partnerships to develop research & intervention projects.
- Consolidate a diverse editorial policy & develop strategies for science communication & dissemination, capturing a wider audience, bringing it closer to our scientific project, with a strong focus on ICT.

To develop such goals, CIDTFF is organized in 4 research groups (RG) equally committed to the RU SP:

Languages, theories & practices in Education & Supervision: understand how language diversity is used & how it can be promoted in education & supervision contexts, to develop actors & institutions plural literacies.

Science, teaching, learning & society: focusing on the role of sciences in education, in formal & non-formal contexts & in their promotion, developing citizens' scientific literacy.

Communication, media, & digital & virtual environments in Education: study processes to enhance teaching, learning & research, in formal & non-formal contexts, by means of communication, media & virtual environments.

Policies, Organizations, Evaluation & Leadership: study relationships between school improvement, educational policies & the role of leadership & evaluation.

From previous RU work, the complexity of educational phenomena & an increasingly trans disciplinary & integrated approach, the RU set 2 broad thematic strands (TS) in which all RG researchers are involved:

-Intercomprehension, sustainability & societal challenges, contributing to the definition of reference & action frameworks, committed to the future & to a culture of peace & sustainable development.

-Evaluation of the social impact of educational research, identifying conditions to increase educational impact within several educational actors & contexts.

In order to fulfill this SP, CIDTFF networks in the intersection between production, dissemination & knowledge transfer, highlighting the relevance of education of its target audience & of its interaction with the community. Laboratories, functional structures with human & didactic/training resources & concrete action plans were designed for this purpose, as well as a favorable environment to welcome researchers, teachers & trainers from Portugal & abroad.

6.3 Strategy and vision of the unit and future management

Different challenges, as well as processes of self-regulation elicited also by external evaluations, led to the development of the RU's initial project, implying a more ecological and comprehensive approach, taking on board the role that research must have in tackling societal challenges towards a more sustainable world.

The history and the trajectory of nearly 20 years of this RU, enhanced by (i) meta-analysis studies of produced research knowledge, (ii) internal epistemological reflection, resulting from external evaluations and internal monitoring, (iii) participation in international networks and projects, and (iv) investment in the training of professionals working in the research contexts, have allowed CIDTFF to identify problems within education that need to be addressed. The identification of these problems considers internationally-defined goals for Education and Training 2020 (Report Rethinking Education, European Parliament 2013; Progress towards the Common European Objectives in Education and Training, EEC 2013; Education at a Glance, 2012 OECD), and the country's position towards these goals (CNE 2011; FCT 2013). CIDTFF has been permanently (re)assessing its contribution to Portugal's development as well as Portuguese-Speaking speaking countries like Angola, Mozambique and Timor-Leste.

The following list stresses the areas where CIDTFF play a key role:

- i) Development of theoretical and methodological frameworks, guidelines and recommendations that sustain intervention proposals in multiple contexts (from preschool to HE, and for traditional and non-traditional audiences), committed with a sustainable future in an inclusive society.
- ii) Construction, implementation, dissemination and impact evaluation of educational programs and teaching/research resources, including those with technological formats.
- iii) Involvement in the qualification of actors to use products of which they are, frequently, co-authors.
- iv) Participation in networks and partnerships involving multiple actors with different relationships and interests.
- v) Intervention in the political dimension of research and education, evinced by the participation of CIDTFF members in research evaluation activities or in multiple projects with the Ministry of Education and agencies from other countries, notably Portuguese-Speaking countries.

Along with these lines, the research in CIDTFF is organized in 4 RG and 2 thematic strands (TS), that, though being configured around different rationales, hang together to fulfill the RU's SP (6.5). The RG emerge to better answer the challenges identified for the six-year period and to cater for the profile evolution of its members. The TS are the result of previously-conducted studies and are defined around a 'big idea' that considers the complexity of educational contexts and the need to undertake increasingly transdisciplinary, integrated and with social impact approaches. We briefly present the rationales of the 4 RG and of the 2 TS.

RG1 - Languages, theories and practices in education and supervision, aiming to produce knowledge about linguistic, communicative, curricular, and professional development.

RG2 - Science, teaching, learning and society, aiming to promote science in formal and non-formal educational contexts, in a lifelong learning perspective and in Science-Society-Natural World scenario, considering societal challenges, namely the need to increase citizens' science/math literacy.

RG3 - Communication, media, and digital and virtual environments in education, focusing on the study of processes to enhance teaching, learning and research, using communication, media and at a distance environment; aiming at the development of technological literacy of diverse audiences and of technological and non-technological products.

RG4 - Policies, organizations, evaluation and leadership, aiming to find ways of understanding and improving schools measurable through students' academic and social outcomes given their importance to human and social development, and taking on board its relations with educational policies and the role of leadership and evaluation.

The TS Intercomprehension, sustainability and societal challenges, focuses on education for sustainability and intercomprehension (ethical and ideological dimensions). The other TS, Evaluation of the social impact of educational research, mobilizes studies of impact evaluation as the key process in making innovation more widespread and socially recognized.

Thus, the RU's research aims to contribute to the development of the national scientific and technological system, particularly due to its focus on weaknesses identified in the diagnosis made by FCT (2013) on the Research and Innovation System (SNI & I), namely:

- i) Low educational level of the workforce, especially at an older age (FCT 2013: 17).

Examples of contributions: (a) Over 23 (M23) project, a co-joint venture of RG1 and RG2; (b) research and intervention projects aimed at different literacies (plural literacy - RG1, scientific literacy - RG2, technological literacy - RG3), publics, times and spaces of education (formal, non-formal and informal). However, given the prospective view, the TS Intercomprehension, sustainability and educational challenges will also define curricular proposals to raise youth's educational level. The focus of the RG4 to study and intervene at the level of school improvement is also integrated here.

- ii) Sparse evaluation of policies and programs (FCT 2013: 18)

Research to be developed by the RG4 and the TS Evaluation of the social impact of educational research is directed to this weakness. Projects focused on the evaluation of national education policies of decentralization and regionalization and on the evaluation of the social impact of national programs were defined. This is the case of the research on the evaluation of the implementation of the "pedagogical guidelines for the work with children aged 0 to 3 years old", commissioned by the DGE/MEC and ISS/MSSS.

iii) Limited use of organized collective debate and reduced involvement of stakeholders in supporting the design of policies and programs (FCT 2013: 18)

The involvement of stakeholders through collective debate in different formats (partnerships, open events, discussion platforms) is scheduled in the CIDTFF's SP. For instance, the negotiation of research topics for PhD projects to be developed by teachers in schools with their leaders (directors, department coordinators) in order to make them more relevant and appreciated is a strategy that fits this dimension.

It is worth mentioning that beyond the dynamics generated within each RG and TS, the development of the activities in close coordination with the RU's SP is favored by restricted seminars and internal media, such as the triennial electronic newsletter "ENCONTROS" with the main RU's activities, and weekly flash news which include event schedules and research dissemination.

6.4 Laboratory intensity level of the unit

Low or absent

Laboratory intensity level Justification

Taking into account FCT indications, CIDTFF's laboratorial intensity can be classified as low but not absent. Although this is not a RU with a laboratorial character in the classical sense, there are activities carried out in the RU, within specific physical spaces, where scientific knowledge is designed, validated and disseminated, and where documents and resources since the creation of the RU (in projects, partnerships and networks) are organized and accessible for consultation (for example in workshops) through laboratorial work.

Besides these characteristics, there are three particular cases (Labs) worth mentioning: LEduC and the associated Science Garden (SG); LCD and Lem@tic.

LEduC (www.ua.pt/cidtff/leduc/) and the Science Garden (www.ua.pt/jardimdaciencia/) carry out science laboratory activities, involving hundreds of students and teachers from preschool and basic education per year, which requires equipment maintenance and replacement. It is worth stressing two projects of knowledge production and dissemination that involve investment in maintenance and equipment renewal for 2015-2020: (a) non-formal science education of children, youngsters and their teachers to be held in the SG; (b) professional development of laboratory technicians for Science Education (Biology, Physics and Chemistry) from the Institute for Research and Development in Education (INIDE) of the Republic of Angola.

In the case of LCD, a laboratory where design, production and evaluation of teaching and learning digitally-based and non-technologically-based materials for the various levels of education are made, and therefore requires periodically update of its equipment to meet its goals.

In Lem@tic, laboratorial activities with students from preschool to higher education and/or with educators/teachers are held. These activities require the use of equipment, namely technological, and other non-tangible materials, whose maintenance and renewal must be ensured. It is important to emphasize that many of the products designed with and for the exploration of such materials support the laboratory itself and guarantee the dynamics between research, training, innovation and the university extension.

In the developmental plan of three RG (1, 2 and 3) activities of knowledge production and transfer are scheduled, requiring laboratory work for Science and Maths Education, and technological enterprise for the development of educational and technological resources and for practical activity in specific didactics using ICT (e.g. online training in intercomprehension).

6.5 General objectives

The CIDTFF's vision for the future, where its main aims and SP stem from, is based on 3 axes, designed within a critical reading of the RU'S contribution to the national and international scientific system, in the light of regulatory documents for the scientific activity:

-an assumed research perspective, particularly in education, understanding it as socially relevant, due its contribution to the country's development, which demands researchers to have a permanent commitment attitude and involvement with major issues and societal challenges, and to have the ability to generate their own questions and paths, namely in collaboration with privileged actors;

-an assumed Didactics perspective, understood as a science that projects an ecological glance at its study object- the processes of teaching/learning - which includes its regulatory conditions, the circumstances in which these processes occur and the communication spaces they build (physical, virtual, public and private), in a logic of lifelong learning that is not limited to formal and traditional spaces and times of education and training;

-a solid path that has been boosting the RU at national and international levels and that has provided: i) highly-qualified researchers, committed to a collective project and able to develop it in collaboration; ii) diverse networks, both national and international, at different levels of the scientific activity (from knowledge production to its dissemination and

transfer); iii) competitive and attractive advanced training programs, connected to research projects focused on specific challenges negotiated with the Centre's stakeholders. In this respect, knowledge and resources were built, some of them patented and marketed, and solutions were created for knowledge and resource transfer in specific areas of didactics, training, supervision and quality assessment.

In this framework, the generic aims for 2015-2020 are necessarily different than before (including research, development, internationalization, advanced training, communication and dissemination of knowledge to the education, training and business markets); however, they should be understood in their articulation and holistically as a coherent project.

Research aims

- To proceed with the construction of didactic knowledge on education, training and supervision processes (in formal and non-formal spaces, in present and virtual environments), in a perspective of lifelong learning, aiming to contribute with innovative responses to the development of individuals, groups and institutions committed to societal challenges, in order to shape fairer, more inclusive, sustainable and intercomprehensive societies.
- To build a more comprehensive overview of the research results, by deepening frameworks of reference for the design and practice of actions and for the development of resources in an integrated perspective, aimed, to the curricular development of Basic and Secondary Education (Science and Technology, Social Sciences and Humanities) and to the professional development of educators, teachers and trainers, including those from Higher Education (HE), but also to other non-formal and informal spaces and the public in general.
- To study processes for the improvement of both schools (measurable through students' academic and social outcomes) and other public spaces with broader educational purposes (measurable, for example, through the achievement of literacy competences), taking into account the role of leadership and evaluation.
- To produce knowledge about the impact of research on educational phenomena in society, in particular the conditions that promote this impact, and to use this knowledge in the development of the activities of the RU.
- To contribute to change and innovation, namely to examine ways of (re)constructing educational knowledge collaboratively with different partners and stakeholders.
- To monitor and evaluate programs, projects and instruments (in formal contexts - from preschool to Basic Education, secondary level and HE, and in non-formal ones, e.g. science centers), and to conduct follow-up studies, participating in the revision and reformulation processes of the current curriculum and educational challenges.

Implementation and transfer

- To promote the quality of the research impact in society.
- To consolidate partnerships with multiple actors and institutions, in particular associations, municipalities and science museums, and to enhance, through them, forms of knowledge transfer in Didactics, particularly in the training environment (pre-service, in-service, advanced) and supervision; to assess the impact of these partnerships in the development of the target audience, aiming to promote innovation economically and socially, and to create conditions for its integration into people's lives.
- To develop, implement and evaluate didactic and research-based programs, methodologies and resources, which support quality teaching, learning, training and research processes.
- To intervene in the Portuguese education system, actively participating in the processes that lead to policy-making (committees, advice boards, consultancy and other services), creating conditions for sustained research arguments, for redefining the curriculum, for the training of education agents and for the qualification and organization of their workplaces.

Internationalization

- To promote networks and partnerships (with research groups, teaching and training institutions, organizations, agencies, associations) in order to develop research and intervention projects in the areas the CIDTFF works on.
- To strengthen connections at the level of advanced education and research with Portuguese-Speaking countries, particularly investing in the creation of joint PhDs.

Advanced Training

- To invest in the education of young researchers, enabling them to take on high-quality research/training and innovation paths.

Communication and dissemination

- To consolidate a coherent, flexible, dynamic and diverse strategy for science communication and dissemination (in terms of audience, models, communication styles and channels), with a strong focus on ICT, capable of capturing an increasingly wider audience and bringing it closer to the Centre's scientific project.
- To strengthen, diversify and professionalize the laboratories' open programs, articulating them amongst themselves and with other programs for science dissemination (of the CIDTFF, the DE and the UA, museums, municipalities, science centers), integrating them in networks and ongoing partnerships and expanding their use as training resources in HE, aimed in particular at the UA students.
- To increase the rates of publication and participation in scientific events.

6.6 Implementation

To achieve the RU aims set for 2015-2020, in particular the expected achievement indicators (7), the plan for implementation of the Strategic Program (SP) will incorporate the following key measures:

- (Leadership) strong leadership structure of the RU, together with distributed leadership undertaken either by the coordinators of the 4 RGs, or by the coordinators of the 2 TSs;
- (Team commitment) individual & collective commitment to the strategy, vision (6.3) & aims (6.5) of the RU, understood in a dynamic way, in societies characterized by a rapid pace of growth & change, but configured around a unique & distinctive epistemological (& ideological) matrix;
- (Work environment) democratic environment of wellness, focusing on common & stable channels & modes of communication among members & groups themselves & with the coordinating structures;
- (Achievement of results) strict compliance aims, including specific achievement indicators, initially defined with input from all members, corresponding, therefore, to attainable results well integrated into the planned scientific activity;
- (Monitoring of conducted activities) internal monitoring of conducted activities, & external monitoring through dialogue with the RU External Advisory Committee;
- (Activities of researchers) strong support to the activities of researchers, freeing them from more routine/bureaucratic tasks & briefing them on key issues, namely through an administrative secretarial office & through research technicians & fellows;
- (Training of young researchers) strong investment in the training of young researchers, especially doctoral students & recent PhD holders, namely through the support of senior researchers on their research activities & project applications. CIDTFF will continue to invest in the online Network to Support the Supervision of Research & Development in Education (RedeSIDEdu), developed in the RU for research purposes (<http://cms.ua.pt/RedeSIDEdu>), which enhances both training of young supervisors of graduate students, & socialization among its members by providing content, resources & interactive tools;
- (Science communication & dissemination) support in communication, seen as coherent, flexible & dynamic, which aims to attract attention to the SP of the RU, its outputs, outcomes & activities. This measure sustained on communication aims to enhance knowledge transfer to society & therefore its potential impact, thus contributing to the creation of conditions of social acceptance of innovation. Diverse audiences (peers, partners, educational community, policy makers, stakeholders & the general public) are addressed by this communication & dissemination strategy; it resorts to several additional languages, with strong mobilization of ICT; & acts on different fronts, corresponding to different communication models, objectives & audiences: more traditional scientific channels (international publications, keynote addresses, conferences, mobility of researchers, particularly in the context of PhD & training programs for young researchers), aiming to increase the impact of produced research (e.g., through the online CIDTFF journal *Indagatio Didactica* - <http://revistas.ua.pt/index.php/ID/>, & the ratio member/article in peer-reviewed journals/year); dissemination directed to the target audience (editions for teachers & trainers, such as *Cadernos do LALE*, patented didactic kits & software, manuals & teaching guides, virtual resources center); & participation in broad spectrum dissemination channels (platforms, media, youtube & social networks). This measure also includes the organization of events of strictly scientific nature & others (e.g., promotion & dissemination of research results by leveraging the established networks). In order to ensure the inception of these measures, we present below (a) the model of organization & governance of the RU & (b) the instruments to be designed.

Model of organization & governance (MOG) of the RU

The MOG for 2015-2020 follows from the previous one with changes arising from the introduction of the TS, insofar as this has shown to enhance the development of scientific activity, particularly in terms of: follow-up & monitoring of the SP; involvement of the RGs & their members; support to & encouragement for the production of indicators; planning of flexible & adjustable management strategies to the demands of societies & policies characterized by an accelerated pace of transition & change.

The RU consists of integrated members, collaborators & honorary members who are organized in a structure that aims to meet its responsibilities in a democratic organizational context without compromising the research rigor, accountability & commitment to society. The governance structure of the Centre is organized as follows: i) Plenary, consisting of all members of the RU. Ensures, in particular, the democratic choice of the coordinator & the admission of its members, analyzing proposals for planning & action, as well as the monitoring (internal & external) results; ii) Coordinator, elected in the Plenary among PhD holders. Ensures the daily supervision, represents the RU indoors & abroad, & streamlines the creation & action of the Coordinating Committee; iii) Coordinating Committee, constituted by the Coordinator & 3 integrated PhD members of its choice. Advises the Coordinator in all research & accountability activities, & is responsible for the executive role in the Centre coordination; iv) Scientific Committee, consisting of all integrated PhD members. Approves the broad scientific guidelines of the Centre; v) Permanent Scientific Commission, constituted by the Coordinator, the Vice-Coordinator, the RGs & TSs Coordinators, & two elected members, of which one is external to the UA. Works with delegated powers from the Scientific Committee to draft proposals that are to be presented to the Committee or to the Plenary.

Also in organizational terms, CIDTFF has a secretarial team composed of administrative staff (supporting the implementation of financial management measures, together with the RU's coordination, UA project management offices, & research funding agencies, in particular FCT), & research technicians. This group of highly qualified fellows, with different profiles, supports researchers in their daily activities, creating favorable conditions to ensure that the achievement indicators are fully reached. In this context, they are assigned specific roles, differentiated according to individual skill profiles defined on recruitment, in particular:

- (Scientific management): support to management & governance bodies, in particular the Coordinating Committee & those responsible for the RGs & TSs; support to researchers responsible for projects, when these lack research technicians; support to the submission of reports, applications & projects; support to funding attraction; management of

databases;

-(Communication & image management): internal & external dissemination of the RU image & activities; communication management (internal & external), including the weekly Flashnews & the quarterly newsletter Encontros; management of platforms & websites (Centre, RGs, TSs, projects, events);

-(Dissemination & knowledge transfer): support to the 7 laboratories, functional structures of the RU located at the UA, & their articulation programs with the community; support to the production & dissemination of the labs publications, resources & other didactic materials; support to Summer Schools, training programs & other events;

-(Knowledge production & dissemination): publication support (text editing & proofreading; selection of journals & other publications; dissemination of calls; editorial support, including the journal *Indagatio Didactica*).

Instruments

In this framework, & in more concrete terms, the specific instruments for implementing the SPs arise from the differentiated nature of their aims, as outlined below:

-CIDTFF website (<http://www.ua.pt/cidtff/>), whose update should continue to be permanent, in order to enhance internal & external visibility;

-Minutes of meetings of the different governance bodies of CIDTFF to be made available on the website;

-Diverse databases (e.g., information regarding the CIDTFF members, their production & resources);

-Instruments for assessing the social impact of research conducted within the CIDTFF (for further development see the description of the TS Evaluation of the social impact of educational research in section 10);

-Instruments of internal monitoring of the activities [employment of (a) self-regulation grids of the activities carried out by each member of the CIDTFF, particularly relative to the indicators provided, to be completed annually, & whose results will be analyzed in the RGs, TSs, &/or in the Plenary; & (b) monitoring grids of the missions of the CIDTFF members, when financed by the RU, to ensure compliance with the aims set];

-Summary report template to be completed by each member when requesting funding for a mission, describing specific aims, products to be reached, & relevance of the mission in terms of the development plan of the CIDTFF. It is worth mentioning that these reports must contain feedback from the coordinators of the RGs or TSs each member belongs to;

-Evaluation sheets for all events held (Conferences, Seminars, Workshops, Summer Schools).

6.7 Contributions for the regional strategy

In a knowledge-based society, with increasingly unstable, unsteady and global spaces, the role of educational research in the qualification of individuals and groups is highly recognized. In this context, and taking into account the document Plano de Ação Regional 2014-2020 (CRER 2020 - Competitividade Responsável, Estruturante e Resiliente) [Regional Action Plan 2014-2020 (CRER 2020 - Responsible, Structuring and Resilient Competitiveness)], referring to the Central region of Portugal, we are sure that the CIDTFF has an important role to play in the field of the regional strategy for development. Considering the SP of the RU, this contribution is materialized as follows: i) to achieve a strong link between research work in its various stages and dimensions, and the various region institutions (educational, health, cultural, economic, business institutions, municipalities, associations, museums, libraries, ...), creating networks and partnerships, in a logic of institutional cooperation to provide sustainable research and ensure knowledge transfer; ii) to further invest in education aiming at the training/qualification of human resources; iii) to contribute to employability, making the Central region more attractive, i.e., able to ensure the necessary conditions for attraction of young professionals, by investing in their lifelong education for innovation; iv) to strengthen and promote investment in projects aimed at the development of plural literacies, namely the increased use of languages, sciences and ICT, active citizenship attitudes and behaviors, guided by ideals of sustainability and intercomprehension; v) to invest in research, development and innovation projects that deepen the ability to adapt to new and unexpected situations that may arise at regional levels; vi) to develop strategies and tools for analyzing the social impact of educational research in the region .

Therefore, the CIDTFF sets forth a project capable of generating, capturing and retaining qualified and innovative talent, based on creativity, quality, innovation and entrepreneurship. In this context, it is necessary to develop a joint work to contribute to sustainable and inclusive development in the Central region. In a collaborative logic, the Centre also aims at sharing results with and transfer knowledge to the community and the society, bearing in mind the internationalization processes underway.

In short, the CIDTFF aims at making the idea of 'collective enterprise' a reality, by developing networks and focusing on innovation, internationalization, collaboration and qualification of individuals and institutions, making them capable of responding to the demands of an increasingly challenging and competitive society, namely in the Central region.

6.8 Opportunities for advanced training

The RU has a large experience in what advanced training is concerned, namely at PhD level. It has been associated, since 2004, to one of the 1st doctoral program in Portugal with a curricular component, considered an innovation anticipating the curriculum restructuring in HE after the Bologna Process. In 2008, & already under Bologna, this program was redesigned & a PhD in Didactics & Training was created (38 completed PhDs, 4 of them foreign). With the strong contribution of these 2 courses supported by CIDTFF, the no. of UA graduates in Didactics are nowadays: 139 PhDs (13 of Portuguese-Speaking countries - Brazil, Angola, Mozambique).

Due to the UA reformulation of the education area in 2012, the PhD in Didactics & Training was replaced by a broader

program in Education with branches according to the specificities of the main areas of the CIDTFF research. This PhD program, approved by the National Portuguese Agency for Evaluation and Assessment of HE degrees (A3ES), has now 83 PhD students registered.

Another program supported by the CIDTFF is the PhD in Multimedia in Education (created in 2008), collaboration between the DE and the Dept of Arts and Communication. Since its creation, 26 PhD students graduated in this program (21 in Portugal & 5 in Mozambique, following a protocol with the University Eduardo Mondlane). Currently, there are 124 students enrolled in this PhD program.

A significant no. of students (112) of both programs own a FCT scholarship, which can be seen as an indicator of the research quality of the projects and their supervisors.

The RU also received 14 post-PhD researchers, owning a FCT scholarship.

At international level, since 2011, the UA (through the CIDTFF) is a member of the consortium which holds the Doctoral Program in Educational Sciences of Lithuania, the only one approved by the Ministry of Education of that country.

The plans for the future are:

- To consolidate the PhD programs in Education and in Multimedia in Education, by taking on board the suggestions from the A3ES's evaluation;
- To attract more foreign students, namely from Angola, as a result of a protocol signed with the eldest teacher education institution of the country (ISCED Huila) for Master's level education (the UA is responsible for the supervision of 120 Master's students, some of them will be pursuing a PhD degree);
- To pursue an ongoing negotiation regarding a joint PhD program in Teacher Education with the Univ Eduardo Mondlane -Mozambique;
- To coordinate a joint program in Didactics and Teacher Education with two other Universities in Portugal (Lisbon and Minho, and their respective RU), and to obtain approval and financing from the FCT;
- To follow a negotiation strategy with schools regarding the choice of topics of PhD projects, making them more relevant to school improvement, namely in what teacher qualification is concerned;
- To negotiate with partners of our networks an international PhD on Intercomprehension & sustainability.

6.9 Internationalization

As shown in the evolution of the indicators (5.1), the CIDTFF has increasingly and successfully focused on its international visibility. The plan to consolidate and expand this internationalization index is based on the following axes of action:

1.Consolidation and development of partnerships and international research networks (e.g. to expand Miriadi in Latin America and Africa), which encourage:

- synergies in research within the RU's framework, and the development of pluralistic co-constructed thinking; these partnerships are particularly related to the investment in a research and training space in the Lusophone geostrategic framework (e.g. joint advanced training programs);
- recruitment of new researchers and doctoral students (through transnational research programs and increasingly attractive PhD programs);

2.Dissemination/publication of research results:

- increasing participation in publications and peer-reviewed conferences (enhancing international co-authored papers and book chapters); in this context, the publication of the multilingual open access journal *Indagatio Didactica*, indexed to CAPES/QUALIS and integrated in RCAAP - Repositório Científico de Acesso Aberto de Portugal [Scientific Open Access Repository of Portugal] promotes the internationalization of the RU;
- reinforcing mechanisms for dissemination of research results, such as internships and doctoral programs (with potential to attract new researchers and members), short online courses, international academic conferences and Summer Schools (for post-graduate students, doctoral candidates and young PhD);
- creating and developing science communication tools, namely in English, related to the RU's concerns, to bring the general public closer to scientific knowledge, making it socially useful and potentially transformative (e.g. creation and development of free access plurilingual communication channels, such as the Facebook page of the RU and the island on *Second Life*, ...);

3.Organization of scientific events related to internationally-renowned associations (e.g. IALIC - International Association for Language and Intercultural Communication; Associação Ibero-Americana Ciência-Tecnologia-Sociedade na Educação em Ciência), which puts the RU on the international map of excellence in research and on the researchers' guidebook;

4.Extension of professional development programmes in international contexts (e.g. in Science Teacher Education with INIDE - Angola);

5.Participation in science evaluation structures, such as:

- scientific committees of international associations (e.g. AUIP - Asociación Universitaria Iberoamericana de Postgrado; Associação Ibero-Americana Ciência-Tecnologia-Sociedade na Educação em Ciência);
- editors or reviewers in publications and international conferences, (e.g. *International Journal of Bilingual Education and Bilingualism*);
- juries at international competitions and PhD programs (e.g. Doctoral Program in Educational Sciences of Lithuania).

6.10 Knowledge transfer

Knowledge transfer (KT) is a core dimension in the activity of CIDTFF, related to the RU's profile - applied research

oriented. We intended to deepen this dimension in 2015-2020, namely within educational stakeholders (teachers, students, directors of institutions, policy makers and public in general) and technology-based companies. This requires defining the research topics and issues in collaboration with those stakeholders, involving them in all the stages of the research processes, from design to implementation, strengthening partnerships and creating sustainability conditions. Considering the Millennium Development Goals, research should be based on collaboration and partnerships, with a view to innovation. Our priority areas are educational diversity, (plural) literacy, curriculum and professional development, formal/non-formal education, distance education and learning, multimedia resources, evaluation and assessment, quality and educational policies. To develop actions to promote science culture is a strategic key in what KT is concerned.

In this framework, KT is expected to be promoted through diverse mechanisms:

- development of digital resources through partnerships with technology-based companies, such as WebQDA; (advanced) training of professionals (teachers and researchers) to implement the new resources (in several countries);
- accredited training managed by the Integrated Unit for Continuing Education of the UA;
- guidelines on the exploration of teaching resources (e.g. the collection Exploring the Science Garden);
- diversified initiatives addressed to children, youngsters and adults to disseminate scientific and technological culture, such as guided exploration of interactive modules of Science and Technology, science and language teaching resources, math and creativity challenges, some of them included in UA initiatives (such as Junior Summer Academy, Open Week for Science and Technology, Fábrica Ciência Viva of Aveiro);
- dissemination of research project results with an international scope (e.g. Evaluating the impact of secondary education restructuring in East Timor - a study in the context of international cooperation, University Educators for Sustainable Development, MIRIADI - Mutualisation et Innovation pour un Réseau de l'Intercompréhension A distance), and with a national scope (e.g. A study of academic development in universities through innovative approaches in teaching, assessment and feedback, and Evaluation in Preschool Education - Process-Oriented Child Monitoring System); these initiatives aim also to support decisions taken by policy makers and school directors;
- dissemination of platforms like Network to Support the Supervision of Research and Development in Education and Galapro - education of trainers for intercomprehension.

In order to monitor and evaluate these mechanisms for KT, instruments will be developed within the TS Evaluation of the social impact of educational research.

6.11 Ethical issues

Ethics is fundamental to guarantee that research is honest and clear. Thus, we point out a set of principles that should be considered when developing our research activity. These principles represent a commitment of the CIDTFF's members since it implies responsibilities towards the institutions they work in, the funding entities, the target contexts and actors, and the community/society.

The research methodology should be designed with detail and context-sensitivity because it focuses on the analysis of conceptions, languages and behavior of individuals, groups and organizations and their interrelationships, which may imply an "interference" of the researcher in individuals and contexts.

The issue of preserving the identity and image of the research subjects is particularly sensitive, especially in the context of results dissemination (publications, communications, seminars and other increasingly common formats, such as videos and their availability in extended environments). In this context, the development of research should take into account the following main ethical issues:

- i) protocols with the institutions involved in the studies, which include the purposes and processes of the research, its contributions to the quality of the target contexts and the procedures to preserve confidentiality of the collected data;
- ii) official consent to collect data by means of interviews, photographs, reproductions of private texts, recordings (audio and/or video);
- iii) written guarantee of anonymity of the individuals and organizations observed, at all stages of the research activity, regardless of the context in which it occurs (national or international, with the scientific community or in a training situation, for a narrower or wider audience);
- iv) consent of parents and/or guardians for underage participants;
- v) validation, according to strict methodological procedures, of the instruments used for data collection and analysis;
- vi) clarification of the research aims, context and procedures, making sure that subjects' participation is voluntary and that they are properly acquainted with the whole process and its implications;
- vii) responsibility for the content and originality of the work produced;
- viii) respect for copyright laws: rigor when referring to the sources used.

These principles lead to a research that goes beyond mere individual interest, contributing to the life quality of individuals, groups and observed contexts, assuming, therefore, the substance of the epistemological matrix of the CIDTFF.

Taking into account the value that these principles assume, they are also disseminated and discussed on multiple occasions within the CIDTFF, its partnerships and networks, and form the basis of the advanced education content and training of young researchers.

7. EXPECTED INDICATORS OF THE STRATEGIC PROGRAMME 2015/2020

7.1

Description	2015	2016	2017	2018	2019	2020	TOTAL ()
Publications in peer-review international journals	92	95	98	101	104	107	597
Patents and performing patents	2	2	3	2	2	3	14
Books and chapters of international distribution	29	30	32	33	35	37	196
PhD theses under the supervision of integrated members	35	36	37	38	39	41	226
Conference proceedings	126	130	134	138	142	146	816
New materials, devices, products and processes, software, computer codes and algorithms	9	10	11	12	13	14	69
Books, including single-authored works (including scholarly editions of oral or written texts and translations with introduction and commentary)	22	23	23	24	25	26	143
Edited special issues of journals, with substantial research input on the part of the researcher	6	7	7	8	9	10	47
Chapters in books, including contributions to conference proceedings, essays in collections	33	34	35	36	37	38	213
Creative writing (to the extent that it embodies research)	1	2	1	1	0	0	5
Dictionary entries (forming part of investigation)	0	1	1	0	2	1	5
Encyclopedia entries (to the extent that they embody research)	1	0	0	1	1	0	3
Audio/visual and electronic/digital materials	6	7	7	8	8	8	44
Other categories, including web-based resources; video and audio recordings (to the extent that they embody research)	4	7	6	6	7	7	37
Performances and exhibitions to the extent that they embody research	1	1	0	2	0	0	4
Industrial research contracts	2	1	1	1	2	1	8
Research contracts with national or international bodies	7	4	6	4	5	5	31
Publications in peer-review national journals	28	29	30	31	32	32	182
Organisation of scientific dissemination activities	30	31	32	33	34	35	195
Didactic resources	8	10	10	10	10	11	59

8. PROPOSED RESEARCH TEAM

8.1 Criteria adopted by the R&D unit for the definition of integrated member, if different from FCT reference table

The criteria adopted by CIDTFF for the definition of integrated member are far more demanding than the ones put forward by those indicated in the FCT's reference table, therefore seeking to assure the high standards of achievement that have always characterized the RU.

Thus, a CIDTFF integrated member must possess the following minimum requirements:

A) A PhD prior to 2009: 6 indicators of scientific production, according to those indicated in the FCT's reference table, two of which of Type I (published papers in international peer-reviewed journals).

B) A PhD after 2009: 3 indicators of scientific production, according to those indicated in the FCT's reference table, one of which of Type I (published papers in international peer-reviewed journals).

Taking into account the CIDTFF scientific profile (namely its strong involvement in knowledge dissemination and knowledge transfer activities, in line with its orientation towards applied research, within the scope of a social and political understanding of research in education), a further exception profile was defined. This profile, that is again more demanding than the one proposed by FCT, values other facets of scientific activity besides publishing in reference international journals. It can be applied up to 10% of the RU integrated members and is defined as follows:

A) A PhD prior to 2009 (cumulative criteria): 6 indicators of scientific production, according to those indicated in the FCT's reference table + Supervision of 1 PhD/Post-doc or 3 concluded masters' dissertations + participation in 2 financed projects or international networks + Strong involvement in promotional, dissemination and knowledge transfer activities, and promotion of the public understanding of science.

B) A PhD after 2009 (cumulative criteria): 3 indicators of scientific production, according to those indicated in the FCT's reference table + participation in 1 financed projects or international networks + Strong involvement in promotional,

dissemination and knowledge transfer activities, and promotion of the public understanding of science. The profile of the CIDTFF integrated member is monitored based on a specific instrument, by each member (self-regulation exercise) and also by the RU's Permanent Scientific Commission.

8.2 List of Integrated Members / 10 nuclear CVs

Name	Nuclear CV
Nilza Maria Vilhena Nunes da Costa (Coordinator)	Yes
Ana Alexandra Valente Rodrigues	No
Ana Cristina de Castro Loureiro	No
Ana Isabel Oliveira Andrade	Yes
Ana Jorge Balula Pereira Dias	No
Ana Margarida Corujo Ferreira Lima Ramos	No
Ana Margarida de Oliveira Capelo	No
Ana Paula Florêncio Aires	No
Ana Paula da Silva Cabral	No
Ana Raquel Gomes São Marcos Simões	No
Ana Sofia Reis de Castro e Pinho	No
Ana Vitória Madeira Teixeira Baptista	No
Anabela Maria Sousa Pereira	No
Anibal Rui Carvalho Antunes Neves	No
António Augusto Neto Mendes	No
António Augusto de Freitas Gonçalves Moreira	Yes
António F. C. Cachapuz	No
António Maria Martins	No
António Pedro Dias da Costa	No
CARLOS Alberto Pereira de MEIRELES COELHO	No
Carolina Elizabeth Dominguez	No
Catarina Schreck Carmo dos Reis	No
Cecília Vieira Guerra	No
Cristina Manuela Branco Fernandes de Sá	No
Cristina Maria Carvalho Gaspar de Oliveira	No
Dayse Cristine Dantas Brito Neri de Souza	No
Dora Maria Ramos Fonseca de Castro	No
Filomena Rosinda de Oliveira Martins	No
Francislê Neri de Souza	No
Fátima Regina Duarte Gouveia Fernandes Jorge	No
Idália da Silva Carvalho Sá-Chaves	No
Isabel Maria Cabrita dos Reis Pires Pereira	No
Isabel Maria Catarino Huet e Silva	No
Isabel Maria Coelho de Oliveira Malaquias	Yes
Jaime Emanuel Moreira Ribeiro	No
Joaquim Bernardino de Oliveira Lopes	Yes
Jorge Adelino Rodrigues Costa	Yes
Jorge Manuel Rodrigues Bonito	No

José Alexandre da Rocha Ventura Silva	Yes
José Paulo Cerdeira Cleto Cravino	No
Luciana Manuela de Almeida Graça	No
Lucilia Maria Pessoa Tavares dos Santos	No
Luis Antonio Parda	No
Luis Manuel Ferreira Marques	No
Lúcia Maria Teixeira Pombo	No
MARIA MANUEL DA SILVA NASCIMENTO	No
MARIA TERESA BIXIRÃO NETO	No
Manuel Fernando Ferreira Rodrigues	No
Margarida Maria Solteiro Martins Pinheiro	No
Margarida Rocha Lucas	No
Maria Cecília Rosas Pereira Peixoto da Costa	No
Maria Celina Cardoso Tenreiro Vieira	No
Maria Clara Lopes Dias Ferrao Bandeira Tavares	No
Maria Filomena Rodrigues Teixeira	No
Maria Gabriela Correia de Castro Portugal	No
Maria Helena Almeida Beirao de Araujo e Sa	Yes
Maria Helena Carvalho Gomes Caldeira Martins	No
Maria Helena Gouveia Fernandes Teixeira Pedrosa de Jesus	No
Maria Helena Serra Ferreira Anca	No
Maria Isabel Lobo de Alarcao e Silva Tavares	No
Maria Isabel Tavares Pinheiro Martins	Yes
Maria Joao Loureiro	No
Maria José de Miranda Nazaré Loureiro	No
Maria Leonor Simões dos Santos	No
Maria Luísa Álvares Pereira	No
Maria Manuela Bento Gonçalves	No
Maria da Costa Potes Franco Barroso Santa-Clara Barbas	No
Maria de Fátima Carmona Simões da Paixão	No
Marlene da Rocha Miguéis	No
Marília dos Santos Rua	No
Mário Almeida Rodrigues Talaia	No
Mário Rui Domingues Ferreira da Cruz	No
Patricia Alexandra Pacheco de Sa	No
Patrícia Glória Soares de Albergaria de Almeida	Yes
Patrícia Susana Pinho Castanheira	No
Paula Angela Coelho Henriques dos Santos	No
Paulo José Coelho de Oliveira	No
Rosa Maria Marques Faneca De Oliveira	No
Rosa lucia de Almeida Leite Castro Madeira	No
Rui Marques Vieira	No
Susana Maria Almeida Pinto	No

Susana Marques Sá	No
Sílvia Maria Martins Melo	No
Teresa Maria Bettencourt da Cruz	No
Vitor Hugo da Rosa Bonifácio	No

9. PROPOSED RESEARCH GROUPS

Reference	Name	Principal Investigator
RG-194-2730	Languages, theories and practices in education and supervision	Ana Isabel Oliveira Andrade
RG-194-2731	Science, teaching, learning and society	Isabel Maria Coelho de Oliveira Malaquias
RG-194-2772	Communication, media, and digital and virtual environments in education	António Augusto de Freitas Gonçalves Moreira
RG-194-2778	Policies, organizations, evaluation & leadership	José Alexandre da Rocha Ventura Silva

(RG-194-2730) Languages, theories and practices in education and supervision

9.1. IDENTIFICATION OF THE RESEARCH GROUP

9.1.1 Reference of the research group

RG-194-2730

9.1.2 Name of the Research Group in portuguese

Linguagens, teorias e práticas de educação e supervisão

9.1.3 Name of the Research Group in English

Languages, theories and practices in education and supervision

9.1.4 Keyword(s)

Educational diversity

Plural Literacy

Professional development

Curricular development

9.1.5 Existed in 2008/2012

Yes

9.1.6 Participating Institution(s) to which the Research Group belongs

Universidade de Aveiro (UA)

9.2. RESEARCHERS IN THE GROUP

9.2.1 List of Integrated Members / 3 nuclear CVs

Name

Principal Investigator Nuclear CV

Ana Isabel Oliveira Andrade	Yes	Yes
Ana Margarida Corujo Ferreira Lima Ramos	No	No
Ana Raquel Gomes São Marcos Simões	No	No
Ana Sofia Reis de Castro e Pinho	No	No
António Maria Martins	No	No
Cristina Manuela Branco Fernandes de Sá	No	No
Filomena Rosinda de Oliveira Martins	No	No
Idália da Silva Carvalho Sá-Chaves	No	No
Maria Isabel Lobo de Alarcao e Silva Tavares	No	No
Luciana Manuela de Almeida Graça	No	No
Luis Antonio Pardal	No	No
Luis Manuel Ferreira Marques	No	No
Maria Clara Lopes Dias Ferrao Bandeira Tavares	No	No
Maria Helena Serra Ferreira Anca	No	No
Maria Helena Almeida Beirao de Araujo e Sa	No	Yes
Maria Leonor Simões dos Santos	No	No
Maria Luísa Álvares Pereira	No	Yes
Marlene da Rocha Miguéis	No	No
Paula Angela Coelho Henriques dos Santos	No	No
Rosa Maria Marques Faneca De Oliveira	No	No
Anibal Rui Carvalho Antunes Neves	No	No
Sílvia Maria Martins Melo	No	No
Susana Maria Almeida Pinto	No	No
Susana Marques Sá	No	No
Marília dos Santos Rua	No	No
Rosa lucia de Almeida Leite Castro Madeira	No	No

9.2.2 List of current PhD students

NAME

Mariana Ribeiro Clemente
Ana Rita Gomes Costa
Regina Aparecida Berardi Osório
João Manuel de Oliveira Rocha
Tatiana Guzeva
Carmen Maria Domingues Reste
Marta Filipa Jorge dos Santos
Cristina Rita Ferreira Arala Chaves
Mónica Sofia de Almeida Bastos
Vera Rute Silva de Jesus Marques
Susana Isabel Janeiro Ambrósio
Lúcia Maria Moreira Caniço Vidal Pereira Soares
Daniel Gomes da Silva Basílio
Susana Paula Pereira Tavares

Daniela Maria Jorge Coelho
Alice Gomes Fernandes de Matos
Vera Lúcia Encarnado Lazana
Abdelilah Suisse
Luciana Mesquita da Silva
Ana Margarida Rocha Cardoso Nunes da Costa
Rosana de Sousa Patané
Maria João Bártolo Macário
Dulce Helena Morgado Raimundo Melão
MADALENA MARIA MARQUES DAS NEVES RELVÃO
José Manuel da Costa Ferreira
Elsa Paula da Cunha Miranda Mendes Direito
Maria Manuel de Oliveira Santos
Célia da Graça Lopes
Mariana Abrantes de Oliveira Pinto Alte da Veiga
Inês Soares de Moura
Maria Cristina de Andrade Mendanha Gonçalves
Sara Isabel de Jesus Ferreira
Sofia Isabel dos Santos Soares Andrade
Ana Patrícia Silva Garcez
Roselane da Conceição Lomeo
Maria Adelina Gomes Pereira
Paula Raquel Figueiredo Costa
Patrícia Alexandra Pinto Pinheiro
Sara Augusta Fernandes da Silva Moreira
Gabriela Sotto Mayor Moura Santos
Ana Isabel Caria Duarte Evaristo
Raquel Sofia Barbosa Vieira Barreto Ribeiro
Dorinda Henriques Valente Rebelo
Gorete Cristina Marques Ribeiro
Joaquim António da Piedade Pinto
Lucia Yeni Wulandari Suharman
Lucie Oliveira Bagulho
Maria José de Oliveira Rodrigues Carvalho
Margarida Paula Matos Carrington da Costa Delícias de Lemos
Mónica Isabel da Costa Falcão
Violeta Catarina Marques Clemente
Egídio Raúl chilaule
Helena Maria Figueiredo Ferreira de Figueiredo

9.2.3 List of other researchers of the Research Group

NAME

Ana Carlota Teixeira de Vasconcelos Lloyd Braga Fernandes Tomaz

9.3. RESEARCH GROUP DESCRIPTION AND ACHIEVEMENTS FOR 2008/2012

9.3.1 Description of the Research Group

Name of Research Group 1 [RG1] (2008-2012): Education, supervision and development.

The Research Group 1 (RG1) is centred on the understanding of theories and practices of language education and pedagogical supervision, in order to produce knowledge about education and teacher education. Framed within several approaches, namely an ecological one, this RG explored different educational contexts (teaching and learning; supervision; teacher education for different levels of school; non-formal and informal), bearing in mind the diversity and the dynamics of contemporary societies, trying to develop knowledge for the promotion of a more inclusive education. The group was engaged in the process of knowledge construction on discourses and practices of education and supervision, namely within collaborative partnerships, European networks, and regional communities (e.g. schools). The need to adopt a more holistic vision of the supervision process (e.g. in language teaching and teacher education) was identified as a necessary step to intervene in the development of different linguistic, communicative, educational and professional paths. The researchers worked: i) on the analysis of practices and training materials for an "intercomprehensive dialogue"; ii) on the analysis of teaching practices, in virtual and real communities; iii) on the identification and definition of strategies for intervention in diverse educational contexts, in order to promote linguistic, cultural and social justice, and well-being.

The studies developed by this group focused on: i) understanding the specificity of diversified teaching/learning situations (related to languages, cultures, skills, such as reading and writing, gender, age,...); ii) perceiving the impact of plurilingual and intercultural interaction for sustainable development of individuals and organizations; iii) identifying how to develop students' reading abilities, teaching practices for reading, and teachers' professional knowledge on cross-curricular promotion of the school language; iv) understanding students' (out-of-)school writing practices and teaching practices of writing, in order to develop teachers' professional knowledge; v) identifying and analyzing ways to promote active lifestyles for younger and older people, in order to stimulate individual and social well-being; vi) studying online and/or presential communities, involving students and supervisors, increasing research, education and supervision competences; vii) understanding social representations about public schools and teachers' work and their role in society.

The research developed by the group was intended to understand how to transfer and (re)construct knowledge in different intervention and research educational contexts, by: i) analyzing the changes within educational communities, practices and policies of decentralization, and the participation of different actors and organizations in educational management and development; b) studying with different actors and in collaborative practices how to promote openness to Otherness and the integration of citizens from other cultures and languages; c) creating and evaluating educational materials (textbooks and teacher guides) and teachers' education programs.

The research team also focused on the interaction with educational stakeholders, namely through the analysis and discussion of strategic documents for the innovation of educational situations, and started to define strategies for knowledge dissemination.

9.3.2 Main achievements

Between 2008-2012, the main achievements of this group concerned the following aspects:

i) working within broader partnerships, seen as epistemological spaces; ii) transferring research results to educational contexts; iii) producing and disseminating materials and guidelines on educational, training and research policies. In articulation with the scientific project of the CIDTFF, the work developed within this group intended to achieve a more direct impact of research on international and national communities/institutions.

In this context, the members of this group were involved in

- Platforms and online communities (e.g. networks to support the supervision of research in education, <http://cms.ua.pt/RedeSIDEdu/>, involving postgraduate students; Redinter - European Network of Intercomprehension, www.redinter.eu, presenting a synthesis of research, training and dissemination within Intercomprehension, involving 28 European universities and 27 associated institutions worldwide; Platform Galapro - Education of Trainers for Intercomprehension in Romance Languages, www.galapro.eu/session, involving more than 400 participants of 11 countries, 3 continents and 7 romance languages);
- Partnerships and presential communities (international and national), developing different projects and involving diverse educational institutions, such as schools, libraries, municipalities, immigrant associations, and cultural groups (e.g. project <http://linguaseeducacao.web.ua.pt/>, involving 50 teachers and 20 teacher educators in action-research-projects implemented in schools; network with 12 educational partners from the City Hall to cultural groups, schools, and immigrant associations);
- Development of materials, multimodal supports, guidelines and training devices for teachers and pupils, using moodle or other platforms (e.g. based on students' perceptions of Deep Time concept);
- Dissemination of research findings and recommendations (to scientific communities, political stakeholders, educators, trainers, institutions), regarding education and supervision;
- Construction of a holistic framework on professional development in different fields (Education and Health), in a perspective of critical thinking and social use of knowledge.

The research developed allowed us: to organize 4 international seminars, 2 outside the European context; to present the results of research in seminars; to produce scientific publications; to create websites with dissemination materials, such as videos. More precisely this work allowed us to: i) to determine the impact of a collaborative, plurilingual/intercultural on-line training session, focused on intercomprehension, on the development of trainers' and teacher educators' professional and scientific knowledge; ii) to highlight models and styles of on-line distance/presential learning supervision. The research results led to the construction of reference frameworks to sustain research (e.g. on collaborative work, plurilingual science, curricular approaches, linguistic and intercultural awareness, writing teaching practices, cross-curricular mother tongue approaches, teachers' social representations), and to the implementation of intervention plans in educational contexts (from elementary to HE levels). It is important to highlight the construction and discussion of a strategic document identifying new perspectives for the development of research and training in the field of Language Didactics in Portugal. The research on teaching Portuguese as a mother tongue provided insights on the influence of knowledge about text typologies, instruments, practices and teacher training on the development of cross-curricular competences in communication. The research on teaching Portuguese as a non-native language provided data related to the representations of citizens/Portuguese descendants on the teaching of the Portuguese Language and Culture and their school integration.

9.4. RESEARCH GROUP OUTPUT 2008/2012

9.4.1 Publications in peer reviewed journals and/or other publications

1. Alarcão, I., Andrade, A.I., Araújo e Sá, M.H., Melo-Pfeifer, S., & Santos, L. (2009). Intercompreensão et plurilinguisme: (re)configureurs épistémologiques d'une didactique des langues?. *Études de Linguistique Appliquée*, 153, 11-24. (ISSN: 978-2-2520-3697-6).
2. Araújo e Sá, M. H., de Carlo, M., & Melo-Pfeifer, S. (2010). O que diriam sobre os portugueses? [What would you say about Portuguese people?]: intercultural curiosity in multilingual chat-rooms. *Language and Intercultural Communication*, 10(4), 277-298. (ISSN: 1470-8477). (WOS: 000284476900002).
3. Bono, M., & Melo-Pfeifer, S. (2011). Language negotiation in multilingual learning environments. *International Journal of Bilingualism*, 15(3), 291-309. (ISSN: 1367-0069). (WOS: 000300150700003). <http://ijb.sagepub.com/content/15/3/291.abstract>
4. Correia, J. A., Pereira, L. A., & Vaz, H. (2012). Políticas educativas e modos de subjectivação da profissão docente. *Cadernos de Pesquisa, Fundação Carlos Chagas - Brasil*, 42(146), 388-407. <http://dx.doi.org/10.1590/S0100-15742012000200005>
5. Ferreira, R., & Sá-Chaves, I. (2008). Formação reflexiva: representações dos professores acerca do uso de portfolio reflexivo na formação de médicos e enfermeiros. *Revista Interface - Comunicação, Saúde e Educação*. www.interface.org.br.
6. Neves, R., & Almeida, P. (2012). Institutionalized elderly: falls and fears. *Journal of Aging and Physical Activity*, 20, S168-S168. (WOS: 000307433500288).
7. Oliveira, A. L., & Ançã, M. H. (2009). I speak five languages: fostering plurilingual competence through language awareness. *Language Awareness (special issue)*, 18(3), 403-421. (ISSN: Print - 0965-8416; Online - 1747-7565).
8. Pereira, L. A., Cardoso, I., & Graça, L. (2009). For a definition of the teaching/learning of writing in L1: Research and action. *L1 - Educational Studies in Language and Literature*, 9(4), 87-123. (ISSN: Print - 1567-6617; Online - 1573-1731).
9. Sá, C. M. (2012). Comics and teaching/learning the mother tongue. *Indagatio Didactica*, 4(4). (ISSN: 1647-3582). <http://revistas.ua.pt/index.php/ID/article/view/1774/1645>
10. Simões, A. R., & Pombo, L. (2010). Linhas orientadoras para avaliação de Encontros Científicos - o exemplo de um exercício avaliativo. *Revista Lusófona de Educação*, 15, 99-111. (WOS: 000284136000007).

9.4.2 Completed PhD theses

1. Cruz, M. (2011). Consciência cultural crítica numa comunidade virtual educativa de línguas. Tese de Doutoramento em Didática e Formação, Universidade de Aveiro, Aveiro.
2. Faneca, R. (2011). Aprendizagem e Representações da língua portuguesa por lusodescendentes. Tese de Doutoramento em Didática, Universidade de Aveiro, Aveiro.
3. Gonçalves, M. L. (2011). Desenvolvimento profissional e educação em línguas: potencialidades e constrangimentos em contexto escolar. Tese de Doutoramento em Didática, Universidade de Aveiro, Aveiro.
4. Graça, L. (2010). O papel das ferramentas didácticas nas práticas docentes de escrita. Tese de Doutoramento em Didática, Universidade de Aveiro, Aveiro.
5. Mourão, S. (2012). Ilustrações do álbum em inglês e desenvolvimento da linguagem em crianças na educação de infância. Tese de Doutoramento em Didática e Formação, Universidade de Aveiro, Aveiro.
6. Pinto, S. (2012). As línguas na Universidade de Aveiro: discursos e práticas. Tese de Doutoramento em Didática e Formação, Universidade de Aveiro, Aveiro.
7. Rodrigues, L. C. (2010). Dificuldades de síntese na escrita de alunos do Ensino Superior Politécnico. Tese de Doutoramento em Didática, Universidade de Aveiro, Aveiro.

8. Sá, S. (2012). Diversidade linguística e educação para um futuro sustentável: que potencialidades nos primeiros anos de escolaridade? Tese de Doutoramento em Didática e Formação, Universidade de Aveiro, Aveiro.
9. Silva, A. F. (2009). Novos saberes básicos dos alunos, novas competências dos professores. Tese de Doutoramento em Didática, Universidade de Aveiro, Aveiro.
10. Silveirinha, M. C. (2011). A formação inicial percebida pelos professores cooperantes. Tese de Doutoramento em Ciências da Educação, Universidade de Aveiro, Aveiro.

9.4.3 Patents and Prototypes or other research outputs

9.4.4 Books and book chapters of international circulation

1. Alarcão, I. (2011). Contribuição da Didáctica para a formação de professores - reflexões sobre o seu ensino. In S. G. Pimenta (Org.), *Didáctica e formação de professores: percursos e perspectivas no Brasil e em Portugal*. S. Paulo: Cortez Editora. (ISBN: 85-7273-279-9. 1).
2. Andrade, A. I., Gonçalves, L., Martins, F., & Pinho, A. S. (2012). Développement professionnel: quelles articulations quelles articulations possibles entre formation initiale et formation continue dans un projet de formation à la didactique du plurilinguisme? In M. Causa (Org.), *Formation initiale et profils d'enseignants de langues: enjeux et questionnements* (pp. 79-312). Bruxelles: De Boeck. (ISBN: 978-2-8041-7129-2).
3. Andrade, A.I., & Araújo e Sá, M.H. (2008). Intercompréhension et formation des enseignants: parcours et possibilités de développement. In V. Conti & F. Grin (Dir.), *S'entendre entre Langues Voisines: vers l'Intercompréhension* (pp. 277-298). Genève: Georg Editeur. (ISBN: 978-2-8257-0947-4).
4. Araújo e Sá, M. H., De Carlo, M., & Melo-Pfeifer, S. (2011). L'intercomprensione nell'interazione plurilingue. In M. de Carlo (Coord.), *Intercomprensione e educazione al plurilinguismo*. Collana "Lingue sempre meno straniere" (pp. 287-301). Porto S. Elpidio: Edizioni Wizarts. (ISBN: 9788888510217).
http://www.wizartsepublishing.eu/index.php?option=com_k2&view=item&id=224:intercomprensione-e-educazione-al-plurilinguismo
5. Ferrão Tavares, C. (2010). La recherche en tant qu'outil de formation des enseignants. In C. Guillén Díaz (Coord.), *FRANCÈS. Investigación, innovación y buenas prácticas*, (vol. 3, pp. 35-55). Barcelona: Ministerio de Educación, Editorial GRAÓ. (ISBN: 978-84-9980-014-1).
6. Marques, L., Praia, J., Carrascosa, J., Edwards, M., Gil-Perez, D., Vilches, A., & Thompson, D. (2011). The Current Planetary Crisis: a Missing Dimension in Science Education. In U. Miranda Azeiteiro, F. Gonçalves, R. Pereira, M. J. Pereira, W. Leal Filho & F. Morgado (Eds.), *Science Education, Experimental Science Activities and Environmental Sustainability*. [Series "Environmental Education, Communication and Sustainability"] (pp. 25-47). Hamburg: Peter Lang.
7. Melo-Pfeifer, S. (2011). Researchers' multilingual awareness in an international research team. In C. Varcasia (Org.), *Becoming multilingual. Language learning and language policy between attitudes and identities* (pp. 135-163). Bern: Peter Lang. (ISBN: 978-3-0343-0687-4).
<http://www.peterlang.ch/index.cfm?event=cmp.ccc.seitenstruktur.detailseiten&seitentyp=produkt&pk=61812&concordeid=430687>
8. Pereira, L. A., & Barbeiro, L. F. (2010). A revisão Textual acompanhada como estratégia de ensino da produção escrita. In M. J. D. Luna, A. G. Spinillo & S. G. Rodrigues (Eds.), *Leitura e Produção de Texto* (pp. 51-80). Recife: Editora Universitária da UFPE. (ISBN: 978-85-7315-652-2).
9. Pereira, L. A., Cardoso, I., & Loureiro, M. J. (2011). Classroom teaching of writing throughout schooling. In M. Torrance et al (Eds.), *Learning to write effectively: Current Trends in European Research* (pp. 130-133). Bingley: Emerald Group Publishing Limited. <http://sig-writing.publication-archive.com/public?fn=enter&repository=1&article=599>
10. Sá-Chaves, I. (2012). La salle aux miroirs. À propos de ma rencontre avec Jean -Louis Le Moigne. In D. Genelot & M. J. Avenier (Dir.), *Agir et Penser en Complexité Avec Jean-louis Le Moigne. Témoignages de mises en actes* (pp. 209-216). Paris: L'Harmattan. (ISBN : 978-2-296-96540-9).

9.4.5 Conference proceedings

1. Ançã, M. H. (2012). Contributos dos 'saberes vulgares' para a Educação em Português. In *Anais do 14º Congresso B Portuguesa e 5º Congresso Internacional de Lusofonia do IP-PUC-SP*, 26-28 de abril 2012 (s/p). S. Paulo: IP-PUC-SP. http://www.ippucsp.org.br/downloads/anais_14o_congresso/M-P/MariaHelenaAnca.pdf
2. Andrade, A.I., & Sá, S. (2012). Educação para o desenvolvimento sustentável e diversidade linguística: que possibilid (Coord.), *Atas da VIII Jornadas sobre Língua e Usos: Língua e Ecoloxía*, 30 novembro - 1 dezembro de 2012 (s/p.). Cor Coruña, Servicio de Publicaciones. (ISBN: 978-84-9749-519-6).
3. Araújo e Sá, M. H., & Melo-Pfeifer, S. (2012). Former pour et par l'Intercompréhension - où comment les langues peu l'objectif de la formation de formateurs. In *Actas das III Assises du Plurilinguisme*, 11-13 de outubro de 2012 (s/p). Roma Plurilinguisme.
http://www.observatoireplurilinguisme.eu/images/Evenements/3e_Assises/Programme_et_contributions/Education/artick

4. Basílio, D., Araújo e Sá, M. H., & Simões, A. R. (2011). Reciprocal images of Turkish and Portuguese university student mediation between Portugal and Turkey. In A. Akbarov (Ed.), *Proceedings of the 1st International Conference on Foreign and Applied Linguistics: Linguistic and Cultural Diversity within Learning Communities: Cross-cultural and Trans-national 2011* (pp. 292-300). Sarajevo: International Burch University. (ISBN: 978-9958-9965-9-7).
5. Ferrão Tavares, C. (2009). Déclinaisons du Cadre Européen de Référence dans les manuels et dans les pratiques de au Portugal, In J.-C. Basaille et al. (Coords.), *Dialogues et Cultures*, 53. Le Français, une langue qui fait la différence, (p) Fédération Internationale des Professeurs de Français (FIPF). (ISBN: 0226-6881).
6. Macário, M. J., Sá, C. M., & Moreira, A. (2012). Discussion forums: a collaborative tool in initial teacher training? In C. (Eds.), *62nd ICEM Conference Proceedings*, 26-29 september 2012 (pp. 249-257). Nicosia: ICEM Conference Proceeding 978-9963-2802-1-6). <http://icem2012.cardet.org/>
7. Martins, M. E., & Sá, C. M. (2011). Literacy in mother tongue through new textbooks. In V. Kaartinen, C. Kiili & M. Mäl *Proceedings of 2nd Baltic Sea Reading Conference - 15th Nordic Reading Conference*, 11-13 August 2010 (pp.26-32). 1 (ISBN: 978-951-97486-6-5). http://www.parnet.fi/~finra/proceedings_of_second-baltic_sea_reading_conference
8. Pinho, A. S., & Andrade, A. I. (2010). Sobre narrativas projectadas: vozes de professores num contexto de formação . In *Actas do IV CIPA - Congresso Internacional de Pesquisa (Auto)Biográfica - "Espaço (auto)biográfico: artes de viver, c 26-29 de julho (s/p). São Paulo: Universidade de São Paulo. (ISBN: 2178-0676).*
9. Sá-Chaves, I. (2012). Ensino Superior na Comunidade de Países de Língua Oficial Portuguesa: Celebrar, Continuar, Seminário Internacional sobre Ensino Superior nos Países de Língua Oficial Portuguesa (PALOPs) "Qualidade do Ensino Diversidade e Equidade", 13 e 14 de dezembro de 2010 (pp. 13-39). Faro: Universidade do Algarve. (ISBN: 978-989-84' <http://sapientia.ualg.pt/handle/10400.1/1929>
10. Santos, M., Araújo e Sá, M. H., & Simões, A. R. (2011). Educational partnerships and intercultural education in prime (Ed.), *Proceedings of the 1st International Conference on Foreign Language Teaching and Applied Linguistics: Linguistic within Learning Communities: Cross-cultural and Trans-national Perspectives*, 5-7 may 2011 (pp. 827-834). Sarajevo: Int University. (ISBN: 978-9958-9965-9-7).

9.4.6 New materials, devices, products and processes

Materials for classroom and schools in language education (Projeto 'Línguas e Educação: construir e partilhar a Formação' / Project 'Language & education: constructing and sharing professional knowledge' - PTDC/CED/68813/2006) 2007 > 2010 / FCOMP-01-0124-FEDER-007106) -<http://linguaseeducacao.web.ua.pt/> TEREC - Teacher Education Review and Update of Curriculum (Refª: 511063-TEMPUS-1-2010-1-PT-TEMPUS-JPCR)

9.4.7 Software, computer code and algorithms

9.4.8 Books, including single-authored works (including scholarly editions of oral or written texts and translations with introduction and commentary)

1. Alarcão, I., & Araújo e Sá, M. H. (2010). *Era uma vez ... a didáctica de línguas em Portugal: enredos, actores e cenários de construção do conhecimento (Cadernos do LALE, série Reflexões, 3)*. Aveiro: Universidade de Aveiro, CIDTFF. (ISBN: 978-972-99314-8-2).
2. Alarcão, I., & Roldão, M. C. (2008) *Supervisão. Um contexto de desenvolvimento profissional dos professores*. Mangualde: Pedagogo.
3. Andrade, A. I., & Pinho, A.S. (Eds.). (2010). *Línguas e educação: práticas e percursos de trabalho colaborativo. Perspectivas a partir de um projecto*. Aveiro: Universidade de Aveiro, CIDTFF. (ISBN: 978-989-96794-6-7).
4. Cardoso, T., Alarcão, I., & Celorico, J. A. (2010). *Revisão da Literatura e Sistematização do Conhecimento*. Porto: Porto Editora. (ISBN: 978-972-0-34573-8).
5. Gonçalves, M. M. B. (2012). *Educação, trabalho e família: trajectórias de diplomados universitários*. Lisboa: FCT/Fundação Calouste Gulbenkian. (ISBN: 978-972-31-1414-0).
6. Madeira, R., Martins, A., & Neto-Mendes, A. (2012). *Trabalho Infantil: Representações e Consentimento Social*. Porto: Legis Editora. (ISBN: 978.989.8148-43-8).
7. Melo-Pfeifer, S., & Araújo e Sá, M. H. (Eds.). *Comunicação electrónica em aula de Português Língua Estrangeira*. Lisboa: LIDEL.
8. Pereira, L. A. (2008). *Escrever com as crianças. Como fazer bons leitores e escritores. Para crianças dos 0 aos 12 anos*. Porto: Porto Editora. (ISBN: 978-972-0-34374-1).
9. Pereira, L. A., & Cardoso, I. (Eds.). (2012). *Reflexão sobre a escrita. O ensino de diferentes géneros textuais*. Aveiro: Universidade de Aveiro. (ISBN: 978-972-789-358-4).
10. Sá, C. (Ed.). (2012). *Transversalidades II: Representações, instrumentos, práticas e formação*. Aveiro: Universidade de Aveiro.

9.4.9 Edited special issues of journals, with substantial research input on the part of the researcher

1. Araújo e Sá, M. H., de Carlo, M. Antoine, M.-N. (2011). L'intercompréhension: la vivre, la comprendre, l'enseigner... Cadernos do LALE - Série Propostas, 6. Aveiro: Universidade de Aveiro, CIDTFF. (ISBN:978-989-96794-8-1). <https://www.ua.pt/cidtff/lale/PageText.aspx?id=13949>
2. Degache, C., & Ferrão-Tavares, C. (Eds.). (2011). Redinter-intercompreensão. Revista da rede europeia sobre intercompreensão. Investigação sobre metodologia de ensino da intercompreensão, 2. Chamusca: Cosmos. (ISSN: 2182-0228; ISBN: 978-972-762-368-6).
3. Ferrão-Tavares, C., & Ollivier, C. (Eds.). (2010). Redinter-intercompreensão. Revista da rede europeia sobre intercompreensão. O Conceito de intercompreensão: origem, evolução e definições, 1. Chamusca: Cosmos. (ISSN: 2182-0228; ISBN: 978-972-762-359-4).
4. Ferrão-Tavares, C. (Ed.). (2009). Ela. Études de linguistique appliquée, 153. Paris: Klincksieck. (ISSN: 0071-190X). <http://www.cairn.info/revue-ela-2009-1-page-5.htm>
5. Ferrão-Tavares, C., Fróis, J., & Teixeira, M. (Eds.). (2010). Intercompreensão. Revista de didáctica das línguas. Abordagens plurais e multimodais, 15. Santarém: Cosmos. (ISSN: 0872-3893; ISBN: 978-972-762-354-9).
6. Ferrão-Tavares, C., Silva, J., & Noël-Gaudreault, M. (Eds.). (2008). Intercompreensão. Revista de didáctica das línguas. O que está a mudar na aula de língua?, 14. Santarém: Cosmos. (ISSN: 0872-3893; ISBN: 978-972-762-292-4).
7. Pinho, A. S., Andrade, A. I. (2011). Intercompreensão e Didática de Línguas: histórias a partir de um projeto Cadernos do LALE - Série Reflexões, 4. Aveiro: Universidade de Aveiro, CIDTFF. (ISBN: 978-989-96794-9-8). <https://www.ua.pt/cidtff/lale/PageText.aspx?id=15982>

9.4.10 Chapters in books, including contributions to conference proceedings, essays in collections

1. Andrade, A. I. (2010). Para uma educação plurilingue: que possibilidades supervisivas no quadro da formação contínua de professores? In R. Bizarro & M. A. Moreira (Orgs.), Supervisão Pedagógica e Educação em Línguas (pp. 73-90). Mangualde: Edições Pedagogo. (ISBN: 978-972-8990-98-6).
2. Canha, M. B., Mesquita, L., & Santos, L. (2010). "Línguas e Educação": a ambição de construir uma comunidade de desenvolvimento profissional. In A. I. Andrade & A. S. Pinho (Orgs.), Línguas e Educação: práticas e percursos de trabalho colaborativo (s/p). Aveiro: Universidade de Aveiro, CIDTFF. (ISBN: 978-989-96794-6-7).
3. Faneca, R. M., & Ançã, M. H. (2009). Place et enjeux de(s) enseignement(s) du portugais en France. In C. Gonçalves & D. Groux (Dir.), Approches comparées de l'enseignement des langues et de la formation des enseignants (pp. 235-249). Paris: L'Harmattan. (ISBN: 978-2-296-08631-9).
4. Graça, L., & Pereira, L. Á. (2012). Metodologia para analisar a prática docente: o contributo da sinopse. In J. A. B. Carvalho, L. Barbeiro, L. A. Pereira & A. C. Silva (Ed.), Aula de Língua: Interação e Reflexão (pp. 55-86). Óbidos: Várzea da Rainha Impressores, S.A.. (ISBN: 978-989-95554-6-4).
5. Graça, L., & Pereira, L. A. (2012). Metodologia para analisar a prática docente: o contributo da sinopse. In J. A. B. Carvalho, L. Barbeiro, L. A. Pereira & A. C. Silva (Eds.), Aula de Língua: Interação e Reflexão (pp. 55-86). Óbidos: Várzea da Rainha Impressores, S.A.. (ISBN: 978-989-95554-6-4). <http://repositorium.sdum.uminho.pt/handle/1822/18280>
6. Martins, F. (2011). Intercompreensão e formação de professores para os primeiros anos de escolaridade - desafios e potencialidades. In D. Álvarez, P. Chardenet & M. Tost (Eds.), L'intercompréhension et les nouveaux défis pour les langues romanes (pp. 417-431). Paris: AFF/Union Latine.

9.4.11 Creative writing (to the extent that it embodies research)

9.4.12 Encyclopedia entries (to the extent that they embody research)

9.4.13 Audio/visual and electronic/digital materials

Galapro Plataform (Projeto 'Formação de formadores para a intercompreensão em Línguas Românicas' / Project 'Education of trainers for Intercomprehension in Romance Languages' - 135470-LLP-1-2007-1-PT-KA2-KA2MP), <http://www.galapro.eu/sessions/>, with teacher training materials (namely library and Guidelines to self-supervision)

9.4.14 Other categories, including web-based resources; video and audio recordings (to the extent that they embody research)

Video presenting LALE (Laboratório Aberto para a Aprendizagem de Línguas Estrangeiras/Open Lab for Foreign Language Learning), http://www.youtube.com/watch?v=SApIDe_SWoo

Video presenting the project 'Language & education: constructing and sharing professional knowledge' - PTDC/CED/68813/2006 2007- 2010 / FCOMP-01-0124-FEDER-007106),

9.4.15 Performances and exhibitions to the extent that they embody research

9.4.16 Other research outputs

1. Borges, H., & Pereira, L. A. (2011). A Poesia das letras - atividades com o texto poético no 1.º ciclo. Porto: Porto Editora (ISBN: 978-972-0-17070-5). <http://www.portoeditora.pt/produtos/ficha/a-poesia-das-letras-1-e-2-anos?id=9423468>
2. Coelho, R., & Mourão, S. (2009). Little Hoola Pre-school Student's Book & Teacher's Guide. Porto: Porto Editora. (ISE 978-972-0-18130-5).
3. Coelho, R., Mourão, S., Bento, C., & Joseph, N. (2009). Hoola Hoop Primary 2 Student's Book & Teacher's Guide. Porto: Porto Editora.
4. Mourão, S., Coelho, R., Bento, C., & Joseph, N. (2009). Hoola Hoop Primary 1 Student's Book & Teacher's Guide. Porto: Porto Editora. (ISBN: 978-972-0-18131-2).
5. Mourão, S., & Gamboa, M. J. (2009). Best Buddies Buddy. Levels 1, 2 & 3. Book. Student's Book. Teacher's Guide. New York City: Macmillan.
6. Mourão, S. (2011). Hello Jack! Student's Book & Teacher's Guide. Macmillan. (ISBN: 9780230404502).
7. Oliveira, A. L., Reigota, F., Silva, M., & Ferreira, T. (2012). Guia do Professor - Português, 10.º ano. Timor-Leste: Ministério da Educação. (ISBN: 978-989-8547-00-2).
8. Oliveira, A. L., Reigota, F., Silva, M., & Ferreira, T. (2012). Português - Manual do aluno, 10.º ano. Timor-Leste: Ministério da Educação (ISBN: 978-989-8547-13-2).
9. Pinto, M. (2009). Programa de Português do Ensino Básico. Lisboa: Ministério de Educação, DGIDC. <http://www.dgidc.min-edu.pt/outrosprojetos/index.php?s=directorio&pid=11&ppid=2>; http://www.dgidc.min-edu.pt/outrosprojetos/data/outrosprojectos/Portugues/Documents/programa_portugues_homolog

9.4.17 Organisation of scientific dissemination activities

1. 4º Congresso Internacional EDiLiC (Education et Diversité Linguistique et Culturelle): Sensibilização à diversidade linguística, investigação, práticas educativas e de formação. Aveiro, Universidade de Aveiro, 16-18 de julho de 2012. <http://cms.ua.pt/>
2. Academic Writing in Higher Education Across Countries. Aveiro, ISCAA-UA, 16 de julho de 2012. <http://cms.ua.pt/prot>
3. I Congresso de formação de professores de Português na Alemanha, Ensino de Português Língua Originária - o Ensino heterogéneo. Dos problemas às soluções - criação pedagógico-didática entre a percepção e a prática. Alemanha, Weill, 2012. <http://cepealemanha.wordpress.com/2012/04/29/herkunftssprachlicher-unterricht-portugiesisch-lernen-und-unterrichten-i>
4. 13th SIG Writing Conference 2012. Porto, Universidade do Porto, 11-13 de julho de 2012. <http://www.fpce.up.pt/sigwr>
5. Colóquio Galapro - Formação de Formadores para a Intercompreensão: princípios, práticas e retos. Viseu, Universidade de Viseu, 18 de março de 2010.
6. II Jornada Científica - Proyecto Galapro. Intercomprensión. Madrid, Universidade Complutense de Madrid, Facultad de Educación, 16 de fevereiro de 2009.
7. II Encontro do LEIP - Ensinar Português hoje: problemas e desafios. Aveiro, Universidade de Aveiro, 6 de julho de 2012. <http://www.ua.pt/cidfff/leip/PageText.aspx?id=15327>
8. Colóquio Línguas e Educação: práticas e percursos de trabalho colaborativo. Aveiro, Universidade de Aveiro, 16 de julho de 2012.
9. Jornadas Científicas da Linha 1 do CIDTFF - Educação, Supervisão e Desenvolvimento. Aveiro, Universidade de Aveiro, 15 e 16 de fevereiro de 2009.
10. Colóquio Da Investigação à Prática. Interações e debates. Aveiro, Universidade de Aveiro, 15 e 16 de fevereiro de 2009.

9.4.18 Research contracts with national or international entities

9.4.19 Projects funded in national and international competitive calls

1. The European Research Network on Learning to Write Effectively (ERN-LWE) - COST Action IS0703
2. PROTEXTOS - Ensino da Produção de Textos no Ensino Básico (Refª: CPE-CED/101009/2008)
3. EMIP/DL: Didáctica de Línguas: um estudo meta-analítico da investigação em Portugal (Refª: POCI e PPCDT/CED/59777/2004)
4. Línguas e Educação: construir e partilhar a formação (Refª: PTDC/CED/68813/2006)

5. IPEC - Investigação e práticas lectivas em Educação em Ciência: dinâmicas de interacção (Refª: POCI/CED/58825/2004)
6. GALAPRO - Formação de formadores para a intercompreensão em Línguas Românicas (Refª: 135470-LLP-1-2007-1-PT-KA2-KA2MP)
7. MIRIADI - Mutualisation et Innovation pour un Réseau de l'Intércomprehension à Distance (Refª: 531186-LLP-1-2012-1-FR-KA2-KA2NW)
8. Chain Stories (Refª: 229633-CP-1-2006-1-ES-LINGUA-L1)
9. Redinter - Rede Europeia de Intercompreensão (Refª: 143339-2008-LLP-PT-KA2-KA2NW)
10. TERC - Teacher Education Review and Update of Curriculum (Refª: 511063-TEMPUS-1-2010-1-PT-TEMPUS-JPCR)

9.5. ORGANISATIONAL STRUCTURE AND OBJECTIVES OF THE RESEARCH GROUP 2015/2020

9.5.1 Structure of the Research Group

The RG1 is centred on the understanding of linguistic, communicative, curricular, and professional development, namely on how educational practices are considered in contexts of pedagogical supervision. This RG will continue the work developed till now trying to construct knowledge about educational diversity, curricular & professional development, bearing in mind that in this process languages are both instruments & spaces of development. The RG will be mainly focused on i) the analysis of the work it generated & the comparison with the production of other research teams having the same objects of study, ii) the reconstruction of that knowledge in order to project new educational practices. The work will be developed in phases corresponding to the following tasks:

- a meta-analytic study of reports/studies concerning language education & pedagogical supervision, in order to attain the state of the art of the field, systematize main achievements, identify potential intervention areas, and create educational/supervision projects to be implemented in the Portuguese contexts;
- the design, implementation & evaluation of education/supervision projects with different actors in real contexts, and the production of reports on their results, which will be discussed & used in educational settings;
- the analysis of the reports & elaboration of papers, materials, recommendations for education/supervision & research to strengthen the knowledge produced about diversity in the curricula, in teacher education programs & in proposals to develop the literacy competences of the individuals.

These tasks will be accomplished by small groups, created according to the keywords of the group & according to the different tasks. The RG will organize, in each year, an open seminar for the CIDTFF members and the community involved in the development of research, in order to discuss processes & results. The RG will also organize 2 national and 1 international seminars for the discussion of the results of the different studies. These scientific meetings will originate 3 publications on the products of the above mentioned tasks and seminars in the context of different networks (e.g. IALIC - Association for Languages and Intercultural Communication).

The purpose of the work is to create reference frames and to develop knowledge about educational theories/practices used in lifelong learning educational processes in different supervision contexts, focused on plural literacies and more sustainable life styles. The main goal is to understand how educational diversity and languages contributes to educational development (linguistic, communicative, personal, social, curricular and professional), and how the theories/practices derived from work concerning diversity influence individuals and the activities they develop in the educational times/spaces where they circulate.

The research will be developed i) taking into account transformation/change, ii) analysing how the linguistic, cultural, social and technological changes are translated into theories/practices of the educational actors (shared ideologies, discursive forms, didactic choices performed, worked literacies, ways of life adopted), iii) reflecting on how these theories/practices value differences, iv) understanding how these theories/practices can lead to educational change. The RG will analyse cultures of teaching/learning and supervision, where languages and ways of being play a role, namely in teaching materials, platforms supporting the learning process or collaborative work, classes and other supervision situations, intercultural exchanges.

Educational knowledge construction is expected to contribute to the development of teaching/learning practices and supervision on new educational/professional identities, and to the reflection on how these identities project other times and spaces of education, capable of coping with the linguistic, cultural and social challenges that societies face today.

9.5.2 Objectives of the Research Group

The aims of this RG are:

- to analyse studies and research reports on the way educational diversity and plural literacies have been understood within the curricular and educational development;
- to identify and analyse the discourses used in educational and supervision situations in current societies, in order to understand how they appeared, what are their characteristics, how they influence educational actors and how they can be transformed;
- to identify ways of dealing with present educational discourses and situations and of (re)constructing, designing, implementing and reflecting on other forms of education (aims, content, strategies, activities, materials, programs);

- to analyse processes of educational development and the role they can play in the reconstruction of new linguistic, communicative, social, cultural and professional identities;
- to produce, experiment and evaluate educational and supervision materials, which may contribute to the development of individuals, educational institutions, supervision and research;
- to examine ways of (re)constructing educational knowledge collaboratively with different stakeholders, in order to contribute to fairer and more inclusive, sustainable and intercomprehensive societies in linguistic, cultural and social terms;
- to disseminate the knowledge produced on the educational topics listed above among different publics, in order to discuss and (re)construct that knowledge with other educational and research partners;
- to propose ways of knowledge transfer into new contexts of education, supervision and research;
- to project new theories and educational and supervision practices, able to transform the contexts where we circulate, making them more responsive to social and educational demands, more inclusive and more able to promote human development.

The researchers of this group will examine: i) the work of educational stakeholders (educators, teachers, trainers, researchers, policy makers, editors...), ii) their representations on this work (its functions and nature), iii) the way educational policy discourses represent the educational/supervision work and influence it, modelling situations of educational intervention in order to meet the challenges of the current, globalized and diverse societies. This intent is connected to the research of alternative educational paths and personal and professional repertoires (personal and professional discourses on education and supervision), in order to identify possibilities of transformation of educational dynamics towards the creation of situations promoting educational development. Closely related to this is the study of the dynamics of collaborative construction of educational and supervision knowledge by different stakeholders. The RG also intends to analyse how actors make meaning of, integrate and reconfigure educational theories and practices, the goals they define as a result and the possibilities for intervention they perceive within their professional activity and contextual realities. It is aimed to understand how the actors construct their (new) identities, become aware of such identities and of the political, social and personal forces that shape them, how they reconfigure their status and the educational roles they may play (agency) in the context of the (new) adopted theories and practices, in order to contribute to the development of fairer and more inclusive societies. The work of this RG will also be supported by the LALE (Open Lab for Learning Foreign Languages - <http://www.ua.pt/cidttff/lale/>) and the LEIP (Laboratory for Research on Portuguese Language Education - <http://www.ua.pt/cidttff/leip/>), laboratories focused on the language education. The involvement of the researchers in national and international networks, as well as the projects of the PhD students and post-doctorate will also contribute to the achievement of the RG's objectives.

(RG-194-2731) Science, teaching, learning and society

9.1. IDENTIFICATION OF THE RESEARCH GROUP

9.1.1 Reference of the research group

RG-194-2731

9.1.2 Name of the Research Group in portuguese

Ciência, Ensino, Aprendizagem e Sociedade

9.1.3 Name of the Research Group in English

Science, teaching, learning and society

9.1.4 Keyword(s)

Formal and non-formal education

Scientific literacy

Science popularization

Education and Science Interfaces

9.1.5 Existed in 2008/2012

Yes

9.1.6 Participating Institution(s) to which the Research Group belongs

Universidade de Aveiro (UA)

9.2. RESEARCHERS IN THE GROUP

9.2.1 List of Integrated Members / 3 nuclear CVs

Name	Principal Investigator	Nuclear CV
Ana Alexandra Valente Rodrigues	No	No
António F. C. Cachapuz	No	No
CARLOS Alberto Pereira de MEIRELES COELHO	No	No
Carolina Elizabeth Dominguez	No	No
Catarina Schreck Carmo dos Reis	No	No
Cecília Vieira Guerra	No	No
Cristina Maria Carvalho Gaspar de Oliveira	No	No
Fátima Regina Duarte Gouveia Fernandes Jorge	No	No
Isabel Maria Cabrita dos Reis Pires Pereira	No	No
Isabel Maria Coelho de Oliveira Malaquias	Yes	Yes
Joaquim Bernardino de Oliveira Lopes	No	No
Jorge Manuel Rodrigues Bonito	No	No
José Paulo Cerdeira Cleto Cravino	No	No
Lucilia Maria Pessoa Tavares dos Santos	No	No
Manuel Fernando Ferreira Rodrigues	No	No
Maria Cecília Rosas Pereira Peixoto da Costa	No	No
Maria Celina Cardoso Tenreiro Vieira	No	No
Maria de Fátima Carmona Simões da Paixão	No	No
Maria Filomena Rodrigues Teixeira	No	No
Maria Helena Carvalho Gomes Caldeira Martins	No	No
Maria Helena Gouveia Fernandes Teixeira Pedrosa de Jesus	No	Yes
Maria Isabel Tavares Pinheiro Martins	No	No
MARIA TERESA BIXIRÃO NETO	No	No
Patricia Alexandra Pacheco de Sa	No	No
Patrícia Glória Soares de Albergaria de Almeida	No	Yes
Paulo José Coelho de Oliveira	No	No
Rui Marques Vieira	No	No
Vitor Hugo da Rosa Bonifácio	No	No
Ana Margarida de Oliveira Capelo	No	No
Ana Paula Florêncio Aires	No	No
Nilza Maria Vilhena Nunes da Costa	No	No
Margarida Rocha Lucas	No	No
Ana Vitória Madeira Teixeira Baptista	No	No

9.2.2 List of current PhD students

NAME

Betina da Silva Lopes

Mariana Matias Martinho
Sofia Raquel Mota Nogueira
Maria Pedro Almeida Neves Ferreira da Silva
Joana Isabel Pinheiro Peixinho
Adriana Maria Mota Ramos
Susana Vieira Pinto Gomes Castro
Maria Margarida Melo de Carvalho
Isabel Maria de Bastos Teixeira
Sónia Paula Vilela Raposo
Ricardo Jorge Castro Gonçalves
Alina Vaz Reis
Ana Raquel Fernandes Pires Lopes
Ana Carolina Morgado Ferreira de Frias
Arminda Maria Malho Santos Sousa
Elisa Maria da Silva Cardoso Saraiva
José Alexandre Silva Pinto
Maria Júlia Madeira Pires Branco
António Pedro Barbot Gonçalves da Silva
Carla Manuela Aguiar dos Santos
Ana Margarida Silva Maia
Carina Alexandra Malta Rodrigues da Queija Miranda Santos
Luísa Maria Lopes Martins
Hugo Riardo Ferreira Rebelo
Cândida Manuela Fidalgo Sarabando
Daniela Cristina Carneiro Pedrosa
José Manuel Oliveira Pinheiro
Isabel Maria Torres Magalhães Vieira de Araújo
Hilária Joaquim Matavele
Joana Alexandra Soares de Freitas
Joana Filipa Cardoso Lopes de Almeida
Maria José Lopes Fonseca
Laura Maria de Almeida dos Reis
Sílvia Maria Sousa Torres
Rui Filipe Lopes Gonçalves
Bárbara Machado Marques
Rogério Eleazar Carlos Cossa
maria joao cardoso teixeira
Maria João Pinto de Vasconcelos
Maria Hermínia Benincá Schenkel
Cristina Maria Mendes dos Santos da Fonseca e Sá
Aldina da Conceição Rodrigues
Ricardo Filipe Campos Poças
Vladimiro Sérgio de Sousa Machado

9.2.3 List of other researchers of the Research Group

NAME

Fernando Moreira Marques

António Manuel Lopes Andrade

Helena Maria Barros de Campos

José Benjamim Ribeiro da Fonseca

Maria fernanda da Silva couceiro

Maria Filomena Madeira Ferreira Amador

Maria Isabel Ferreira Bartolomeu

Maria Rui de Vilar Correia

Paula Maria Machado Cruz Catarino

Paulo Nogueira Martins

Paulo Renato Pereira Trincão

Manuel Jose Cabral dos Santos Reis

9.3. RESEARCH GROUP DESCRIPTION AND ACHIEVEMENTS FOR 2008/2012

9.3.1 Description of the Research Group

Name of Research Group 2 [RG2] (2008-2012): Education/Teaching, Learning & Development

The RG2 focused on developmental perspectives of critical citizenship and scientific culture both in formal and non-formal contexts framed in a Science, Technology and Society [STS] approach.

Though maintaining emphasis on classroom problems and contexts, where didactics and teacher training are main concerns, it grew to wider transdisciplinary and intercultural issues, next to diverse and dynamic educational situations. In this sense, the main research question was underpinned taking into account that Science and Technology (S&T) pervade our lives in contemporaneity. This leads us to research on S&T frameworks to understand: 1) to what extent it is perceived, taught and learned from pre-school to higher education (HE); 2) how can it contribute to a humanistic citizenship that can shape an idealized conception of bringing two cultures together; 3) what is the influence of media on peoples' lives and on the transmitted ideas and values through different technological means; 4) and how does a knowledge-based culture enables better teaching and learning practices. Research was also produced in order to promote the potentialities of education that the new virtual and digital environments evoke, along with the research on S&T education in this field. Interconnections between science, art, history of science and education and health education have been studied, aiming to analyze their possible impact on knowledge production, interaction with education and innovative approaches to the science curriculum and teaching.

The RG2 researchers organized their work on the different aspects of research, training and implementation, towards a sustainable change of the educational quality and educators' competencies. Framed on the CIDTFF strategic principles it was intended to strengthen: scientific production (eg. in national and international peer-reviewed journals); internationalization, through partnerships and research/training programs (eg. involving Portuguese Speaking Countries); research and educational intervention in society (eg. designed activities to promote public understanding of science, participation in governmental programs regarding teacher training and institutional evaluation).

The participation in the development of the Integrated Centre for Science Education (CIEC)

[ciec.vnb.pt/investigacao/ciec-projeto-de-investigacao] is an important landmark for educational research and intervention in a community, as it is the first Ciência Viva Center within a school (in this case, a primary school) and working closely with it, in a depressed zone of the country.

The developed research deepened and enlarged S&T patterns and mediation processes in non-formal contexts, and on its transferability to basic, secondary and HE. Intervention at HE was developed through questioning, evaluation, feedback and reflexive practices. Research was also undertaken with children and young people with Special Education Needs (SEN) in an inclusive educational context and lifelong learning paradigm.

Research-based instruments were conceived aiming to: stimulate active learning and critical thinking in a collaborative distributed environment; support scholars' work; design and adopt practices to meet new teaching demands and feedback solutions.

Three laboratories provided direct support to research, training and community services: LEduC (Science Education Laboratory and Science Garden), LEM@TIC (Mathematics Education Laboratory) and LCD (Digital Contents Lab).

The articulation with other RG of CIDTFF potentiated the projects' design and development that lay i) in the rationales of more than 1 RG and ii) in the different members' expertise (eg. the development of scientific literacy, innovative T&L strategies [RG2] implies proper learning assessment methodologies [RG4]).

9.3.2 Main achievements

The RG2 main achievements include its scientific production, the developed research projects, the attained post-graduation growth, framed in the CIDTFF's strategic principles.

The RG2 published 184 papers [2008: 10; 2009: 40; 2010: 38; 2011: 44; 2012: 52] in international peer reviewed journals (p.r.j.): Journal of Science Education, Rev. Indagatio Didactica, Procedia Social and Behavioral Sciences, International Knowledge Society Research, Research in Science Education, Rev. Iberoamericana de Educación, Rev. Eureka Enseñanza de las Ciencias, Rev. Educación en Ciencias, and Enseñanza de las Ciencias. Also published 28 papers in national p.r.j. This difference meets the plan to stress members' publishing in international journals. Those papers relate to RG2 clusters: scientific/technological literacy; teaching/learning of science; media discourse; interfaces with other areas, such as science and art, history of science and of education and digital and virtual tools. They focused on: education theoretical frameworks (from kindergarten to HE levels and lifelong learning programs); training, evaluation and supervision (TE&S) in formal, non-formal and informal contexts to face educational challenges in changing societies; studies related to TE&S in innovative contexts; creation of diverse research resources and exploiting multimedia potential to support TE&S and assess their use effects (eg.: BARTHES Database for Thematic Relational Analysis; DIDAKTOS®-Didactic Instructional; Design for the Acquisition of Knowledge and Transfer to Other Situations; DidaktosOnLine®- DIDAKTOS distributed version; sembarreiras.org-Portal and blog for SEN; HEI-CT Tracer distributed online tool to gather information on ICT equipment, usages and performance in education; ArguQuest software to promote active learning in (a)synchronous and distributed environment; WebQDA-qualitative data analysis software [webqda.com], used in Portugal and abroad; Baú da Física e Química database and website [www.baudafisica.web.ua.pt] about old didactic instruments; 11 patented products among coursewares and experimental science kits).

The RG2 members also published curricula, textbooks and teacher guides for East Timor secondary schooling for several subjects. It also published 1 book and 47 chapters (international) and 33 books and 30 chapters (national).

The RG2 members led 7 research projects together, supervised 34 PhD and won 6 prizes.

Formative actions/workshops to some audiences (students, teachers and other public) were taken face to face (eg. in LEduC and in LEM@TIC) and in virtual environments (eg. Second Life). CIEC had a high national visibility on TV (eg. program-camaraclara.rtp.pt/#/arquivo/265). Creation of supporting innovative approaches to teachers' practices.

Some RG2 members have been recognized for their expertise and have been invited to coordinate (inter)national projects, research teams and evaluation panels (eg. International project leadership for the general secondary education curricular redefinition and support to the East Timor Ministry of Education to implement the new curricula and the teacher training programs; national project coordination contracted by the Ministry of Education, aiming at the Teacher Education Program in Experimental Sciences impact evaluation (involving 4 Universities, 14 Polytechnics, 140 000 pupils and 7000 teachers); Presidency of the Assessment and Accreditation Committee for the Study Programs (1st to 9th grade schooling) - A3ES; representation in institutional councils (Aveiro City Council of Education; primary and secondary schools General Council); FCT Evaluation Committees (scholarships, projects); Integrated Actions of PT National Universities Council and A3ES; Management Board Member in Action 3-IC1208 Integrating devices and materials: a challenge for new instrumentation in ICT (Program COST Experts) fct.pt/apoios/cooptrans/cost/.

9.4. RESEARCH GROUP OUTPUT 2008/2012

9.4.1 Publications in peer reviewed journals and/or other publications

1. Pedrosa-de-Jesus, M. H., Silva Lopes, B., Moreira, A., & Watts, M. (2012). Contexts for questioning: two zones of teaching and learning in undergraduate science. *Higher Education*, 64(4), 557-571. (ISSN: Print - 0018-1560; Online - 1573-174X). DOI 10.1007/s10734-012-9512-9.
2. Albergaria-Almeida, P. (2011). Critical thinking, questioning and creativity as components of intelligence. *Procedia Social and Behavioral Sciences*, 30, 357-362. (ISSN: 1877-0428). (WOS: 000282002800014).
3. Loureiro, A., & Bettencourt, T. (2011). The extended classroom: meeting students' needs using a virtual environment. *Procedia Social and Behavioral Sciences*, 15, 2667-2672. (ISSN: 1877-0428). (WOS: 000298605103001)
4. Albergaria Almeida, P., Teixeira-Dias, J. J. C., Martinho, M., & Balasooriya, C. (2011). The interplay between students' perceptions of context and approaches to learning. *Research Papers in Education*, 26(2), 149-169. (ISSN: Print - 0267-1522; Online 1470-1146).
5. Lopes, J. B., Branco, M., & Jimenez-Aleixandre, M. P. (2011). 'Learning Experience' Provided by Science Teaching Practice in a Classroom and the Development of Students' Competences. *Research in Science Education*, 41(5), 787-809. (ISSN: 1573-1898). <http://link.springer.com/article/10.1007%2Fs11165-010-9190-5>
6. Lopes, J. B., Viegas, C., & Cravino, J. P. (2010). Improving the learning of Physics and development of competences in engineering students. *International Journal of Engineering Education*, 26(3), 612-627. (ISSN: 0949-149X). (WOS: 000278764400013).
7. Lucas, M., & Moreira, A. (2010). Knowledge construction with social web tools. *Communications in Computer and Information Science*, 73, 278-284. (WOS: 000290636700040). (ISSN: 1865-0929).
8. Ribeiro, J., Moreira, A., & Almeida, A. M. (2010). ICT in the education of students with SEN: perceptions of stakeholders. *Communications in Computer and Information Science*, 73, 331-337. (WOS: 000290636700047). (ISSN: 1865-0929).
9. de Jesus, H. P., & Moreira, A. (2009). The role of students' questions in aligning teaching, learning and assessment: a case study from undergraduate sciences. *Assessment & Evaluation in Higher Education*, 34(2), 193-208. (WOS:

000270904100006). (ISSN: Print - 0018-1560; Online - 1573-174X).

10. Malaquias, I. (2008). Aspects of the scientific network and communication of John Hyacinth de Magellan in Britain, Flanders and France. *AMBIX*, 55(3), 255-273. (WOS: 000207562400004). (ISSN 0002-6980, Online ISSN: 1745-8234).

9.4.2 Completed PhD theses

1. Sá, P. (2008). Educação para o Desenvolvimento Sustentável no 1.º CEB: Contributos da Formação de Professores. Tese de doutoramento em Didática, Universidade de Aveiro, Aveiro.
2. Neto, T. (2009). O Desenvolvimento do Raciocínio Dedutivo ao Nível do Ensino Secundário. Tese de doutoramento em Didática, Universidade de Aveiro, Aveiro.
3. Rodrigues, A. (2011). A Educação em Ciências no Ensino Básico em Ambientes Integrados de Formação. Tese de doutoramento em Didática e Formação, Ramo de Didática e Desenvolvimento Curricular, Universidade de Aveiro, Aveiro.
4. Guerra, C. (2012). Formação de professores de ciências para o uso de tecnologias. Tese de doutoramento em Multimédia em Educação, Universidade de Aveiro, Aveiro.
5. Lucas, M. (2012). Contributo das ferramentas da Web social na construção de conhecimento. Tese de doutoramento em Multimédia em Educação, Universidade de Aveiro, Aveiro.
6. Pereira, S. (2012). Educação em ciências em contexto pré-escolar. Tese de doutoramento em Didática e Formação, Universidade de Aveiro, Aveiro.
7. Cardoso, A. M. (2011). Física e Contemporaneidade no Ensino Secundário: Um contributo no âmbito da formação de professores. Tese de doutoramento em Didática, Universidade de Aveiro, Aveiro.
8. Barbosa, I. (2012). Competências na utilização das ferramentas/serviços Web 2.0: contexto de desenvolvimento profissional dos professores. Tese de doutoramento em Multimédia em Educação, Universidade de Aveiro, Aveiro.
9. Moreira, A. (2012). O questionamento no alinhamento do ensino, aprendizagem e avaliação. Tese de doutoramento em Didática e Formação, Universidade de Aveiro, Aveiro.
10. Torres, A. (2012). Desenvolvimento de Courseware com orientação CTS para o ensino básico. Tese de doutoramento em Didática e Formação, Universidade de Aveiro, Aveiro.

9.4.3 Patents and Prototypes or other research outputs

2346/2008; Registo nº 2395/2008 - Projecto SLESES <http://www.esse.ipsantarem.pt/sleses/index.swf>

Fluids_ID - Plataforma de e-portfólios para a inclusão social e empregabilidade" (Registo de Obra 2347/2008; Registo nº 2396/2008)

energiza.te - consumo e recursos energéticos - Torres, A. C., Vieira, R. registo de Direito de Autor pela Inspeção-geral das Actividades Culturais- IGAC (Proc. N.º 1420/2009, Reg. N.º 1476/2009)

Amaro, A. C. - Curucucu, conto eu ou contas tu?, marca nominal e figurativa, recenseada pelo INPI em 29.01.2010 (despacho de concessão em 14.05.2010 e inserida no Boletim de Propriedade Industrial nº 95/2010)

Talaia, M & Serra, N. (2010). Uma estação meteorológica clássica virtual com entrada via Google Earth, em contexto virtual e real, denominado Meteológica. Registo de Direitos de Autor e Patentes, INPI - Instituto de Propriedade Industrial, nº 465223, em 20 de Abril.

Cabrita I., & Vizinho, I. (2011) - Adenda ao registo de Direitos de Autor referente às 5 obras científicas: Decimate (Registo n.º3466/2011), Domideci - Dominó da Décima (Registo n.º 3467/2011), Domicenti - Dominó da Centésima (Registo n.º 3468/2011), Loto - Puzzle Decimate (Registo n.º 3469/2011) e Domimulti (Registo m.º 3471/2011).

9.4.4 Books and book chapters of international circulation

1. Albergaria Almeida, P. (2012). Learning styles and disciplinary fields: is there a relationship? In N. Popov, C. Wolhuter, B. Leutwyler, G. Hilton, J. Ogunleye & P. Albergaria Almeida (Eds.), *International Perspectives on Education* (pp. 391-396). Sofia: Bulgarian Comparative Education Society. (ISBN: 978-954-92908-1-3). <http://bces.conference.tripod.com/sitebuildercontent/sitebuilderfiles/bces.conference.book.vol.10.2012.pdf>
2. Bonito, J. (2012). Panoramas atuais acerca do ensino das ciências. Boa Vista: Universidade Federal de Roraima. (ISBN: 856021572-0). <http://hdl.handle.net/10174/7560>
3. Cachapuz, A. (2011). Bolonha 2010. In M.L. Almeida, & E. M. Pereira (Eds.), *Reforma universitária e a construção do espaço europeu de educação superior* (pp. 93-107). Campinas, SP: Mercado das Letras. (ISBN: 978-85-7591- 198 -3). http://www.mercado-de-letras.com.br/desc_livro.php?id=261&cat=6
4. Guerra, C., Moreira, A., & Vieira, R. (2012). ICT competences for teachers in 21st Century - a design framework for science primary teacher education courses. In N. Popov, C. Wolhuter, B. Leutwyler, G. Hilton, J. Ogunleye & P. Albergaria Almeida (Eds.), *International Perspectives on Education* (pp. 397-402). Sofia: Bulgarian Comparative Education Society. (ISBN: 978-954-92908-1-3).
5. Lopes, J. B., Cravino, J. P., & Silva, A. A. (2010). Metilost as a consistent tool to describe, elucidate and predict: an

overview. In J. B. Lopes, J. P. Cravino & A. A. Silva (Ed.), *Effective teaching for intended learning outcomes in science and technology* (Metilost) (pp. 75-79). Nova Science Publishers. (WOS:000279883700008)

6. Lucas, M., & Moreira, A. (2012). Empowering Teachers Through Social Networking. In R. N. Linhares, S. Lucena & A. C. Versuti (Orgs.), *As Redes Sociais e seu impacto na Cultura e na educação do século XX* (pp. 149-166). Fortaleza: Edições UFC.

7. Moreira, A., Benavides, O. & Mendes, A. J. (Eds.) (2012). *Media in Education. Results from the 2011|ICEM and SIEE Joint Conference*. New York: Springer. (ISBN 978-1-4614-3174-9).

8. Martins, I. P., & Paixão, F. (2011). Perspectivas atuais Ciência-Tecnologia-Sociedade no ensino e na investigação em educação em ciência. In W. L. P. dos Santos & D. Auler (Orgs.), *CTS e educação científica: desafios, tendências e resultados de pesquisas* (pp. 135-160). Brasília: Editora Universidade de Brasília. (ISBN: 978-85-230-1306-6). <http://www.editora.unb.br/1stDetalhaProduto.aspx?pid=205>

9. Pombo, L., Loureiro, M. J., & Moreira, A. (2011). Guidelines for effective bLearning in teacher education: experience gathered from the three cycles of Higher Education. In M. Bhattacharya, N. Mach & M. Moallem (Eds.), *Emerging technologies in learning: impact on cognition & culture* (pp. 259-268). Retrieved from Association for the Advancement of Computing in Education (AACE Publication) database. (ISBN: 1-880094-91-6). <https://storefront.acculink.com/aace/GetThumbnail.aspx?assetid=71>

10. Sá, P., & Martins, I. P. (2012). Education for Sustainable Development in Primary Schools: Contributions from the Development of a Teacher Training Program. In F. Gonçalves, R. Pereira, W. L. Filho, & U. M. Azeiteiro (Eds.) *Contributions to the UN Decade of Education for Sustainable Development* (pp. 163-189). Frankfurt am Main: Peter Lang (ISBN 978-3-631-61347-4).

9.4.5 Conference proceedings

1. Dias, A. B., Moreira, A., Pombo, L., & Loureiro, M. J. (2009). Online teaching/learning strategies: an evaluation framework. In A. Rocha, F. Restivo, L. P. Reis et al. (Eds.), *Sistemas e Tecnologias de Informação: Actas da 4ª Conferência Ibérica de Sistemas e Tecnologias de la Informação* (pp. 427-433). Póvoa de Varzim, Portugal: Universidade do Porto, Faculdade de Engenharia e Universidade Fernando Pessoa.

2. Guerra, C., Moreira, A., & Vieira, R. (2011). Technology enhanced science education: a design framework for primary teacher education courses. In *ICEM&SIEE'2011 Joint Conference Proceedings - "Old meets new - media in education"*, 27-30 September 2011 (pp. 855-859). Aveiro: Universidade de Aveiro. (ISBN: 978-972-789-347-8).

3. Loureiro, A. (2011). Building knowledge in virtual environments - influence of the interpersonal relationships: the outlined research. In K. Mailliet et al (Eds.), *Proceedings of the 5th Doctoral Consortium at the European Conference on Technology Enhanced Learning*, 29 September 2011 (pp. 43-48). Barcelona: CEUR Workshop Proceedings. (ISBN: 1613-0073). <http://ceur-ws.org/Vol-709/paper08.pdf>.

4. Macário, M. J., Tréz, T., Ferrão, S., Gonçalves, J., Cabrita, I., & Pombo, L. (2010). Practice communities in virtual environments: collaborative experience theory. In P. Escudeiro (Ed.), *Proceedings of the 9th European Conference on E-Learning*, 4-5 november 2010 (pp. 683-691). Porto: Instituto Superior de Engenharia do Porto. (WOS: 000291089800085).

5. Paixão, F. (2011). La recherche sur l'éthique et l'enseignement des sciences: construction et validation d'un document d'analyse. In Association Francophone Internationale de Recherche Scientifique en Éducation (AFIRSE) (Orgs.), *Rechercher sur la citoyenneté et la socialisation - La recherche en éducation dans le monde, où en sommes-nous? Thèmes, méthodologies et politiques de recherches - Communications du Congrès de l'Association Francophone Internationale de Recherche Scientifique en Éducation* (pp. 116-119). Paris: AFIRSE, UNESCO.

6. Ribeiro, S., Moreira, A., & da Silva, C. (2010). Digital storytelling project: identity and voice in higher education. In P. Escudeiro (Ed.), *Proceedings of the 9th European Conference on E-Learning*, 4-5 November 2010 (pp. 766-768). Porto: ACI. (WOS:000291089800094)

7. Rodrigues, A. V., & Martins, I. P. (2012). A Concepção de um Centro Integrado de Educação em Ciências com enfoque CTS no seio de uma escola. In *Atas do III Seminário Ibero-americano Ciência-Tecnologia-Sociedade no Ensino das Ciências - VII Seminário Ibérico CTS no Ensino das Ciências*, 28-30 setembro 2012. Madrid: OEI. (ISBN: 978-84-7666-199-4). http://www.oei.es/seminariooctsm/PDF_automatico/F45textocompleto.pdf.

8. Soares, J., & Cabrita, I. (2010). Patterns and informatics tools in the elementary grade level. In M. M. F. Pinto & T. F. Kawasaki (Eds.), *Proceedings of the 34th Conference of the International Group for the Psychology of Mathematics Education*, 18-23 July 2010. Belo Horizonte: PME. (WOS: 000281699300081).

9. Pombo, L., & Moreira, A. (2012). What should be evaluated in blended learning courses? - a puzzle piece for the evaluation process. In A. Gumus (Coord.), *Proceedings of International Conference on Communication, Media, Technology and Design (ICCMTD-2012)*, 9-11 May 2011 (pp. 528-532). Istanbul: ICCMTD. <http://www.cmdconf.net/2012/Proceedings/Proceedings.pdf>.

10. Paixão, F., & Figueiredo, M. (2012). A Natureza da Ciência nos Programas do Ensino Secundário Português. In (s/Ed.), *Atas do VII Seminário Ibérico/III Seminário Iberoamericano CTS en la enseñanza de las Ciencias - Ciencia, Tecnología y Sociedad en el futuro de la enseñanza de las ciencias*. Madrid: OEI. (ISBN: 978-84-7666-199-4). http://www.oei.es/seminariooctsm/PDF_automatico/C6textocompleto.pdf.

9.4.6 New materials, devices, products and processes

9.4.7 Software, computer code and algorithms

Plataforma ArguQuest (<http://arguquest.web.ua.pt/>)

Software WebQDA (<https://www.webqda.com/>)

Courseware SRe <http://www.ludomedia.pt/sere/sabias.php>

EVTux <http://evtux.wordpress.com/>

9.4.8 Books, including single-authored works (including scholarly editions of oral or written texts and translations with introduction and commentary)

1. Martins, I. P., Veiga, M. L., Teixeira, F., Tenreiro-Vieira, C., Vieira, R. M., Rodrigues, A., Couceiro, F., & Sá, P. (2012). *A Complexidade do Corpo Humano*. Lisboa: Ministério da Educação e Ciência, Direção-Geral da Educação. (ISBN: 978-972-742-353-8). <http://www.dgicd.min-edu.pt/outrosprojetos/index.php?s=directorio&pid=94>
2. Cabrita, I., Almeida, J., Coelho, A., Malta, E., Vizinho, I., Almeida, J., Gaspar, J., Pinheiro, J., Nunes, M., Sousa, O., & Amaral, P. (2011). *Novos desafios para uma matemática criativa*. Aveiro: Universidade de Aveiro. (ISBN: 978-972-789-344-7).
3. Vieira, R. M., Tenreiro-Vieira, C., & Martins, I. P. (2011). *A educação em ciências com orientação CTS - Atividades para o ensino básico*. Porto: Areal Editores. (ISBN: 978-989-647-352-5). <http://www.areditores.pt/livros/ficha-de-produto/a-educacao-em-ciencias-com-orientacao-cts?id=11461721>
4. Vieira, R. M., Pereira, S., & Costa, A. S. (2011). *Explorando o Jardim da Ciência - luz, guião didático para professores*. Aveiro: Universidade de Aveiro, CIDTFF. (ISBN: 978-972-789-340-9).
5. Portugal, G., & Laevers, F. (2011). *Avaliação em educação pré-escolar - sistema de acompanhamento das crianças*. Porto: Porto Editora. (ISBN: 978-972-0-34574-5). <http://www.portoeditora.pt/produtos/ficha?id=6674003>
6. Neri de Souza, F., & Bezerra, A. C. S. (2012). *Ferramentas TIC na Escola: Aplicações Práticas*. Aveiro: Universidade de Aveiro, (ISBN: 978-989-97392-6-0). <http://www.bubok.pt>
7. Vale, I., Pimentel, T., Barbosa, A., Borralho, A., Barbosa, E., Cabrita, I., & Fonseca, L. (2011). *Padrões em Matemática - uma proposta didática no âmbito do novo programa para o Ensino Básico*. Lisboa: Texto Editores, Lda. (ISBN: 978-972-47-4588-6). http://www.texto.pt/catalogo/detalhes_produto.php?id=53830
8. Rebelo, D., Andrade, A., Bonito, J., & Marques, L. (2012). *Geologia. 10.º ano de escolaridade*. Díli: Ministério da Educação da República Democrática de Timor-Leste. (ISBN: 978-989-8547-15-6). <http://hdl.handle.net/10174/4389>
9. Rebelo, D., Andrade, A., Bonito, J., & Marques, L. (2012). *Geologia - Guia do Professor, 10º ano de escolaridade*. Díli: Ministério da Educação da República Democrática de Timor-Leste. (ISBN: 978-989-8547-02-6). <http://dspace.uevora.pt/rdpc/handle/10174/4386>
10. Vieira, R. M., Sá, P., & Gonçalves, N. (2011). *Explorando o Jardim da Ciência - forças e movimento, guião didático para professores*. Aveiro: Universidade de Aveiro, CIDTFF. (ISBN: 978-972-789-338-6).

9.4.9 Edited special issues of journals, with substantial research input on the part of the researcher

Ribeiro, J., Costa, A. P., Moreira, A. (Eds.). (2011). *Actas do I Encontro Nacional "Superar Barreiras com TIC: Políticas, Ideias e Práticas"*, Universidade de Aveiro, 17 e 18 de junho de 2011, 3(2). Número Especial. Aveiro: CIDTFF. (ISSN: 1647-3582).

Cabrita, I. & Costa, A. P. (Eds.) (2012). *Revista Indagatio 0Didatica. Actas do II Encontro Nacional "Matemática e criatividade no Pré-Escolar e no 1º CEB: Práticas de referência"*, Universidade de Aveiro, 29 e 30 de junho de 2012, 4(1). Número Especial. Aveiro: CIDTFF (ISSN: 1647-3582).

Nogueira, F., & Moreira, A. (Eds.) (2011). *Revista Indagatio Didatica. ENJIE2010*, 3(1). Número Especial. Aveiro: CIDTFF. (ISSN: 1647-3582). Bettencourt, T. (Ed.) (2012). *Revista Indagatio Didatica*, 4(2). Número Especial. Aveiro: CIDTFF (ISSN: 1647-3582).

9.4.10 Chapters in books, including contributions to conference proceedings, essays in collections

1. Bonito, J. (2012). *Do conhecimento profissional dos professores epistemologicamente diferenciado: um estudo sobre as metodologias de ensino das ciências*. In M. F. Patrício et al. (Orgs.), *Da Exclusão à Excelência: Caminhos Organizacionais para a Qualidade da Educação* (pp. 252-259). Montargil: Associação da Educação Pluridimensional e da Escola Cultural. (ISBN: 978-972-8223-39-7).
2. Figueiredo, A., Portugal, G., & Neto, C. (2012). *As interações das crianças com o meio envolvente durante o jogo livre*. In R. Mendes, J. Barreiros & O. Vasconcelos (Eds), *Estudos em desenvolvimento motor da criança V* (pp. 206-211). Coimbra: Escola Superior de Educação de Coimbra. (ISBN: 978-972-95072-9-8).
3. Loureiro, A., & Bettencourt, T. (2011). *Construção e partilha de conhecimento em ambientes virtuais - Influência das*

relações interpessoais. In P. Dias & A. Osório, (Eds.), *Aprendizagem (in)formal na web social* (pp. 193-220). Braga: Centro de Competência, Universidade do Minho. (ISBN: 978-972-98456-8-0).

4. Loureiro, M. J., & Souza, F. N. (2012). Presença de perguntas em mapas argumentativos: onde se cruzam argumentação e questionamento?. In L. A. Pereira & I. Cardoso (Eds.), *Reflexão sobre a escrita. O ensino de diferentes géneros de textos*. Aveiro: Universidade de Aveiro. (ISBN: 978-972-789-358-4).

5. Moreira, A., Pedro, L., & Nogueira, F. (2011). DidaktosOnLine: um ambiente virtual de aprendizagem baseado na Teoria da Flexibilidade Cognitiva. In M. Leão (Org.), *Tecnologias na educação: uma abordagem crítica para uma atuação prática* (pp. 133-148). Recife: UFRPE. (ISBN: 978-85-7946-083-8).

6. Portugal, G. (2011). No âmago da educação em creche - o primado das relações e a importância dos espaços. In Conselho Nacional de Educação (Ed.), *Educação da criança dos 0 aos 3 anos* (pp. 45-57). Lisboa: CNE. (ISBN 978-972-3860-67-2).

7. Portugal, G. (2011). Um perfil de competências para o cidadão pré-escolar. In A. Osório, & Maribel M. Pinto (Eds.), *Infância no digital* (pp. 39-54). Braga: Edição Arca Comum. (ISBN 978-978-96590-1-8).

8. Portugal, G. (2012). Avaliar o desenvolvimento e as aprendizagens das crianças - desafios e possibilidades. In M. J. Cardona & C. M. Guimarães (Org.), *Avaliação na educação de infância*. Viseu: Editora Psicossoma. (ISBN: 978-972-8994-42-6).

9. Santos, P., Feliciano, F., Bicho, A., Silva, C., Rodrigues, C., Portugal, G., Carvalho, L., Simões, R., Tavares, R., & Agra, S. (2012). O Método Video Home Training/Video Interaction Guidance em Intervenção Precoce: projeto de investigação-ação. In N. Ramos, E. Mendes, A. I. Silva & J. Porfírio (Orgs.), *Família, Desenvolvimento e Educação no Século XXI: olhares interdisciplinares* (pp. 63-71). Portalegre: Escola Superior de Educação do Instituto Politécnico de Portalegre. (ISBN: 978-989-96701-3-6) <http://tinyurl.com/a4w7mkc>

10. Nogueira, F., & Moreira, A. (2011). Pressupostos e potencialidades da plataforma DidaktosOnLine para a formação de professores. In A. Rodriguez & T. Pessoa (Eds.), *A vida nas escolas - problemas e casos para a formação de professores* (pp. 137-155). Coimbra: Imprensa da Universidade. (ISBN: 978-989-26-0127-4).

9.4.11 Creative writing (to the extent that it embodies research)

9.4.12 Encyclopedia entries (to the extent that they embody research)

9.4.13 Audio/visual and electronic/digital materials

9.4.14 Other categories, including web-based resources; video and audio recordings (to the extent that they embody research)

9.4.15 Performances and exhibitions to the extent that they embody research

Isabel Malaquias e Marta Condesso - "Questão de 'Ar'" - teatro levado à cena pela Fábrica - Centro Ciência Viva de Aveiro (2011) - várias exposições.

Isabel Malaquias, Décio Ruivo Martins, Manuel Almeida Valente, Manuel Queirós Lopes, Emília Vaz Gomes, Carlos Saraiva - Exposição "Baú da Física e Química" - Edifício da Capitania de Aveiro, (de 18.01.2008 a 10.02.2008)

9.4.16 Other research outputs

1. Coleção "Ensino Experimental das Ciências" - Lisboa, Ministério da Educação, Direcção Geral de Inovação e Desenvolvimento Curricular: 8 guiões didáticos para alunos e 8 para professores e um guião geral. <http://www.dgidc.min-edu.pt/outrosprojetos/index.php?s=directorio&pid=94>

2. Coleção "Explorando o Jardim da Ciência" - Aveiro, CIDTFF: 3 guiões didáticos para professores. <http://www.ua.pt/jardimdciencia/PageText.aspx?id=15104>

3. Coleção de manuais escolares e respetivos guias do professor para o ensino secundário de Timor-Leste - Díli, Ministério da Educação da República Democrática de Timor-Leste: Geologia (10.º ano, 2012); Matemática (10.º ano, 2012) e Tecnologias Multimédia (10.º ano, 2012). <http://www.ua.pt/esgtimor/>

4. Coleção de manuais escolares Porto Editora para o ensino secundário de Portugal: Ontem e Hoje - Física (11.º ano, 2008) - manual, guia do professor e caderno de atividades para a disciplina de "Física e Química A". <http://www.portoeditora.pt/produtos/ficha?id=197822>

5. Coleção de 8 livros de apoio ao ensino e aprendizagem de matemática (1.º e 2.º CEB) - Comissão Editorial da Universidade de Aveiro. <http://www.ua.pt/cidfff/lematic/PageText.aspx?id=15522>

6. Paixão, F., Jorge, F., Prata, J., Silveira, P., & Balau, S. (2008). Exposição Interactiva "Problemas com conta, Peso e Medida". Apoio à Exploração do Friso Histórico e Proposta de uma resolução manipulativa dos Problemas. Castelo

Branco: ESE Castelo Branco. (ISBN: 978-989-95831-0-8). <http://repositorio.ipcb.pt/handle/10400.11/635>

7. Paixão, F., Pereira, M. & Cachapuz, A. (2008). Corantes, Cor e Luz. Recursos Didáticos para um Projecto de orientação CTS. Castelo Branco: ESE Castelo Branco. (ISBN: 978-989-958831-1-5). <http://repositorio.ipcb.pt/handle/10400.11/441>

9.4.17 Organisation of scientific dissemination activities

1. 1st National Encounter "Superar barreiras com TIC: políticas, ideias e práticas", Department of Education, University of Aveiro, 17-18 June 2011.
2. The International Council for Educational Media and the International Symposium on Computers in Education - ICEM & SIIIE'2011, University of Aveiro, 27-30 September 2011.
3. Congresso Luso-Brasileiro de História das Ciências, Universidade de Coimbra, 26 a 29 outubro de 2011.
4. XXII Encontro Ibérico para o Ensino da Física, Universidade de Aveiro, 6 a 8 de setembro de 2012.
- VII Seminário Ibérico/III Seminário Ibero-Americano de CTS [Ciência-Tecnologia-Sociedade] no Ensino das Ciências, Madrid, setembro de 2012.
6. III Encontro Nacional de Educação Básica, Universidade de Aveiro, outubro de 2012.
7. II Seminario Euro-ibero-americano sobre Movilidad Virtual y construcción del Espacio Académico entre America Latina y el Caribe con la Unión Europea (ALCUE), Universidade de Aveiro, 5 e 6 de julho de 2011.
8. Curso de Formação Científica e Pedagógica de Voluntários/as de intervenção no Projeto Nacional de Educação pelos Pares, Escola Superior de Educação de Coimbra, 17 e 24 de outubro de 2012.
9. Seminário de Apresentação do III Minicongresso de Ciência por jovens. Exploratório de Coimbra - Centro Ciência Viva, 8 de fevereiro de 2012.

9.4.18 Research contracts with national or international entities

. Reestruturação Curricular do Ensino Secundário Geral em Timor-Leste <http://www.ua.pt/esgtimor/Default.aspx>
Projeto Centro Integrado de Educação em Ciências de Vila Nova da Barquinha (CIEC) <http://www.ciec.vnb.pt/investigacao/ciec-projeto-de-investigacao>
Avaliação do impacto do Programa de Formação em Ensino Experimental das Ciências: Um estudo de âmbito nacional <http://www.ua.pt/cidfff/educ/PageText.aspx?id=15654>

9.4.19 Projects funded in national and international competitive calls

1. Estudo do desenvolvimento académico na universidade através de abordagens inovadoras de ensino, avaliação e feedback (Refª: PTDC/CPE-CED/117516/2010)
2. TRACER - O uso das tecnologias da comunicação nas instituições de ensino superior público português (Refª: PTDC/CPE-CED/113368/2009 COMPETE:FCOMP-01-0124-FEDER-014394)
3. Promoção de Competências Relacionais em Intervenção Precoce pelo Método Video Home Training/Video Interaction Guidance (Refª: PTDC/CPE-CED/113484/2009)
4. Apoio ao Luto por Morte ou Perda de Expetativa de Afeto (Refª: 118175/FCG/20119)
5. A obra e correspondência científica de João Jacinto de Magalhães (1722-1790) (Refª: POCI/HCT/61184/2004)
6. Instrumentos científicos antigos no ensino e divulgação da Física (Refª: POCI/CED/60998/2004)
7. Estudo do ensino, aprendizagem e avaliação na universidade, usando as questões formuladas pelos alunos (Refª: POCI/CED/59336/2004)
8. Matemática e padrões no ensino básico: perspectivas e experiências curriculares de alunos e professores (Refª: PTDC/CED/69287/2006)
9. Princípios orientadores e ferramentas para desenvolver a mediação de professores de Ciências Físicas em sala de aula (Refª: PTDC/CED/66699/2006)
10. Optimização do Ensino das Ciências Experimentais (Refª: FSE/CED/83453/2008)

9.5. ORGANISATIONAL STRUCTURE AND OBJECTIVES OF THE RESEARCH GROUP 2015/2020

9.5.1 Structure of the Research Group

The RG2 focuses on the importance of science in society, public science and scientific literacy, aiming to research and develop innovative approaches to teaching/learning and to the public understanding of science. It has a strong emphasis on formal and non-formal Science, Technology and Society (STS) contexts and it aims at developing

perspectives of both critical citizenship and scientific culture in order to contribute to the improvement of social/educational policies for Sustainable Development.

The research evolves under the frames of: scientific literacy and public science, science teaching and learning innovative interface approaches to areas such as science and art and history of science, as well as environment and health education, sexuality, well-being and development. The targeted public spreads from pre-school and 1st, 2nd and 3rd cycles of Basic Education (BE), to secondary level and higher education, their actors and practices, while developing and enlarging focus on formal and non-formal STS contexts, namely to adults.

There are three functional laboratories (Labs) where research meets practitioners (like teachers and other professionals) and the public in general. Some projects are developed by researchers integrated in these structures and some result from doctoral projects and/ or other larger research projects. Nevertheless it is not intended that these structures integrate all the Group's researchers. The 3 Labs are:

- LEDUC and Science Garden. The Science Garden is a non-formal science education space aiming to promote science education to children between 4 and 12 years old through modules exploration and scientific challenges to promote visitors' curiosity, questioning and deepen involvement, therefore it also aims science popularization . It seeks to promote integration between formal and non-formal science education contexts, supporting teachers to plan school visits and, research and teacher education.
- LabDCT (Science and Technology and Didactics Lab) where several research, application and dissemination projects are developed along with doctoral projects. It is more involved with subjects concerning 3rd cycle of Basic Education, secondary and higher education. This Lab is located in the University of Trás-os-Montes e Alto Douro (Portugal).
- LEM@tic It aims at promoting knowledge and practices able to develop a (new) mathematical and technological culture in a society characterized by cultural diversity both within educational institutions and the general community [eg. (new) realities like those of Eastern Countries and Portuguese Speaking countries (PALOP)]. This Lab focuses specifically on designing, developing and evaluating the impact of innovative strategies and methodologies for initial, professional, continuous or postgraduate teacher training, , supported by laboratory approaches and innovative technological systems.

The three labs articulate with other CIDTFF laboratories, creating synergies of scientific development and community services, namely with the Digital Contents Lab (LCD).

The RG2 is also involved in the definition of international and national projects and partnerships, namely networks/practice communities, as well as learning and training programs, non-formal education contexts, face to face and virtual communities of teachers and researchers in science education, goals for science education and the Universities for Sustainable Development (UE4SD).

9.5.2 Objectives of the Research Group

The RG2 objectives, that rely on its keywords (formal and non-formal education; scientific literacy; science popularization; Education and Science interfaces), are:

- To deepen research on STS in science education (SE) for scientific literacy, i.e.:

To identify and define the desirable competences to teach science at the 1-2 cycles of basic education (BE).

To design and validate a teaching competence framework and teacher training programs involving contexts of non-formal education, virtual communities of teachers and researchers in basic SE.

To develop and evaluate SE resources, including digital and teaching strategies in formal and non-formal contexts, mainly to promote an integrated perspective of science education.

To evaluate the impact of CIEC in developing children's learning, teachers' professional development and in public involvement.

- To develop studies on teaching for creativity and on the development of mathematics competence in multicultural, formal & non-formal contexts; to evaluate the influence of curriculum management and development, viz. the tasks sequences (open and/or complex) and their approach, notably supported by technology, in this process.

- To search on the relationship between dragging and inductive-deductive reasoning in dynamic geometry environments (eg. GeoGebra); and the task design that promotes the conjecture/proof development in dynamic geometry environments, according to the mathematics Onto-semiotic focus.

- Studies on the teaching and learning of Physical Sciences, Mathematics, Engineering & Technology, from the secondary to tertiary education teaching practices, e.g., a) identify and characterize practices and theorize about their foundations in order to improve their quality;

b) develop guidelines for practices with innovative features enhancing student's engagement (e.g. use of technology, history of science and/or mathematics), to promote specific skills (e.g. critical thinking, questioning),-for teaching practices promoting the connection between Science, Technology and Society (e.g. using ethnomathematics), c) develop and validate appropriate tasks to enhance specific contents and skills.

-To study professional improvement through observation and reflection on teaching

- To study the use and development of didactic resources for teaching and/or learning Science, Mathematics, Engineering & Technology (aka STEM), namely to achieve theoretical and empirical evidence supporting proposals for specific actions by teachers, students and organizations.

- To search for new possibilities of the epistemic dialogue between art and science aiming at innovative approaches to the science curriculum, teaching and learning (this also in non-formal contexts) .

- To pursue current research in the field of history of science while broadening its scope. To deepen search on SE development through historical and comparative studies, the role of scientific instruments. -To characterize the development, relationship and communication between professional and amateur astronomers, studying its possible

impact on the production of knowledge and interaction with education.

- To improve knowledge on how industrial/technical schools contributed to Portugal early industrialization and how industrialization influenced the educational offer.
- To deepen the characterization of Nontraditional student's trajectories: M23; special needs; Post-Secondary courses and from Portuguese Speaking African Countries, namely contributing to implement a comprehensive and coherent lifelong learning university.
- To articulate research on science education and training with health, citizenship and human rights.

(RG-194-2772) Communication, media, and digital and virtual environments in education

9.1. IDENTIFICATION OF THE RESEARCH GROUP

9.1.1 Reference of the research group

RG-194-2772

9.1.2 Name of the Research Group in portuguese

Comunicação, media e ambientes digitais e virtuais na Educação

9.1.3 Name of the Research Group in English

Communication, media, and digital and virtual environments in education

9.1.4 Keyword(s)

Technology literacy

Distance education and learning

Personal learning environments

Multimedia resources

9.1.5 Existed in 2008/2012

No

9.1.6 Participating Institution(s) to which the Research Group belongs

Universidade de Aveiro (UA)

9.2. RESEARCHERS IN THE GROUP

9.2.1 List of Integrated Members / 3 nuclear CVs

Name	Principal Investigator Nuclear CV	
Ana Jorge Balula Pereira Dias	No	No
Ana Cristina de Castro Loureiro	No	No
António Augusto de Freitas Gonçalves Moreira	Yes	Yes
António Pedro Dias da Costa	No	No
Francislê Neri de Souza	No	No
Jaime Emanuel Moreira Ribeiro	No	No
Lúcia Maria Teixeira Pombo	No	Yes
Margarida Maria Solteiro Martins Pinheiro	No	No
Maria da Costa Potes Franco Barroso Santa-Clara Barbas	No	No

Maria Joao Loureiro	No	Yes
Maria José de Miranda Nazaré Loureiro	No	No
MARIA MANUEL DA SILVA NASCIMENTO	No	No
Mário Rui Domingues Ferreira da Cruz	No	No
Mário Almeida Rodrigues Talaia	No	No
Teresa Maria Bettencourt da Cruz	No	No

9.2.2 List of current PhD students

NAME

Anabela dos Santos Fernandes
José Alberto Braga Rodrigues
Ticiana de Astriogildo e Tréz
Diogo Gonzalez Casa Nova
Sannya Fernanda Nunes Rodrigues
Maria Isabel Mendonça Orega
Vânia Neves Marques Carlos
Carla Alexandra Morim Vale Lopes
Sérgio Hélder Fernandes Pinho
Luís Filipe de Almeida Neves
Margarida Morais Marques
Fatima Passos Kanitar
Leonel Seroto Rocha
Anna Cecilia Sobral Bezerra
Rosa Brígida Almeida de Quadros Fernandes
Rui Manuel Vieira Soares
Carlota Maria de Carvalho Lemos
Ana Maria Catarino do Couto Coelho Augusto
Euclides dos Santos Griné
Sérgio Paulo Heleno da Cruz
José Alexandre dos Santos Vaz Martins
Isabel Maria de Bastos Teixeira
Sónia Paula Vilela Raposo
Márcio Rafael Rodrigues dos Santos
carlos alberto almeida rodrigues
Paulo André Reis Duarte Branco
Rafael Rodrigues Relvão
Nuno Daniel Leite Lopes
Marta Andreia Almeida Carvalho da Silva
Rosana Muniz de Medeiros
Marlene de Oliveira Peres
Sandra Patrícia Mqrques Ribeiro
Elisabete Maria Rodrigues Peixoto
Paula Cristina Ribeiro Martins Mota

Beatriz de Jesus Rebelo
Fábio Mauro Garcês de Freitas
Ana Paula Pereira Rodrigues
Ana Margarida Oliveira
Rita Susana Gomes Gonçalves
Rogério Augusto Teixeira Barros

9.2.3 List of other researchers of the Research Group

9.5. ORGANISATIONAL STRUCTURE AND OBJECTIVES OF THE RESEARCH GROUP 2015/2020

9.5.1 Structure of the Research Group

As a trans-disciplinary area, ICT and its R&D Lab - Digital Contents Laboratory, DCL -, previously linked to RG2, established the ground for the new proposed group as ICT has become pervasive in the area of education & especially in teacher education. Therefore, & as a matter of internal policy, it is now time to move on to a deeper and more "independent" niche of research, given the bridges it always found with other more specific areas of research where ICT was perceived as an asset. Over the years it focused on developmental perspectives of critical citizenship & scientific culture, in (non) formal contexts grounded on Languages, Sciences, Math's, Values and Attitudes, Citizenship Education, Quality Assessment, Teaching and Learning (f2f and online), LMS, CMLS, PLE, Web 2.0 tools, Immersive Environments, ODL Management Tool Box solutions, Online Visualization Tools on the use of CT in Higher Education, local & distributed learning, teaching and research tools, C- and X-MOOC, SPOC, etc. Centered on educational issues, contexts and stakeholders, it followed the needs of each scientific domain & contextual time constraints, producing valuable and nationally & internationally recognized knowledge, in digital & traditional supports, including the conception (at technological level) of the Vila Nova da Barquinha school and the Syllabus, Multimedia Course Book and Teacher's Guide for the Secondary Schools of East Timor, also acting as consultant for the Ministry of Education, carrying out studies on the inception of computers in primary education in the district of Aveiro, the production of background studies to support the attribution of ICT skills levels for teachers, Total Cost of Benefit studies with Australian and Portuguese Ministerial bodies, etc. The organization of various national & international events at the level of ICT integration in Education was another area in which the researchers invested, along with the translation of the on-line version for Portuguese of the Open Journal System, opening the way to the flourishing of online journals in several institutions nationwide, including the ones published at UA &, in the case of our R&D Center, of Indagatio Didactica & Internet Open Latent Corpus, the 1st of which already a B1 WebQualis journal. The research group covers all formal educational levels - pre-primary to higher education; non-formal & informal lifelong learning - & other learning contexts, namely through the use of QRC and GIS. Concerns like the influence media exerts on people in general & their lives & ways of molding cognition & the construction & sharing of knowledge are also a priority in our studies, going from the conception to the implementation, testing, correction, retesting & validation of strategies, products & respective learning outcomes. Over the years, our studies have focused on the broader sense of the potential of ICT to enhance the education of students, teachers, parents & organizations. Novel areas & devices are always coming to light & our group has to be on the alert to keep apace.

Although research funding is getting ever more meager in the Humanities domain, we keep on finding ways to turn our research into marketable products, allowing us whatever margin of comfort we can get to keep our research work moving ahead. As referred elsewhere in this bid, "The RG2 researchers organized their work on the different aspects of research, training and implementation, towards a sustainable change of the educational quality and educators' competencies." The new RG will follow the same trend, but this time with a more ICT centered objective, taking advantage of (non) technological products it has started to develop, but never losing sight of the trans-disciplinary roots it laid its foundations from its outset, especially as it involves working with CPLP, Latin American & European countries we associate with.

9.5.2 Objectives of the Research Group

The RG3 objectives are:

- To conceive, design, prototype, implement, test, correct & evaluate digital & non digital resources for education & training at the various teaching and learning levels, for the various domains of human use, including SEN and different age groups and contexts (cultural, educational, edutainment, skill developing, problem solving, health, citizenship & attitudinal), both for free and proprietary aims and objectives;
- To analyse and identify novel means of using available and conceptual (still to be invented) ICT responses to unforeseen problems and issues, mainly in close connection with entrepreneurial incubators so as to prototype, test, produce and market value attracting products and solutions for educational and societal problems;
- To design ways of rendering more profitable, effective and less time-consuming school management technological solutions in association with companies with the potential to mass-produce and distribute the solutions provided by the

GI;

- To capture the "orientations" and needs of the region of Aveiro in terms of ICT responses to the development of the region, in close relationship with other organic units of the University of Aveiro, and especially with the support of UATEC, to reach priority groups, organisations and institutions;
- To study means to rethink ICT as a collaborative and networking solution for the schools in the Aveiro region, with induced impact in other regions of the country and their possible transposition to other CPLP (and even non CPLP countries) so as to encompass the diverse contexts and respective adaptations to less privileged social contexts of application;
- To publish findings produced in the group, increasing the visibility of the R&D Centre, the Department of Education and the University of Aveiro, contributing towards its image as a modern, state-of-the-art University, projecting its name internationally and therefore making it more attractive to students, researchers and teachers from other origins;
- To promote and captivate the influx of national and international young and senior researchers to the R&D produced in the RU, as a form of increasing the quality and quantity of its production in the domain of ICT for education;
- To set an example of good academic research practice, interfacing with the Psychology researchers of the Department in areas where cognition, psychology and its findings may be of mutual benefit for the outcomes of the Centre and the Department as a whole;
- To abide by a code of conduct in its impact on the education of first, second and third Bologna cycles, in such a way as to render the outcomes of its research not only participated by students of these different cycles, but also initiate them in the research craftsmanship and ethical principles of academic research endeavours, attitudes and values, from a humanistic perspective.
- To further internationalize the Doctoral Program on Multimedia in Education, opening it up to international students from Angola, Mozambique, Cape Verde and Brazil, improving and enlarging the cooperation protocols we already have with these Portuguese Speaking Countries, as well as Eastern Countries whose citizens have made their applications to the programme in the near past.
- To keep apace with the never ending innovations in ICT, taking advantage of their educational potential, even if not produced with educational goals.

(RG-194-2778) Policies, organizations, evaluation & leadership

9.1. IDENTIFICATION OF THE RESEARCH GROUP

9.1.1 Reference of the research group

RG-194-2778

9.1.2 Name of the Research Group in portuguese

Políticas, Organizações, Avaliação e Liderança

9.1.3 Name of the Research Group in English

Policies, organizations, evaluation & leadership

9.1.4 Keyword(s)

Educational Policies
School Improvement
Evaluation and assessment
Quality in Education

9.1.5 Existed in 2008/2012

Yes

9.1.6 Participating Institution(s) to which the Research Group belongs

Universidade de Aveiro (UA)

9.2. RESEARCHERS IN THE GROUP

9.2.1 List of Integrated Members / 3 nuclear CVs

Name	Principal Investigator	Nuclear CV
Ana Paula da Silva Cabral	No	No
Anabela Maria Sousa Pereira	No	No
António Augusto Neto Mendes	No	No
Dayse Cristine Dantas Brito Neri de Souza	No	No
Dora Maria Ramos Fonseca de Castro	No	No
Isabel Maria Catarino Huet e Silva	No	No
Jorge Adelino Rodrigues Costa	No	Yes
José Alexandre da Rocha Ventura Silva	Yes	Yes
Maria Gabriela Correia de Castro Portugal	No	Yes
Maria Manuela Bento Gonçalves	No	No
Patrícia Susana Pinho Castanheira	No	No

9.2.2 List of current PhD students

NAME

Inês Cristina Direito Baptista da Silva
Ana Carla Seabra Torres Pires
Lisneti Maria de Castro
Agar Nogueira Carreira Almeida
hugo miguel fernandes cruz
Helena Maria Arcanjo Coelho Martins
Rosa Alexandrina Moreira Simões
Diana da Silva Oliveira
Cláudia Raquel Cordeiro Figueiredo
Maria Constança de Castro Duarte de Barbosa Mendonça
Maria Pacheco Figueiredo
Joana Matias Antão
Helena Jorge Cardoso Teixeira
Rosilania Macedo da Silva
Luís Nuno Sancho Ribeiro
Carla Susana Nunes Ferreira Vieira
Margarida Maria de Jesus Pimentel Osório
Ana Catarina de Almeida Leite
Marta Susana Matos Oliveira
Maria Gabriela Castro Portugal Granja Bento
Ângelo Eduardo Rodrigues Ferreira
Juliana Tomás dos Santos
Carmen Lúcia Neves do Amaral Costa

9.2.3 List of other researchers of the Research Group

NAME

9.3. RESEARCH GROUP DESCRIPTION AND ACHIEVEMENTS FOR 2008/2012

9.3.1 Description of the Research Group

Name of Research Group 4 [RG3] (2008-2012): Quality Evaluation in Education

The focus of this RG is to study ways to promote the quality of several objects/phenomena: (A) Educational Policies and management, (B) Teaching and/or learning from Childhood to Higher Education (HE), (C) Research and Supervision, (D) Education and Health. These are studied through the lens of evaluation/assessment, as ways to understand phenomena & to contribute to the improvement of their quality. Several researchers are strongly engaged in international research partnerships with foreigner colleagues. Likewise, internationally widely known researchers as Janice Aurini (Waterloo University, Canada), Pam Sammons (Oxford University, UK), Candido Gomes (UC B, Brazil), Petros Pashiardis (Open University, Cyprus), Antonio Bolívar (University of Granada, Spain) or Mark Bray (Hong Kong University) worked together with researchers of this RG. Our team is aware of the need to invest in the international notoriety of our research. That is why we are so engaged in doing research & publishing in the international arena. For example, the Xplika project, on private tutoring, was the most authoritative & internationally known. Some of the aims listed below contemplate professionals' training/counseling activities in order to produce a more direct impact of research on the communities involved in those projects.

The aims of the RG are:

- To analyse from a critical point of view national scientific production & other information on school management & leadership, promoting its dissemination among the scientific & professional community
 - To develop systems of school principal performance evaluation
 - To research the links between stress & quality in what concerns teaching & non-teaching staff performance in schools
 - To pursue with the comparative analysis on the private tutoring market in five capital cities
 - To understand the reasons underlying the complex phenomenon occurring in Portugal, within the scope of recent legislation, on teacher evaluation
 - To evaluate educational projects (local, national and international) & digital learning resources & their impact on the articulation between teachers and researchers, teachers' professional development & students' competencies, using the potentialities of ICT
 - To evaluate potentialities & constraints of teachers' collaborative work in schools & to propose ways for its development
 - To enrich the research on educational intentionality, learning assessment & quality evaluation of teaching & learning, from Childhood to HE
 - To evaluate the impact of changes occurred on curriculum design & teaching practices within the recent challenges emerged in HE. Also to disseminate cases of good practices at both levels
 - To understand teachers' conceptions about tutoring in HE & to evaluate how tutorial activities are put into practice
 - To evaluate & monitor the use of ICT to improve the quality of teaching & learning in HE
 - To develop, implement & evaluate models & practices of staff development in HE (in Portugal & other European Eastern Countries)
 - To study, at an European level, ways of increasing virtual mobility among academic staff in HE
 - To understand, assess and monitor doctoral research quality in two dimensions: research process and research outputs
 - To promote practices and disseminate cases of good practice in research supervision namely in "face to face" and "on-line" contexts
 - To propose criteria to evaluate the quality of the research outputs taking on board national and international trends
 - To engage in training of informal caregivers of elderly people
 - To promote impact evaluation of the training of informal caregivers of elderly people.
- There is a strong focus on the design of evaluation frameworks, sustained in theoretical, normative and empirical evidences.

Members of the RG work through the Lab for the Evaluation of Educational Quality (LAQE) and the Policy and Educational Administration Lab (PAELab).

9.3.2 Main achievements

These main achievements are supported by publications & other activities that have been developed by the RG.

- A framework for the study of school leadership in Portugal identified formal, political & collegial models of school leadership as the most common in scientific production on this subject
- A comparative analysis of private tutoring in five capitals indicate that although many tutoring centers tend to replicate & strengthen what happens in regular schools, some present already their own educational project
- Results show many positive aspects of national projects conducted recently in Portugal (e.g. how they contributed to the improvement of teaching practices) but also some constrains (e.g. teachers' resistance to change when legislation is imposed without a period of discussion). Cases of good practices, as a result of these projects, were also characterized
- The process of self-evaluation in schools has been improved by a counseling partnership between researchers &

school professionals. However, difficulties have been found with respect to cultural differences (e.g. in terms of reflective attitudes, evidence-based practice).

The RG produced:

- Guidelines to improve collaborative work of science teachers in schools
- Didactic materials (developed & evaluated) for the improvement of learning in non-formal contexts (science for SEN) and in HE (in Physics for future Engineers & Nurses)
- A quality evaluation framework for the use of "Technology Enhanced Learning" in HE
- Reports with recommendations for the implementation of the Probation Period in Teacher Education in Portugal
- CPD courses & materials delivered to 400 HE teachers in Moldova & Ukraine: (a) Design of learning processes based on a student-centered approach, (b) Curriculum design, (c) Evaluation of quality teaching and learning, (d) ICT-enhanced learning and (e) Technologies of eLearning
- A Virtual Learning in Higher Education course, attended by 30 students from 5 different European countries, was delivered in a fully distance mode. Knowledge has been produced which may contribute to the extension of this innovative initiative
- A quality evaluation framework for:
 - research (processes & products);
 - the supervision process of PhD students;
- An on-line platform was created (<http://cms.ua.pt/RedeSIDEdu/>) & is being used & evaluated for supporting supervision processes of research activities
- Guidelines for the development of strategies to promote the welfare of students in HE & to the labor market
- The Portuguese version of the "Copenhagen Psychosocial Questionnaire"
- Techniques & instruments to measure stress and anxiety
- Strategic document for the future of Teachers' Probation Period in Portugal
- Theoretical frameworks, cases of good practices, guidelines & materials for Higher Education at the level of: Internal Quality Assurance of the teaching & learning process; curricular development; Students' Tutoring; staff development; integration of new students audiences (non-traditional adults students); virtual mobility
- Theoretical framework & guidelines for research supervision processes, namely through "face to face" & "on-line" environments
- Theoretical framework, cases of good practices & guidelines for the use of assessment & feedback to enhance learning from Childhood to HE
- Instruments for gathering data to evaluate Scientific Conferences, Educational Programs, Didactic Software, Didactic Interventions
- Guidelines & materials for teacher professional development in schools
- Didactic materials (developed & evaluated) for the improvement of learning in schools & non-formal science
- Empirical studies that show how ICT can improve learning in secondary education & HE.

The RG implemented:

- The "Office of Informal Caregiver Support of the Elderly Person", within a partnership with the Family Health Unit (USF) & development of a strategy to evaluate it
- Needs assessment of the informal caregivers of the elderly person in a USF.

9.4. RESEARCH GROUP OUTPUT 2008/2012

9.4.1 Publications in peer reviewed journals and/or other publications

1. Albuquerque, I., Lima, M. P., Figueiredo, C., & Matos, M. (2012). Subjective well-being structure: Confirmatory factor analysis in a Portuguese teachers' sample. *Social Indicators Research*, 105(3), 569-580. (ISSN: Print - 0303-8300; Online - 1573-0921).
2. Albuquerque, I., Lima, M. P., Matos, M., & Figueiredo, C. (2012). The interplay among levels of personality: The mediator effect of personal projects between the big five and subjective well-being. *The Journal of Happiness Studies*, 14 (1), 235-250. (ISSN: Print - 1389-4978; Online - 1573-7780).
3. Albuquerque, I., Lima, M., Matos, M., & Figueiredo, C. (2011). Personality and subjective well-being: what hides behind global analyses?. *Social Indicators Research*, 105(3), 447-460. (ISSN: 0303-8300).
4. Cardoso, A., & Costa, N. (2009). Uma perspectiva multidimensional na formação de professores para o ensino da física moderna e contemporânea [CD-ROM]. *Enseñanza de las Ciencias, Extra VIII Congreso Internacional sobre Investigación en Didáctica de las Ciencias*, 2738-2744. (ISSN: 0212-4521).
5. Direito, I., Pereira, A., & Duarte, A. (2012). Engineering Undergraduates' Perceptions of Soft Skills: Relations with Self-Efficacy and Learning Styles. *Procedia Social and Behavioral Sciences*, 55(5), 843-851. (ISSN: 1877-0428). (WOS: 000313019500102).
6. Duarte, A., Oliveira, I., Félix, H., Carrilho, D., Pereira, A., & Direito, I. (2011). Active Classrooms: Role-Playing Experience in Telecommunications Engineering Education. *International Journal of Engineering Education*, 27(3), 604-609. (ISSN: 0949-149X). (WOS: 000291434000017).
7. Loureiro, M. J., Pombo, L., & Moreira, A. (2012). The quality of peer assessment in a wiki-based online context: a qualitative study. *Educational Media International*, 49(2), 139-149. (ISSN: 0952-3987).
8. Marques, M., Loureiro, M. J., & Marques, L. (2009). Gestão curricular intencional numa comunidade de professores e investigadores. *Enseñanza de las Ciencias, Extra VIII Congreso Internacional sobre Investigación en Didáctica de las*

Ciencias, 3061-3066. (ISSN: 0212-4521).

9. Vagos, P., & Pereira, A. (2010). A proposal for evaluating cognition in assertiveness. *Psychological Assessment*, 22(3), 657-665. (ISSN: 1040-3590). (WOS: 000281588600018).

10. Ventura, A., & Jang, S. (2010). Private tutoring through the internet: globalization and offshoring. *Asia Pacific Education Review*, 11(1), 59-68. (WOS: 000287856500007).

9.4.2 Completed PhD theses

1. Azevedo, L. (2012). Avaliação das aprendizagens no Ensino Superior: estudo de um sistema de avaliação na Unidades Curriculares de Projeto de Simulação Empresarial. Tese de doutoramento em Didática e Formação, Universidade de Aveiro, Aveiro.
2. Cardoso, A. (2012). Avaliação do Desempenho Docente e o Professor Titular: Um estudo de caso em perspectiva organizacional. Tese de doutoramento em Ciências da Educação, Universidade de Aveiro, Aveiro.
3. Cruz, E. (2012). Da Avaliação do Impacte à Articulação da Investigação-Práticas: o caso da articulação na formação didáctica pós-graduada de professores de Ciências e desafios do futuro. Tese de doutoramento em Didática e Formação, Universidade de Aveiro, Aveiro.
4. Ferraz, L. (2011). Stress no Estágio Pedagógico: estudo comparativo entre Portugal e Brasil. Tese de doutoramento em Ciências da Educação, Universidade de Aveiro, Aveiro.
5. Freitas, C. (2012). Rastreio do cancro da mama no concelho de Aveiro: do estudo dos fatores determinantes da adesão às propostas educativas emergentes. Tese de doutoramento em Didática e Formação, Universidade de Aveiro, Aveiro.
6. Frota, A. (2011). Gestão Escolar e Culturas Docentes. O Público e o Privado em Análise. Tese de doutoramento em Ciências da Educação, Universidade de Aveiro, Aveiro.
7. Leal, R. (2011). Formando o cidadão desde o jardim-de-infância: o contributo das práticas de avaliação das aprendizagens dos educadores de infância em colaboração com a família. Tese de doutoramento em Didática e Formação, Ramo de Avaliação, Universidade de Aveiro, Aveiro.
8. Marques, M. (2012). Assessorias das direções de escolas públicas portuguesas. Tese de doutoramento em Ciências da Educação, Universidade de Aveiro, Aveiro.
9. Pinho, C. (2012). Qualidade em Saúde: Que trajetos de formação dos enfermeiros? Tese de doutoramento em Didática e Formação, Universidade de Aveiro, Aveiro.
10. Sá, J. (2012). Bullying nas escolas: prevenção e intervenção. Tese de doutoramento em Ciências da Educação, Universidade de Aveiro, Aveiro.

9.4.3 Patents and Prototypes or other research outputs

9.4.4 Books and book chapters of international circulation

1. Baptista, A. V., Santos, L., Bessa, J., & Tavares, J. (2010). The journey of non-traditional adult students at the University of Aveiro. In B. Merrill & J. González Monteagudo (Eds.), *Educational Journeys and Changing Lives. Adult Student Experiences* (vol. 1, pp. 64-75). Seville: Edición Digital@3. (ISBN: 978-84-693-1554-5).
2. Baptista, A.V., Huet, I., & Jenkins, A. (2011). Quality of Doctoral Supervision: Supervisors' conceptions of learning, supervision and students' profiles. In N. Jackson, L. Frick, C. Nygaard & N. Courtney (Eds.), *Postgraduate Education: Form and Function* (pp.43-58). Oxfordshire: Libri Publishing. (ISBN: 978 1 907471 26 1).
3. Casanova, D., Holmes, B., & Huet, I. (2009). Aiding Academics to move from knowledge management to knowledge creation: Conceptualisation of a Personal Academic Environment (PAE). In A. Méndez-Vilas, A. Solano Martín, J.A. Mesa González & J. Mesa González (Eds.), *Research, Reflections and Innovations in Integrating ICT in Education* (vol. 1, pp.481-486). Badajoz: FORMATEX. (ISBN of Collection: 978-84-692-1788-7; ISBN Vol. 1: 978-84-692-1789-4)
4. Costa, J. A., & Figueiredo, S. (2012). Liderança instrucional e currículo: uma análise focada nas escolas do ensino secundário. In M. Paraíso, R. Vilela & S. Sales (Orgs.), *Desafios Contemporâneos sobre Currículo e Escola Básica* (pp. 99-112). Curitiba: Editora CRV. (ISBN: 978-85-8042-454-6).
5. Huet, I., & Costa, N. (2010). Challenges for promoting teacher development in Higher Education: the Portuguese context. In L. Giovannini (Ed.), *Learning to Teach in Higher Education: Approaches and Case Studies in Europe* (pp. 83-94). CLUEB Editors.
6. Huet, I., Baptista, A.V., & Figueiredo, C. (2012). A Qualidade da investigação doutoral: o impacto da supervisão na perspetiva de supervisores e estudantes. In A. Noutel, E. Brutton, G. Pires, I. Huet (Eds.), *Ensino Superior: Saberes, Experiências, Desafios* (pp. 97-139). Paraíba: Editora UFRN. (ISBN: 978-85-7539-714-5).
7. Huet, I., Oliveira, J., Costa, N., & Estima de Oliveira, J. (2009). The effectiveness of curriculum maps of alignment in Higher Education. In C. Holtham & C. Claus Nygaard (Eds.), *Improving Students' Learning Outcomes* (pp. 275-287). Copenhagen: Business School Press. (ISBN: 978-87-630-0232-5).
8. Rutkauskienė, D., Gudoniene, D., Huet, I., Casanova, D., Baptista, A., Souza, D. Schreurs, J., & Karlsson, G.

(2011). Pedagogic traditions, skills and competences in higher education: comparative analysis. Kaunas: Kaunas University of Technology. (ISBN: 978-609-452-017-4).

http://uhdSPACE.uhasselt.be/dSPACE/bitstream/1942/13045/1/Comparative_analysis.pdf

9. Ventura, A., & Fante, C. (2011). *Bullying no ambiente escolar e virtual*. Belo Horizonte: Conexa. (ISBN: 978-856664300-8).

10. Ventura, A., Costa, J. A., & Santos, T. M. dos (2008). Leadership Development in Latin America. In J. Lumby, G. Crow & P. Pashiardis (Eds.), *International Handbook on the Preparation and Development of School Leaders* (Chap. 15). London: Routledge. (ISBN: 978-0-8058-6387-1).

9.4.5 Conference proceedings

1. Baptista, A.V. (2011). Non-traditional adult students: Reflecting about their characteristics and possible implications for Higher Education. *Procedia - Social and Behavioral Sciences*, 30, 752-756. (WOS:000300440500147).
2. Baptista, A.V. (2011). Challenges to doctoral research and supervision quality: A theoretical approach. *Procedia - Social and Behavioral Sciences*, 15, 3576-3581. (WOS:000298605104003).
3. Cabral, A.P., & Huet, I. (2011). Research in Higher Education: the role of teaching and student learning. *Procedia - Social and Behavioral Sciences*, 29, 91-97. (WOS: 000299993000012).
4. Castanheira, P., & Costa, J. A. (2011). In search of transformational leadership: a (Meta) analysis focused on the Portuguese reality. *Procedia - Social and Behavioral Sciences*, 15, 2012-2015. (WOS: 000298605102046).
5. Castanheira, P., & Costa, J.A. (2011). From a collegiality elected council to a director: the evolution of the Portuguese school management. *Procedia - Social and Behavioral Journal*, 15, 2007-2011. (WOS:000298605102045).
6. Costa, J. A., & Castanheira, P. (2011). School leadership in Portugal: the role of the director's intervention project. *Procedia - Social and Behavioral Sciences*, 29, 1320-1326. (WOS: 000299993000170).
7. Costa, J. A., Mendes, A. N., & Castanheira, P. (2011). The ELO Project - Educational Leadership Observatory. *Procedia - Social and Behavioral Science*, 29, 1855-1858. (WOS: 000299993000235).
8. Figueiredo, C., Huet, I., & Pinheiro, M. R. (2012). Construction of scientific knowledge and meaning: perceptions of Portuguese doctoral students. *Procedia - Social and Behavioral Sciences*, 69, 755-762. (WOS:000317131400094)
9. Huet, I., Figueiredo, C., Abreu, O., Oliveira, J.M., Costa, N., Rafael, J.A., & Ferreira, C. (2011). Linking a research dimension to an internal quality assurance system to enhance teaching and learning in higher education. *Procedia - Social and Behavioral Journal*, 29, 947-956. (WOS: 000299993000128)
10. Lopes, C., Loureiro, M. João, & Marques, L. (2011). ICT in the assessment of learning: a case study with teachers from the elementary and secondary education. In I. Candel Torres, L. Gómez Chova & A. López Martínez (Eds.), *4th International Conference of Education, Research and Innovations*, 14-16 november 2011 (pp. 23-26). Madrid: IATED. (ISBN: 978-84-615-3324-4). (WOS: 000317080000006).

9.4.6 New materials, devices, products and processes

1. <http://cms.ua.pt/RedeSIDEdu/>
2. http://www.dgae.min-edu.pt/web/14654/periodo_probatorio | <http://cms.ua.pt/saappp/?q=node/76>
3. Questionário Psicossocial de Copenhaga
4. Gabinete de Apoio ao Cuidador Informal em S. Romão (Trofa)
5. <http://www.teacamp.eu>

9.4.7 Software, computer code and algorithms

9.4.8 Books, including single-authored works (including scholarly editions of oral or written texts and translations with introduction and commentary)

1. Cabral, A. P., & Morais, J. (2012). *Trajectórias Académicas e Profissionais dos Diplomados - Lic. Pós-Bolonha*. V.N. Gaia: ISPGaya. (ISBN: 978-972-8182-13-7).
2. Martins, I., Candeias, I., & Costa, N. (2010). *Avaliação e regulação do desempenho profissional*. Coleção Situações de Formação. Aveiro: Universidade de Aveiro. (ISBN: 978-972-789-326-3).
3. Rua, M. (2011). *De Aluno A Enfermeiro. Desenvolvimento de Competências em Contexto de Ensino Clínico*. Loures: Editora Lusodidáctica.

9.4.9 Edited special issues of journals, with substantial research input on the part of the researcher

9.4.10 Chapters in books, including contributions to conference proceedings, essays in collections

1. Abreu, M., Abreu, W., Neri de Souza, D., & Torres, S. (2012). Cuidar do cuidador: uma revisão sistemática de instrumentos que avaliam a qualidade do relacionamento. In J. C. Carvalho et al. (Eds.), *Transferibilidade do conhecimento em enfermagem de família* (pp. 266-272). Porto: ESEP-UNIESEP. (ISBN 978-989-96103-6-1). <http://tinyurl.com/aoepza6>
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3. Casanova, D., Costa, N., Leal, R., & Oliveira, D. (2011). Curriculum development in virtual mobility educational contexts. In M. Tereseviciene, A. Volungeviciene, & E. Daukšiene (Eds.), *Virtual Mobility for Teachers and Students in Higher Education - Comparative research study on virtual mobility* (pp. 35-42). Kaunas: Vytauto Didziojo Universitetas. (ISBN: 978-9955-12-675-1). http://www.teacamp.eu/sites/default/files/Teacamp_book_final_final20110606.pdf
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10. Loureiro, M. J., Pombo, L., & Santos, C. (2009). Assessment as a strategy to promote online interactions. In L. Kadocsa & G. Gubán (Eds.), *MOTIVATE, Master Level Opportunities and Technological Inovation in Vocational Teacher Education* (pp. 25-37). Dunaújváros: Dunaújvárosi Főiskolai Kiadó. (ISBN: 978-963-9915-24-4).

9.4.11 Creative writing (to the extent that it embodies research)

9.4.12 Encyclopedia entries (to the extent that they embody research)

9.4.13 Audio/visual and electronic/digital materials

Production of 5 videos "Guião de Procedimentos de Cuidados ao Idoso Dependente" (procedures guide for the dependent old-age person) for the training of Informal old-age persons' caregivers of the Family Health Unit "Ao encontro da saúde" (seeking health) in the Parish of São Romão do Coronado - Trofa - Oporto.

9.4.14 Other categories, including web-based resources; video and audio recordings (to the extent that they embody research)

9.4.15 Performances and exhibitions to the extent that they embody research

9.4.16 Other research outputs

1. Cabral, A. P., Lousã, M., & Santos, J. D. (2010). *Guia do aluno bem sucedido*. V.N. Gaia: Edições ISPGaya. (ISBN: 978-972-8182-12-0).

2. Homes, B., Botelho-Ribeiro, L., Cunha da Silva, L., Huet, I., Ferreira, D., & Neves, J. (2008). *Ensino Inclusivo para Deficientes Visuais: Guia do Professor*. Guimarães: Editora Cidade Berço. (ISBN: 978-972-8598-94-5).
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4. Noutel, A., Brutton, E., Pires, G., & Huet, I. (Eds.). (2012). *Ensino Superior: Saberes, Experiências, Desafios*. Universidade Federal do Rio Grande do Norte: Editora Universitária. (ISBN: 978-85-7539-714-5).
5. Vieira, D., Ferreira, A., Fernandes, C., Magalhães, I., Ardions, I., Pinto, S., & Pereira, A. (Eds.). (2012). *Apoio psicológico no ensino superior: um olhar sobre o futuro*. II Congresso Nacional RESAPES-AP. Porto: Instituto Superior de Contabilidade e de Administração do Porto. (ISBN: 978-989-97851-0-6).
6. Neri de Souza, F., Moreira, A., Almeida, P., & Neri de Souza, D.. *Internet Latent Corpus Journal*, 1(1). (ISSN: 1647-7308).
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8. Granja, A., Rebelo, J., & Costa, N. (2010). *O papel da escola no apoio ao luto saudável de alunos adolescentes por morte de figura parental*. In H. Pereira, L. Branco, F. Simões, G. Esgalhado & R. Afonso (Eds.), *Educação para Saúde, Cidadania e Desenvolvimento Sustentado* (pp. 1217-1228). Covilhã: Departamento de Psicologia e Educação da Universidade da Beira Interior. (ISBN: 978-989-96996-0-1).
9. Huet, I. (2011). *Formação pedagógica de docentes no Ensino Superior: casos de boas práticas*. In A. Noutel (Ed.), *O Papel das Universidades para uma Europa do Conhecimento* (pp. 19-26). Lisboa: Fundação Minerva. (ISBN: 978-989-640-048-4).
10. Rodrigues, S., Vaz, C., & Loureiro, M^a João (2009). *Proposta de um instrumento de análise de software educativo - Avaliação do software educativo "Mundo da Criança"*. In P. Dias, A. Osório & B. Silva (Eds.), *Avaliação Online* (pp. 121-140). Braga: Universidade do Minho (ISBN: 978-972-98456-3-5).

9.4.17 Organisation of scientific dissemination activities

1. I ENJIE - Encontro de Jovens Investigadores em Educação: "desafios teóricos e metodológicos". Aveiro, Universidade de Aveiro, 8-9 de outubro de 2010.
2. Conferência O Fenómeno das Explicações na Europa. Aveiro, Departamento de Educação da Universidade de Aveiro, 4 de julho de 2011.
3. Seminar of the Programa Nacional de Acompanhamento, Supervisão e Avaliação da Implementação do Período Probatório de Professores dos Ensinos Básico e Secundário, addressed to all the Headmasters, Teachers and Mentors of the schools where th probation year is being implemented. Aveiro, Universidade de Aveiro, 24 october 2009.
4. 2nd ECIU Symposium "Higher Education and Employability". Aveiro, Universidade de Aveiro, 7-8 may 2009.
5. Seminário A Educação e o Ensino das Ciências/Física: pesquisas em curso no Brasil e em Portugal. Aveiro, Universidade de Aveiro, 18 de janeiro de 2011.
6. Partner Meeting and Training Seminar Teacamp - Teacher Virtual Campus: Research, Practice, Apply. Aveiro, Universidade de Aveiro, 12-14 may 2010.
7. Seminário 'Sistema de Garantia da Qualidade do Processo de Ensino e Aprendizagem - apresentação e discussão dos dados contidos nos relatórios dos discentes e do Bloco responsável (2009-2010). Aveiro, Universidade de Aveiro, 9 de maio de 2012.
8. Seminário 'Abandono Escolar no Ensino Superior: construção de critérios e indicadores para avaliar o fenómeno do abandono escolar'. Aveiro, Universidade de Aveiro, 27 de abril de 2012.
9. I Congresso Internacional de Inteligência Emocional e Educação, Investigar e intervir para mudar. Oliveira de Azeméis, Escola Básica Comendador Ângelo Azevedo, 6 e 7 de julho de 2012.
http://www.inteligenciaemocionalnaescola.org/index.php?option=com_content&view=article&id=77:congresso&catid=1:noticias-recentes&Itemid=50
10. VII Simpósio de Organização e Gestão Escolar - Escolas, Competição e Colaboração: Que perspetivas. Aveiro, Universidade de Aveiro, 26 e 27 de abril de 2012. <http://www.ua.pt/de/oge/>

9.4.18 Research contracts with national or international entities

Supervisão, Acompanhamento e Avaliação do Período Probatório de professores - protocolo celebrado entre o Ministério da Educação, através da DGRHE, e a Universidade de Aveiro, através do Laboratório de Avaliação da Qualidade Educativa (LAQE).

9.4.19 Projects funded in national and international competitive calls

1. ADDin - Avaliação de Desempenho Docente: compreendendo a sua complexidade para a tomada de decisões

fundamentadas na investigação (Refª: PTDC/CPE-CED/104786/2008)

2. Xplika Internacional - análise comparada do mercado das explicações em cinco cidades capitais (Refª: PTDC/CPE-CED/104674/2008)

3. ELO - Observatório de Liderança Educacional (Refª: PTDC/CPE-CED/108655/2008)

4. Conceptualização, Implementação e Avaliação de Estratégias Promotoras do Sucesso Escolar no Ensino Universitário nas Áreas de Ciências e Engenharias (Refª: POCI/C/04.01.02/090/0001/2006)

5. Cuidadores Informais do Idoso: do levantamento das necessidades ao desenvolvimento de estratégias de intervenção (Refª: PTDC/CPE-PEC/103858/2008)

6. TEACAMP - Teacher Virtual Campus: Research, Practice, Apply (Refª: 502102-LLP-1-2009-1-LT-ERASMUS-EVC)

7. Western-Eastern Teacher Education Network - WETEN (Refª: 145035-TEMPUS-2008-LT-JPTHN)

8. EuSTD-web - European Teachers Professional Development for Science Teaching in a Web-based Environment (Refª: 129455-CP-1-2006-1-PT-COMENIUS-C21)

9. Propostas Curriculares e escolas no Brasil e em Portugal: relações global-local (Refª: 4.1.3/CAPES/CPLP)

10. Contextualizar o saber para a melhoria dos resultados dos alunos (Refª: PTDC/CPE-CED/113768/2009)

9.5. ORGANISATIONAL STRUCTURE AND OBJECTIVES OF THE RESEARCH GROUP 2015/2020

9.5.1 Structure of the Research Group

Our main aim is to find, through the study of the complex phenomena associated with educational policies, organizations, evaluation and leadership, ways of understanding and improving students' academic and social outcomes, given their importance to human and social development. Research will therefore be centered on the axis between educational policies, their institutional implementation and actor's involvement. We will focus on the evaluation of recent policy developments in the field of education and their impacts on schools, students, teachers and school leaders.

Most of our researchers share several of those topics and will be working in a cooperative way in order to contribute strategically to the research. The driving force of this RG will be in international publication of the research with partnerships with colleagues of foreign top universities. This will be a way of learning together, sharing good practices and increasing notoriety in relation to the quality of the research made in Portugal.

Topic 1 - The analysis of the educational policies and of the logics and practices of the actors allows us to understand the complexity of the educational systems and schools. We are particularly interested in analyzing the construction of the school results, in order to unveil the policies that underlie them, but also the strategies that the schools and families develop in a political and social climate that is increasingly encouraging of competition and of selectivity. We aim at studying the transforming potential of the teaching identities and of the teaching job in itself, looking towards the social representations as a heuristic resource. The process of reconfiguration of the State also forces us to have a critical look into some of the "decentralization" dynamics that occur in Portugal. In the scope of this central topic we will also analyze the lack of articulation between teaching/training systems and the social system, considering two dimensions: a) individual professional pathways between both systems; b) social representations about school, teachers and teaching and learning.

Topic 2 - We intend to sustain our investment in the understanding and improvement of the organizational life. We will research school improvement related characteristics in order to improve quality of life of the school actors and schools social impact. Our work on this topic will help to understand organizational life and relationships between different stakeholders. We will focus our attention in school management at top and intermediate levels as an enabler variable of student's success.

Topic 3 - Evaluation and quality are strong topics of research among group members. We will strengthen our research in the fields of organizational evaluation, teacher performance evaluation, program evaluation and meta-evaluation. We also intend to develop psychological instruments to support research, intervention and evaluation in different educational contexts, focusing on quality of life, stress, development of the self, and personal skills that promote the educational and professional success. This research, driven by the evidence-based paradigm of assessment and intervention, will be orientated to different psychosocial actors in specific contexts of lifelong training.

Topic 4 - The relationships between school leadership, school improvement and school quality (both measured by the students' academic outcomes and by the students' social outcomes) have been a hot topic in the educational academic community for several years. The importance of the study of school leadership for the definition of policies that are aimed at school improvement is greatly emphasized by the results of studies that prove the critical role school leadership plays in establishing the school climate and the fostering of conditions for school capacity building, playing a key role in the creation of the conditions for the schools to make a difference in the students' outcomes.

9.5.2 Objectives of the Research Group

The RG objectives are:

- to study school leadership as a driver for school improvement and students' academic outcomes;
- to monitor and evaluate programs, projects and instruments in education and other contexts;
- to research school management as an instrument to school improvement and students results;
- to follow-up and evaluate the implementation of the "pedagogical guidelines for the work with children aged 0 to 3 years old", commissioned by the DGE/MEC and ISS/MSSS;
- to create an instrument for the following-up and evaluation of the educational process in pre-kindergarten schools;
- to participate in the revision and reformulation of the current curricular guidelines for kindergarten education;
- to study, with a group of Brazilian kindergarten teachers, ways for improvement of their pedagogical practices, using a supervise and collaborative process, focusing the practices of observation, evaluation and monitoring of the educational process;
- to analyze the lack of connexion between teaching/training systems and the social system;
- to develop psychological instruments to support research, intervention and evaluation in different educational contexts;
- to identify ways of diminishing fear in the context of teacher performance evaluation;
- to increase articulation between school self and external evaluation;
- to understand and meta-evaluate the impact of evaluation programs in several areas;
- to attract more young researchers, namely PhD students to develop research on the topics of the RG.

10. PROPOSED THEMATIC LINES

Reference Name	Principal Investigator
TL-194-47 Intercomprehension, sustainability and educational challenges	Maria Isabel Tavares Pinheiro Martins
TL-194-57 Evaluation of the social impact of educational research	Joaquim Bernardino de Oliveira Lopes

(TL-194-47) Intercomprehension, sustainability and educational challenges

10.1. IDENTIFICATION OF THE THEMATIC LINE

10.1.1 Reference of Thematic Line

TL-194-47

10.1.2 Name of the Thematic Line in Portuguese

Intercompreensão, Sustentabilidade e desafios educativos

10.1.3 Name of the Thematic Line in english

Intercomprehension, sustainability and educational challenges

10.1.4 Principal Investigator

Maria Isabel Tavares Pinheiro Martins

10.1.5

Scientific areas

Educational Sciences

10.2. DESCRIPTION OF THE THEMATIC LINE

10.2.1 Description of the Thematic Line

The research & development project of CIDTFF has been consolidating since its creation in 1994 by means of research projects, advanced training programs & outreach actions, performed by its teams, supported by funding attained on a

competitive national & international basis. This development was assisted by the: reinforcement and consolidation of the research teams; construction & participation in national & international networks; creation of RG on important themes within the international community. Continuously, CIDTFF's project has been integrating research themes whose results ground guidelines for policies & practices of educational intervention.

The research produced in CIDTFF has been evolving both in the theoretical perspective & in the study objects. From a focus on classroom specific problems (concerning teaching, learning and/or students' assessment) & on teacher education, there was a development towards broader transversal themes strongly concerned with social, cultural, economic & environmental issues. The broadening of the research interventional field, which has been following conceptions & research practices in other countries, has involved studies on sustainability, intercomprehension, interculturality, plurilingualism, formal & non-formal education, physical, social, & intergenerational well-being, among others. These studies produced relevant knowledge which was, however, better perceived by the directly focused educational actors. It is now important to understand how it is possible to transfer this knowledge to educational policy guidelines of diverse curriculum areas within basic, secondary and higher education, including teacher education, as well to the public in general.

The RU has also been evolving due to the creation of Labs that act as research settings to communities with strong connections to the developed projects. These Labs welcome researchers from other countries, who undergo research or training internships. They also allow students from basic and secondary schooling to experience situations of intellectual challenge & to develop skills & knowledge that enhance critical thinking, citizenship, literacy, attitudes and values, indispensable to human & social development.

We believe that research must consider the specificity of the reference frameworks as to allow the deepening of knowledge, which is why RG have been created. However, it is necessary to build a broader view on the research results that may surpass the "private domains" where they have been reached, within formal & non-formal educational contexts, reference frameworks to the conception & action practices that incorporate those results within an integrated perspective. This is the purpose of TS - Intercomprehension, Sustainability and educational challenges. It is not a sum up of the projects presented within the RG. It is a project which was outlined on knowledge constructed over several years, perceived in several products, which intends now to reach a higher level, useful in the national educational system and able of being transferred to international contexts to which CIDTFF is related to. In the plan to 2015-2020 the focus is placed on developing reference frameworks on educational theories & practices that support lifelong training/education, in different training contexts, on plural literacies and more sustainable lifestyles. Hence, the main goal is to understand how diversity contributes to educational development purposes (linguistic, communicative, personal, social, curricular, professional & institutional) and how theories & practices, derived from work concerning educational diversity, may influence individuals and the activities they develop in the spaces they circulate in. The development of these ideas is attained in projects centred on perspectives of critical citizenship, intercomprehension attitudes & scientific culture in formal and non-formal contexts, considering their importance on education to sustainable development (SD). Since that, within a global perspective of critical citizenship, intercomprehension & SD are domains that interconnect and complement each other, it is pertinent and innovative to understand how it is possible to transfer this knowledge, namely to educational actors' political agenda.

In recent years, intercomprehension & sustainability have become agenda themes at a global scale and also a strategic orientation in the intervention of public and private organizations. Education, at all levels of formal, non-formal & lifelong learning, is a key area for implementing actions to promote greater sustainability. Thus, it is important to assume a commitment of drawing properly contextualized actions that accomplish this purpose.

The TS Intercomprehension, Sustainability and educational challenges is a way to articulate research principles & results on Intercomprehension & Sustainability so as to build a framework able to mobilize decision-makers, educators & other stakeholders to the improvement of educational issues. Thus it is intended to:

(i) Perform meta-analytical studies on international research on intercomprehension & sustainability & identify convergence dimensions that may be capitalized to the area of curricular development, within the perspective of a new Global Development Agenda after 2015, target date already compromised to the achievement of the Millennium Development Goals.

(ii) Define a coherent reference framework to the curricular development of Sciences and Technology (S&T) & Social Sciences and Humanities (SS&H), supported in intercomprehension and sustainability principles. Authors of curricular programs have been working within disciplinary specific domains & have not been building continued partnerships that may allow to confront theoretical perspectives and practical strategies of curriculum enunciation.

(iii) Develop an interventional plan in Portuguese educational system at policy-making level that may enhance the definition of a National Curriculum for Basic and Secondary Education and the consequent adequacy of courses programs. All proposals will be empirically validated by international specialized boards & teachers of recognized professional competence. The need to intervene in the field of curricular development derives from the fact that the National Curriculum for Basic Education was cancelled 2011 and it was not replaced by other. Moreover, there is not a National Curriculum for Secondary Education and this level became part of compulsory education, set up until the age of 18.

(iv) Contribute actively to the construction of an emerging knowledge area, the "Sustainability Science", engaging in public discussion forums and in the co-edition of a scientific journal devoted to this theme, along with other Universities in the Ibero-American space.

(v) Invest on an international PhD in this knowledge area.

10.3. RESEARCH GROUPS INVOLVED IN THE THEMATIC LINE

Reference Name

RG-194-2730 Languages, theories and practices in education and supervision

RG-194-2731 Science, teaching, learning and society

RG-194-2772 Communication, media, and digital and virtual environments in education

RG-194-2778 Policies, organizations, evaluation & leadership

10.4. ORGANISATIONAL STRUCTURE AND OBJECTIVES OF THE THEMATIC LINE

10.4.1 Structure of the Thematic Line

This TS organization considers the following principles: to present reasoned and adequate proposals to the Portuguese context, according to international standards, aiming to achieve the stated objectives and to influence educational decision-makers and actors; to capitalize CIDTFF researchers' competences and knowledge, constructing motivated teams to intervene in the educational system and other spaces which may increase their educational purposes; to create synergies with other inter/national researchers so as to strengthen internal teams' competences in weaker domains.

Research will take place over the period of 2015-2020, according to phases adjustable to the objectives and to pertinent sociocultural and political conditions. The international agenda in Education will be considered. The contribution of Portugal to the DESD will be taken into account. Indeed, the creation of DESD (2005-2014) by the UN in 2002, introduced a call to all educators and researchers to contribute to this aim. The research results of CIDTFF can be perceived in doctoral theses, didactical and teaching resources, initial, continuing and postgraduate education degrees, articles in national and international journals, presentations and conferences at national and international congresses. At the end of the DESD it is important to assess Portugal's contribution and make decisions with national impact, within an international framework.

The general work plan is structured in research subgroups that will take care of the diverse stages and tasks defined according to the objectives. The researchers allocated to each task will be selected according to their profile, knowledge area and personal taste. Since it is an extended project, it is important to maintain all researchers' interest. Therefore, it will be adequate to keep adjusting the teams' composition.

The following interconnected phases are planned:

1. Systematization of internationally published studies on intercomprehension and sustainability and their meta-analysis in a perspective of curricular development.
2. Construction of a framework for designing a curricular plan of basic and secondary education, encompassing areas of S&T and SS&H. This implies organizing a diversified team that will define a set of transversal principles and that will, afterwards, be unfolded into area teams that will deepen, in their domain, those principles.
3. Extended auscultation of educational agents, at several decision and intervention levels, about the constructed proposals so as to facilitate their comprehension & acceptance.
4. Construction of a National Curriculum for Basic and Secondary Education considering, within a critical perspective, models undertaken at other countries of OCDE, mainly European ones. For the subject areas where there are not specialists at the CIDTFF, it is intended to invite researchers from other national and international institutions.
5. Design & validation of didactical resources for teachers & students, guided to the implementation of the new National Curriculum, in disciplinary areas considered crucial to the proposal clarification.
6. Elaboration of a matrix so as to organize teachers & educators' training degrees that support comprehension & implementation of the new curricular plan.
7. Organization of actions promoting a relationship between formal, non-formal & lifelong learning, guided by principles of intercomprehension & sustainability, considering exemplar cases, and elaboration of proposals to enlarge them.
8. Creation of communication channels with diverse publics about the ongoing work; these channels will promote debate & will enrich educational guidelines at a national level. In order to do so, Conferences & Seminars will be organized, reports will be written, partnerships with other scientific communities beyond education will be promoted, and groups for pressuring the organization of a national debate on education in Portugal will be constituted.

10.4.2 Objectives of the Thematic Line

The objectives set to 2015-2020 within this TS may be categorized in three main domains:

A. Knowledge production

- To analyze international studies and reports on intercomprehension and sustainability, particularly emphasizing DESD (2005-2014) and the results presented by international and supranational organizations. To systematize the Portuguese contribution in this field.
- To establish a Charter of transdisciplinary principles to the curricular organization of basic and secondary education bordered by intercomprehension and sustainability principles.
- To create enlarged discussion platforms in public opinion in order to systematize ways of conceiving formal education orientation in basic and secondary schooling, according to intercomprehension and sustainability principles coming from distinct sectors and with different sensitivities.
- To associate to other institutions, such as the UNESCO National Commission to the redaction of the National Report

on the Portuguese contribution to the DESD.

B. Educational intervention based on knowledge

- To conceive a National Curriculum for Basic and Secondary Education and the consequent adequacy of subjects programs according to a framework that integrates intercomprehension and sustainability principles.
- To construct didactical resources for teachers and students, validating them empirically, aiming to support the implementation of the new Education to Intercomprehension and Sustainability curricular plan.
- To systematize action lines for the organization of teachers training and specialization programs that may enable the implementation of the new curricular plan.
- To deepen knowledge and action practices in order to reinforce the relationship between formal, non-formal and lifelong learning according to principles of intercomprehension and sustainability integration.
- To develop interventional mechanisms near educational stakeholders and actors that may allow public discussion concerning the constructed proposals.

C. Knowledge dissemination

- To disseminate the produced knowledge to different publics (scientific community, educational stakeholders, opinion makers, citizens who are interested in educational matters), using adequate communication means for each public.
 - To organize an Ibero-American Congress on the theme "Intercomprehension and Sustainability to Education" directed to the academic community and other entities. CIDTFF meets the conditions that allow concretizing this Congress. Indeed, the "Associação Ibero-Americana Ciência-Tecnologia-Sociedade na Educação em Ciência" (Iberoamerican Association for STS in Science Education) (<http://aia-cts.web.ua.pt/>) is based at the University of Aveiro and it is chaired by an integrated member of CIDTFF; the MIRIADI Intercomprehension network, involving 12 partners from Latin America, is coordinated by an integrated member of RG1.
- The work developed by this TS will support the negotiation of an international PhD, based on the consolidation and broadening of the networks above mentioned (see 10.2).

(TL-194-57) Evaluation of the social impact of educational research

10.1. IDENTIFICATION OF THE THEMATIC LINE

10.1.1 Reference of Thematic Line

TL-194-57

10.1.2 Name of the Thematic Line in Portuguese

Avaliação do impacto social da investigação em educação

10.1.3 Name of the Thematic Line in english

Evaluation of the social impact of educational research

10.1.4 Principal Investigator

Joaquim Bernardino de Oliveira Lopes

10.1.5

Scientific areas

Educational Sciences

10.2. DESCRIPTION OF THE THEMATIC LINE

10.2.1 Description of the Thematic Line

The research produced in CIDTFF has been evolving towards more comprehensive overarching themes, strongly concerned with social, cultural, economic and environmental issues. The extension of the scope of research conducted in CIDTFF, accompanying conceptions and research practices underway in other countries, has involved studies on sustainability, intercomprehension/mutual understanding, interculturality, plurilingualism, integration of formal and non-formal education, among others.

The CIDTFF's research and development project has gradually been consolidating since its inception in 1994, through research projects, advanced educational programs and outreach carried out by its teams, many of them supported by

funding achieved on a competitive basis, at both national and international levels. For this development it was very important the strengthening and consolidation of research teams, building and participation in national and international networks, and creating research lines on themes with increasing attention in the international community.

The thematic strand Evaluation of the social impact of educational research aims at integrating research that is being developed in the CIDTFF on the scope of social impact of research in education, leveraging the synergies among research groups 1, 2 and 3, and compare it with international studies. This will allow producing comprehensive knowledge (theoretical and practical, although this sustained on theory) about the impact of educational research on society. Another objective is to evaluate the dissemination and intervention efforts done during the last decade in the CIDTFF and compare them with similar international experiences, so as to identify: (a) the domains where further intervention is needed; (b) the constraints that reduce the potential impact of the educational research (or the factors that promote it).

A problem of research in education, not unique to Portugal, is the lack of systematic and rigorous reviews of the results it produces in the various spheres of society, from formal and non-formal educational contexts (citizens' literacy in its multiple fields of competence: reading, mathematics, and science and technology) to the professional development of those who are directly or indirectly related to education. Besides, it is also important to carry out research on more specific aspects such as the design, validation and dissemination of educational resources and the best ways to use them.

This problem is particularly acute because of the emphasis, particularly in mass media, given to international studies (such as PISA or TIMSS) or information about national education systems and international comparisons (for example, the various rankings of schools and universities). Without questioning their relevance, first it is necessary to synthesize and properly contextualize the information these studies or rankings provide and, secondly, to frame the issues relating to evaluation at a level that is nearer to each institution (school, museum, science center) and group of individuals, or even each individual, since these are the main actors in educational systems.

Thus, we intend to organize the work in this thematic strand around specific projects that gather researchers with different experiences and knowledge mainly from research groups 1, 2 and 3 of CIDTFF and national and international partners (researchers, but also other stakeholders in the educational process) and we underline the following objectives:

- (a) To evaluate citizens' literacy (in its multiple fields of competence: reading, mathematics, and science and technology), the main sources of information that they use and the main ways to improve their competences;
- (b) To evaluate and propose improvements in the processes of professional development of agents in education processes (in formal and non-formal contexts);
- (c) To evaluate and propose improvements in the processes of dissemination and popularization of science and technology (in particular with a view to improving public understanding of science and increasing interest in choosing future careers related to science and technology);
- (d) To evaluate educational resources in a multidimensional approach, from conception development to use and dissemination, in particular in two main groups: (a) a sample of the most popular resources already in use; (b) a sample of developed resources based on research, either in use or not.

10.3. RESEARCH GROUPS INVOLVED IN THE THEMATIC LINE

Reference Name

RG-194-2730 Languages, theories and practices in education and supervision

RG-194-2731 Science, teaching, learning and society

RG-194-2772 Communication, media, and digital and virtual environments in education

10.4. ORGANISATIONAL STRUCTURE AND OBJECTIVES OF THE THEMATIC LINE

10.4.1 Structure of the Thematic Line

The organizational structure of this thematic strand is based on two previous choices: (a) the focus scale of the impact of educational research on society, (b) the form of teamwork to produce and disseminate knowledge.

Choice of the range of focus of the impact of educational research on society

Educational phenomena can be studied at different scales: macro scale (at the educational systems or country levels) and meso and micro scale (at the level of each institutions, individuals or group of individuals). We believe that the evaluation of the social impact of research in education at the level of the actors who are involved directly or indirectly in educational phenomena (institutions, individuals or groups of individuals) can be more understandable and effective for those actors. So the potential of influencing these actors in implementing research informed changes in the educational process is greater. Taking into account this choice, the production and dissemination of knowledge on the impact of educational research in society will be done in two levels: (a) at the level of the entities that are involved or that may benefit from this knowledge (e.g. schools, museums, science centers, parents' associations, student associations, cultural and/or local development, consumer associations, environmental associations), and (b) the level of groups of individuals and/or specific individuals in their various roles (e.g. teachers, students, consumers, citizens, professionals). This choice implies that the work of this thematic strand is based mainly on the three research groups listed above, as GI4 mainly focus on the macro scale of educational systems.

The institutions and individuals are simultaneously object of study and recipients of the knowledge produced, although we aim to disseminate knowledge to other similar entities. The reason for this is that changes that were proven feasible within a group will probably be more successfully disseminated among similar groups of people, because a well-documented example may be highly persuasive, more than any good theory.

Choice of the form of teamwork to produce and disseminate knowledge

A key way of organizing this thematic strand is through transversal projects based on work produced in each of the research groups (G1, G2, G3), that is, researchers from these groups will work together in R&D projects to advance the aims of this thematic strand.

Projects will aim mainly: (a) to produce and disseminate knowledge about the impact of educational research on society, (b) to map the conditions to improve and/or increase the impact of educational research on society.

The transversal projects are rooted in the production of different RG integrated in this thematic strand. Thus, the transversal topics to three research groups that make it possible to study the impact of educational research on society are the following: (a) Literacy (in its multiple fields of competence: reading, mathematics, and science and technology), (b) professional development of agents in the education process (in formal and non-formal contexts); (c) evaluate and propose improvements in the processes of dissemination and popularization of science and technology (in particular with a view to improving public understanding of science and increase interest in choosing future careers related to science and technology), (d) evaluate educational resources (in a multiple level approach, from development, to use and dissemination).

The research projects within each transversal topic (at least one per topic) will be done according to international standards incorporating: (a) work produced within each research group to which this thematic strand is connected, (b) work done from scratch in each transversal topic to give consistency and coherence to the work produced in CIDTFF under component (a) and incorporate international experience and research.

10.4.2 Objectives of the Thematic Line

The objectives set for 2015-2020 by this thematic strand can be classified into the following main areas.

A. To produce knowledge about the impact of educational research on society.

To analyze and summarize the results of studies and reports produced at international level on each of the topics specified in section 10.4.1. To systematize the Portuguese contribution in this domain.

To conduct empirical studies to evaluate the impact of educational research on each of the topics specified in section 10.4.1.

To collect, analyze and adapt (and/or develop and validate) systems for measuring the impact of educational research on society in each of the topics specified in section 10.4.1.

B. To identify the conditions to improve and/or increase the impact of educational research on society on each of the transversal topics specified in section 10.4.1, at least for some of the entities (e.g. schools, museums, science centers, parents' associations, students' associations, cultural and/or local development, consumer associations, environmental associations), or groups of individuals and/or specific individuals in their various roles (e.g. teachers, students, consumers, citizens, professionals).

C. To improve the impact of educational research on society.

To disseminate, both concisely and communicable to wider audiences, the results of studies and reports produced internationally on each transversal topic specified in section 10.4.1.

To train crucial actors on how to "read" and use the results of studies and reports produced internationally on each transversal topic specified in section 10.4.1, in the educational contexts in which they operate.

11. BUDGET FOR THE STRATEGIC PROGRAMME 2015/2020

11.1 The unit is a candidate for evaluation and intend to apply for funding?

Yes

11.2

Host institution's budget

Universidade de Aveiro (UA)

Description	2015	2016	2017	2018	2019	2020	TOTAL (€)
Human Resources	72792	73442	74092	74742	75392	76042	446502

Missions	40000	40000	40000	40000	40000	40000	240000
Consultants	3500	7000	3500	7000	3500	7000	31500
Service Procurement and Acquisitions	23000	23000	23000	23000	23000	23000	138000
Patent Registration	2500	1250	2500	1250	1250	0	8750
Adaptation of Buildings and Facilities	5000	5000	5000	7500	7500	7500	37500
Overheads	13793	14104	13793	13621	13138	13448	81897
Equipment	12207	11896	12207	6379	6862	6552	56103
TOTAL (€)	172792	175692	174092	173492	170642	173542	1040252

Overall budget

Description	2015	2016	2017	2018	2019	2020	TOTAL (€)
Human Resources	72792	73442	74092	74742	75392	76042	446502
Missions	40000	40000	40000	40000	40000	40000	240000
Consultants	3500	7000	3500	7000	3500	7000	31500
Service Procurement and Acquisitions	23000	23000	23000	23000	23000	23000	138000
Patent Registration	2500	1250	2500	1250	1250	0	8750
Adaptation of Buildings and Facilities	5000	5000	5000	7500	7500	7500	37500
Overheads	13793	14104	13793	13621	13138	13448	81897
Equipment	12207	11896	12207	6379	6862	6552	56103
TOTAL (€)	172792	175692	174092	173492	170642	173542	1040252

12. STRATEGIC PROGRAMME AND BUDGET RATIONALE 2015/2020

12.1 Overall budget rationale

The CIDTFF is a large RU, incorporating currently 85 integrated researchers and 18 collaborators. The growth of the RU in the last years is justified by the following reasons: consequence of a strong investment in training young researchers; attractiveness on researchers linked to other institutions; consequence of the increasingly complexity and transversality of knowledge in the field of Didactics, requiring the investment in diversity and complementarity of the team. This complementarity is not only reflected in researchers' scientific profiles (interests, research lines, projects, national and international networks ...), but also in terms of gender, age and affiliation (universities, polytechnics and other Institutions; e.g. Instituto Camões).

The design of the proposed budget reflects three clear strategic foci: human resources, missions, services and acquisitions. The choices translate the guidelines explained below.

A RU with such an amount and diversity of researchers needs a competent and dynamic secretariat, able to ensure a set of tasks with rigor, differentiated expertise, responsibility and commitment, creativity and cleverness. The investment in human resources (estimated value: 43% of the overall budget) reflects a strong commitment from the RU: to ensure a proactive rather than reactive response, able to interact with the host institution, with the governance structure of the RU, including the coordinator, the directors of the RGs, the TS, the Labs and projects, as well as with researchers; to establish scientific activity as a priority for these technicians, preparing both knowledge production and dissemination. Thus, the CIDTFF has a secretariat composed of administrative staff (supporting financial management measures together with the Centre's coordination, offices of project management in the UA and research funding agencies, particularly the FCT), and research technicians employed by the RU. Despite their youth, they are highly qualified and skilled, supporting researchers in their daily activity and creating favorable conditions to ensure that the mission of the RU is fully achieved. Thus, they: support the scientific management of the Centre and the activities of knowledge production, transfer and dissemination (e.g. text editing for publication in peer-reviewed journals, a priority for 2015-2020); promote communication and management of the image of the RU.

The commitment to missions stems from the importance of researcher participation in scientific meetings, especially international ones, for its potential to promote partnerships with foreign researchers. The estimated amount (23% of the overall budget) is justified, on one hand, by the number of researchers in the Centre, and, on the other hand, by mobility dynamics that have led to an increasing internationalization of research and publications. Visiting other central

or peripheral countries and other RUs is another way of promoting the integration in networks and research communities, which are often associated with prestigious journals, advanced training programmes and scientific associations.

Services and acquisitions (estimated value: 13% of the overall budget), including specialized translation, also competes for the purpose stated above. Without neglecting publication in Portuguese, there is an increasing commitment to publish in English, but also Spanish and French, privileging indexed journals with impact factor, which justifies the use of expert advice. The budget allocated to services and acquisition also relates to the development of databases for managing information and other contents generated in the CIDTFF, as well as multimedia resources (audio-visual, electronic/digital materials, including web-based resources, software, courseware, etc.), which support the strategy of knowledge transfer of the RU, in connection with the project of the RG Communication, media, and digital and virtual environments in Education (see Indicators 2015-2020).

The promotion of monitoring processes and external counseling requires the expertise of external consultants with international profile, as demonstrated by the contribution that has been given by the External Advisory Committee for the RU's trajectory. This justifies the budget endorsed to the heading Consultants.

Finally, as a RU does not work without basic logistical conditions, we foresee funds (although reduced, because CIDTFF has the technical qualified resources put at our disposal by the host institution - see 2) to:

- the adaptation of buildings and facilities, particularly the research Labs and the Science Garden, adjusting them to increasingly ambitious science activities, namely laboratorial, dissemination programs (in terms of target audience and number of visitors and initiatives per year);
- the acquisition of equipment, especially the one considered fundamental to the project of the new RG Communication, media, and digital and virtual environments in Education.

12.2 Human Resources rationale

A Centre with the characteristics of the CIDTFF (quantity and diversity of researchers, structure, including Labs and Science Garden, and dynamics, especially of knowledge transfer) requires a competent and dynamic secretariat, able to provide a range of tasks with precision, commitment, implementation capability and creativity.

The high investment in human resources (estimated value: 43% of the overall budget) reflects a commitment with a good work environment, guided by the need: i) to support the communication with the host institution and their structures (see 2), the DE, the coordinators of the RU and of the RG, the TS, Labs and projects, as well as researchers, including research fellows and visitors, and the target audiences; ii) to establish scientific activity as a priority, giving support to the team in activities aiming at both knowledge production and dissemination through diversified channels and languages.

As referred to before CIDTFF has a secretariat composed of administrative staff (supporting financial management measures, together with the Centre's coordination, offices of project management in the UA, and research funding agencies, in particular the FCT), and research technicians employed by the RU. These technicians, who have a very differentiated and specialized profile, support researchers in their daily activity, promoting favorable conditions for the fulfillment of the Centre's mission and for the enhancement of its members' activity. They are assigned to specific roles, according to individual profiles, well defined on recruitment (adjustable depending on needs and performance):

i) scientific management, giving support to: senior management and government bodies, mainly the coordinating committee and labs; principal investigator of the RG, TS and projects; the submission of reports, applications, projects and other documents; funding attraction from other agencies; management of databases, etc.;

ii) communication: internal and external dissemination of the CIDTFF's image and activities; communication management (internal and external), including the weekly Flashnews and the quarterly newsletter "Encontros"; management of platforms and sites;

iii) dissemination and knowledge transfer: support to laboratories and their programs with the community, aiding the production and dissemination of the laboratories' publications, resources and other didactic materials; support to summer schools, training programs and other events;

iv) knowledge production and dissemination through the more traditional routes: support to publication (text editing and proofreading; selection of journals; dissemination of calls; editorial support, including the online journal *Indagatio Didactica*).

It is worth mentioning that this strategic choice also reflects a CIDTFF's commitment to scientific employment.

12.3 Equipment rationale

The Centre's access to excellent technical resources and facilities of the host institution (see 2). However, the number of researchers (85), collaborators (18) and the laboratory and technological work puts some pressure in terms of equipment to ensure that the team have the necessary conditions to fulfill the Centre's mission.

From the individual point of view, the advantages of hardware and software portability for faster and more interactive communication are well known. Researchers who have access to portable equipment, with updated and licensed software (and specialized for processing information, such as WebQDA, NVivo, or SPSS), will see their capacity increased in situations where there is a need to respond with speed, efficiency and accuracy to the multiple requests of their scientific activity. The growth of the RU will put new requirements at this level, beyond the replacement of older

equipment.

The need to accommodate an increasing number of fellows, postdoctoral students and visitors from other RUs, whether national or international, also requires further attention in order to provide the best working conditions.

To justify the budget allocated to equipment, one should also refer to the production of multimedia educational and research resources, one of the fields for which the Centre has received recognition and in which will continue to invest, particularly within the new RG Communication, media, and digital and virtual environments in Education, which will require performative material for its members, particularly in the early years of the project.

Finally, the laboratory activities developed in the labs (see 6.4) require the use of technological equipment, whose acquisition and renewal must be ensured.

13. REVIEWERS PROPOSED BY THE R&D UNIT(S)

13.1

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Otto Benavides	California State University, USA	ottobenavides@gmail.com	Communication and Information Sciences, Educational Sciences