

FCT Fundação para a Ciência e a Tecnologia

MINISTÉRIO DA CIÊNCIA, TECNOLOGIA E ENSINO SUPERIOR



Concursos de Projectos de I&D

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Referência do projecto

Project reference

PEst-C/CED/UI0194/2011 (Lacrado a 29-04-2011 às 15:11)

1. Identificação do projecto

1. Project description



Área científica principal

Main Area

Ciências e Políticas da Educação

Área científica Secundária

Secondary area

(Vazio)

(Void)

Título do projecto (em português)

Project title (in portuguese)

Projecto Estratégico - UI 194 - 2011-2012

Título do projecto (em inglês)

Project title (in english)

Strategic Project - UI 194 - 2011-2012

Financiamento solicitado

Requested funding

492.684,00€

Palavra-chave 1

Educação e sociedade

Palavra-chave 2

Ensino /aprendizagem

Palavra-chave 3

Multimédia e multiculturalidade

Palavra-chave 4

Avaliação da qualidade

Data de início do projecto

Starting date

01-01-2011

Keyword 1

Education and society

Keyword 2

Teaching and learning

Keyword 3

Multimedia and multiculturality

Keyword 4

Quality evaluation

Duração do projecto em meses

Duration in months

24

2. Instituições envolvidas

2. Institutions and their roles



Instituição Proponente

Principal Contractor

Universidade de Aveiro (UA)Campus Universitário de Santiago
3810-193Aveiro**Unidade de Investigação**

Research Unit

Centro de Investigação em Didáctica e Tecnologia na Formação de Formadores (CIDTFF/UA)Campus Universitário de Santiago
3800-193Aveiro**3. Componente Científica**

3. Scientific Component

-

3.1. Sumário**3.1 Abstract****3.1.a Em português**

3.1.a In Portuguese

O CIDTFF é uma Unidade de Investigação da FCT, criada em 1994, localizada no Departamento de Educação (DE) da Universidade de Aveiro (UA). Integra membros do DE e de outros Departamentos da UA e de outras instituições de ensino superior portuguesas. Nas quatro avaliações internacionais realizadas, o Centro obteve a classificação Excelente, segundo critérios da FCT. O principal referencial subjacente à sua criação foi a necessidade de explorar interfaces da formação de professores e supervisão com a didáctica e tecnologia específicas (Física, Química, Inglês, Português, ...), afirmando-se como uma das poucas unidades de investigação portuguesas desenvolvendo um tal quadro conceptual. Diversos desafios (a vários níveis) impulsionados por investigação interna e externa, ditaram um investimento fundamentado e mais aprofundado dos objectivos de investigação perseguidos, confirmados posteriormente [1;3;10]. Em 2003, o alvo da investigação foi alargado, de forma a incluir áreas mais integradoras, como Avaliação da Qualidade, Educação em Ciências e Sociedade, Questões Interculturais, Serviços de Saúde e, mais tarde, Tecnologias Multimédia. Numa sociedade e economia baseadas no conhecimento, o CIDTFF está comprometido com a promoção e consolidação de projectos dinâmicos de investigação na vanguarda do conhecimento. Assim, passámos de orientações mais focadas em problemas e contextos educativos de sala de aula, onde as didácticas disciplinares e a formação de professores eram a principal preocupação [15; 16; 21; 24], para o estudo de temáticas mais alargadas de assuntos transdisciplinares e interculturais [4; 5; 6; 7; 19; 20; 23; 26; 27; 28; 29; 30]. Este movimento implicou uma maior articulação com os diferentes contextos formativos - formal, não formal e informal. Desta forma, o público em análise foi alargado para além do contexto de ensino secundário, nomeadamente, para o nível do ensino superior. Os temas educacionais em estudo vão, agora, desde o jardim-de-infância até ao ensino superior, de forma a compreender melhor e mais aprofundadamente como os problemas educacionais que emergem num sector podem influenciar e afectar outros, numa rede global de interacção. Ao mesmo tempo, a investigação foi alargada a outros formadores e educadores, nomeadamente do sector da saúde [12; 22]. Deste modo, a investigação em curso, numa lógica de cidadania e sustentabilidade, encontra-se na confluência de literacias múltiplas, temas disciplinares, novos paradigmas educativos e novas ferramentas tecnológicas. Está imersa em novos contextos, públicos e redes, motivada por desafios da actual sociedade global, implicando uma avaliação contínua como forma de alcançar a qualidade. Neste contexto, a política de gestão da unidade de investigação assenta em 6 princípios estratégicos baseados na assunção de riscos e numa cultura de apoio mútuo: ênfase na internacionalização; equilíbrio entre investigação e desenvolvimento; construção articulada de conhecimento com a sua transposição para a sociedade e a comunidade educativa; linhas de investigação que cruzam áreas disciplinares; consideração de novos contextos investigativos, incluindo, por exemplo, ambientes virtuais e ferramentas da Web 2.0; apoio a jovens investigadores e trabalho em rede e parcerias como princípios operacionais privilegiados.

Os principais eixos de acção dos projectos de investigação são:

- Concepção e aprofundamento dos quadros teóricos em assuntos educacionais (público: investigadores e educadores)
- Transferência de conhecimento (resultados e metodologias) para contextos educativos formais, não formais e informais (público: educadores e políticos)
- Produção e disseminação de recursos didácticos, modelos e estratégias formativas (público: educadores e políticos)
- Concepção e desenvolvimento de produtos/recursos/ferramentas para o desenvolvimento da própria investigação científica (público: outros investigadores)
- Cooperação nacional e internacional para o desenvolvimento de práticas formativas e sistemas educativos de todos os níveis (público: stakeholders regionais, nacionais e de países em desenvolvimento)
- Melhoria da qualidade de diferentes contextos, em particular, de políticas educativas, de concepções e práticas de professores, de supervisão da formação pós-graduada, de educação e saúde (público: instituições educacionais, decisores políticos, educadores e gestores de contextos de formação).

As estratégias para alcançar estas finalidades são: criação de redes de investigação focadas em temas particulares, que irá facilitar a partilha de visões complementares geradas por contextos específicos; definição de projectos de investigação a serem desenvolvidos em áreas e temas de interesse transnacional; criação de cursos de pós-graduação que possam atrair jovens investigadores internacionais. O CIDTFF conta com 67 doutorados e 86 não doutorados (71 bolsiros de doutoramento), integrados em 3 linhas de investigação (anexo) e em 7 laboratórios de investigação (anexo).

3.1.b Em inglês

3.1.b In English

The Research Centre for Didactics and Technology in Teacher Education (CIDTFF) is a FCT (Foundation for the Science and Technology/Ministry of Science) research unit created in 1994, located at the Department of Education (DE) of the University of Aveiro (UA). The Centre integrates mainly members from DE, but also from other UA departments, as well as other Higher Education national institutions. In all the 4 international evaluations, it was classified as Excellent, following FCT criteria.

The main rationale underlying its creation was the need to examine the interface of teacher education and supervision with didactics and technology of specific subject areas (Physics, Chemistry, English, Portuguese...). It is one of the few research units operating within such a framework in Portugal.

Different challenges (at several levels) dictated by internal and external research, advised a reasoned and deeper investment in the

research goals framed, later confirmed [1; 3; 10].

So, during 2003, the research range was widened in order to include more integrative areas such as Quality Evaluation, Science Education and Society, Intercultural issues, Health Services, and afterwards, Multimedia Technologies. In a knowledge-based economy and society, CIDTFF is committed with the promotion and consolidation of dynamic research projects at the cutting edge of knowledge.

Thus, we moved from more focused orientations on educative classroom problems and contexts, where disciplinary didactics and teacher training were the main concern [15; 16; 21; 24] to study larger trans-disciplinary and intercultural thematic issues [4; 5; 6; 7; 19; 20; 23; 26; 27; 28; 29; 30]. This movement implied a better articulation within the present different formative contexts - formal, non formal and informal. This way, the public under study enlarged and we moved beyond the secondary classrooms context, namely to the higher education level. The educational themes under study range from kindergarten to higher education in order to deepen and better realise how educative problems that emerge from a sector may influence and affect the other ones, in a global interaction net. At the same time, research was enlarged and focused on other trainers and educators, namely from the health sector [12; 22].

Thus, the ongoing research, in a citizenship and sustainability logic, lies at the confluence of multiple literacies, disciplinary issues, new educational paradigms, and new technological tools. It is immersed in new contexts, publics and nets, due to the challenges of the present global society, implying a continuous evaluation as a means of attaining quality.

In this context, the research unit management policy relies on 6 strategic principles based on a risk taking and mutual support culture: emphasis on internationalisation; a balance between research and development, articulated knowledge construction with its transposition to society and educational community; research lines crossing disciplinary areas; consideration of new research contexts, including, for example, virtual worlds and Web 2.0 tools; support to young researchers; and networking and partnerships as privileged operational principles.

The main action axes of the research projects are:

- Conception and deepening of theoretical frameworks on educational issues (addressees: researchers and educators)
- Knowledge transfer (results and methodologies) for formal, non formal and informal educative contexts (addressees: educators and politicians)
- Production and dissemination of didactical resources, models and formative strategies (addressees: educators and politicians)
- Conception and development of products/resources/tools for development of scientific research itself (addressees: other researchers)
- National and international cooperation for development of formative practices and educative systems at all levels (addressees: stakeholders from regional, national and developing countries)
- Improving the quality of different contexts, in particular, educational policies, concepts and practices of teachers, supervision of postgraduate training, education and health (addressees: educational institutions, policy makers, educators and managers of training contexts).

The strategies to achieve this goal are among others: building up of research networks according to some particular subjects, which will facilitate the pooling of complementary visions generated by specific contexts; the definition of research projects to be developed on subjects and themes of transnational interest; the creation of post-graduation courses which could attract international young researchers.

At present CIDTFF counts with 67 PhD and 86 non PhD (71 doctoral fellowships) that are integrated in 3 research lines (Education, Supervision and Development; Education, Teaching/ Learning and Society; Quality Evaluation in Education – see Annex) and 7 fully equipped research laboratories (Annex).

3.2. Descrição Técnica

3.2 Technical Description

3.2.2. Plano e Métodos

3.2.2. Plan and Methods

CIDTFF has been taking its position in educational research in Portugal and also in other countries, particularly through partnerships with other research groups and networks. The classification "Excellent" reached in the four international evaluations shows its responsibility in the educational field. Throughout the years the number of integrated doctorates has risen and new research themes have come up. Nowadays, CIDTFF counts with 67 PhD and 86 non PhD (71 doctoral fellowships) and it is organized in 3 research lines (attached scheme), which are developed in 7 fully equipped research laboratories (the first 3 are transdisciplinary): LAQE (Evaluation of Educational Quality Lab); LCD (Lab of Digital Contents – Digital Contents Lab); UTIS (Transdisciplinary Unit of Research on Supervision); LALE (Open Lab for Foreign Language Learning); LEIP (Lab for Education in Portuguese Language); LEUC (Open Lab for Science Education, which includes the "Science Garden" open space); and LEM@TIC (Open Lab for Mathematics Education) (annex).

Educational research is a social value, which allows understanding the problems of the community and of educational contexts, the factors inherent to them and the strategies to overcome them. Teacher training models and practices based on research are crucial for the development of innovative interventions in the educational field. It is fundamental to foresee the role of didactics/teaching, learning and evaluation methodologies and multimedia technologies in order to answer the new challenges of today's societies, originated from characteristics of particular contexts. Within these guidelines, CIDTFF equates its intervention, defining action principles, aims and strategies towards three domains: (i) international perspective on educational research; (ii) way to improve doctoral training, essential to economic growth; (iii) to increase the quality of intervention in specific fields at national and international levels.

For the biennium 2011-2012 the Research Centre aims to continue the study of themes pertinent for the scientific knowledge progress and to proceed with the internationalisation policy. For these it is expected (see Expected output indicators - Note – concerning masters degree we only consider research masters):

- papers in foreign peer reviewed journals;
- book/book chapters edition, authoring and/or reviews;
- papers in peer reviewed proceedings;
- project reports;
- participation as invited speakers in scientific events;
- oral presentations in scientific events;
- participation in scientific committees of journals and in scientific events;
- conferences organisation;
- projects and networks;

- consultants of projects;
- stays of foreign researchers coming from different countries;
- visits of CIDTFF's researchers to other countries.

Support to young researchers: post-doctoral studies and PhD theses.

Attraction of young researchers: 3rd Cycle Doctoral Programmes; 2nd Cycle Masters Degree Programmes; Integration of graduation students into Research Grants

Foreign partnerships:

- 3rd cycle Doctoral Programmes with Mozambique and Cape Verde
- Curricular redefinition of East-Timor general secondary education and support to East-Timor Ministry of Education to implement the new curricula and the teacher training programmes.

National partnerships:

- With the Ministry of Education - to participate in and coordinate specific programmes concerning teacher education and innovative teaching perspectives: Business Venture (patenting and merchandising of didactics resources produced in the CIDTFF, namely courseware and experimental sciences kits); Redefinition of national learning outcomes for basic and secondary education (Metas de Aprendizagem); Consulting on textbooks.
- With Municipal School of Vila Nova da Barquinha - to develop the conceptualisation project of primary science education (PhD in course)

Representation of CIDTFF members in:

- Aveiro City Council of Education
- Evaluation Committees of the FCT (scholarships, projects), Integrated Actions of CRUP (Portuguese National Universities Council)
- General Council of several elementary and secondary schools

Own editorial line:

*"Cadernos Didáticos": to bridge the gap between research and teacher education, to promote teachers professional growth; didactic resources for teachers and students within the scope of the National Teacher Education Programmes

*Periodical publication of the electronic/online newsletter 'Encontros' and of the electronic journal 'Indagatio'

In this context, the unit management policy relies on 3 basic principles: the need to create capacity for change and innovation, quality assurance and "healthy" relationships among the members in a democratic functioning.

These principles correspond to 11 main objectives:

- To develop research concerning the construction of new theoretical frameworks on Education (Kindergarten, Primary, Secondary, higher education levels and Life Long Learning programme), training and supervision in formal, non formal and informal contexts
- To conceive, implement, monitor and assess studies related to innovative teaching, training and supervision methodologies
- To privilege the construction of research products, namely of diversified resources which may support the teaching, training and supervision, and to assess the effects of their use
- To conceive, implement and assess training programmes, fostering the articulation research/training/innovation, in graduate/ post-graduate courses and in action-research projects involving diversified audiences
- To foster a strong articulation between research carried out in CIDTFF and intra- and inter-institutional doctoral programmes
- To promote the training of young researchers
- To foster critical viewpoints based on research about the education and training realities, as well as on the socio-cultural and historical contexts of the country
- To contribute with concrete research-based proposals for the definition of education and educational research policies
- To disseminate research carried out in (national and international) educational and scientific communities
- To foster the collaboration and exchange with other national and international research units, aiming the internationalisation of research and the promotion of new synergies
- To endorse the establishment of partnerships with teaching and training institutions, as well as others, to develop research and intervention projects in the areas CIDTFF works on.

To reach these objectives several projects are conceived concerning fundamental and applied research for distinct publics (researchers, educators, politicians, stakeholders) and summarised as follow:

- Conception and deepening of theoretical frameworks on educational issues
- Knowledge transfer (results and methodologies) through formal, non formal and informal educative contexts
- Production and dissemination of didactical resources, models and formative strategies
- Conception and development of products/resources/tools for development of scientific research itself
- National and international cooperation for the development of formative practices and educative systems at all levels
- Improving the quality of different contexts, in particular, educational policies, teachers' conceptions and practices, supervision of postgraduate training, education and health
- Evaluation and understanding of the impact of national and local policies concerning innovation in the educational field.

The expertise of CIDTFF members and the achieved results, in particular in the last triennium, constitute a solid framework for the projects presented here. One can emphasise some previous publications of CIDTFF members [1; 2; 3; 4; 5; 6; 7; 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 20; 21; 22; 23; 24; 25; 26; 27; 28; 29; 30]

Articulations among research lines

Although the CIDTFF is organized in three main lines/groups, there are projects which require a multi-referential approach including rationales of more than one group. These articulations potentiate synergies among the different lines, concerning the rationales of more than one research line, and the expertise of different members. For example, this is the case of a project involving the constitution of an online research community of practice with postgraduate students and supervisors, intending to develop knowledge about supervision (L1) but which uses evaluation as a way to promote its quality (L3). Another project aiming to develop innovative teaching/learning strategies (L2) aligns them with proper learning assessment methodologies (L3).

Methodological details

The methodological design follows qualitative, quantitative approach and mixed methodologies (namely, action-research; case study; inquiry) aiming for the gathering and interpretation of data. Concerning the nature of research questions it involves descriptive, explanatory, interventional and comparative studies. Data collection is undertaken using several methods (observation; interviews; focus groups; questionnaires; portfolios; diaries) and diverse instruments (e.g., questionnaires; interviews; narratives; observation; usability tests; focus groups). Several data analysis methods are being used (e.g., meta-analysis; statistical, documentary, discourse, interactional and content analysis).

There is also a concern to validate the methodological and evaluation frameworks by discussing them with international experts.

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3.2.3. Planeamento de grupos e linhas

3.2.3. group planning

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Grupos e linhas

Groups

Nome do grupo ou linha	Data de início	Data de fim	Duração
Group name	Start date	End date	Duration
Education, Supervision and Development	01-01-2011	31-12-2012	24

Planeamento do grupo ou linha

Group planning

This line focuses on educational, professional and institutional development. Framed within the LLP and socio-constructivist approaches, in an international environment, it explores formal and non-formal contexts and their relationships, bearing in mind the diversity and dynamics of contemporary societies and the potentialities of ICT and taking into account the role that educational research may have in social innovation. The research is set by 3 axes: working within broader partnerships, seen as epistemological spaces; transferring research to educational contexts; producing and disseminating materials and guidelines on educational, training and research policies.

Aims:

Working within broader partnerships

-Within European Network Redinter and training platform Galapro and taking into account the European Language Policies: to evaluate good practices/materials of training on intercomprehension (IC); to put into action IC virtual communities and evaluate their contribution to the development of linguistic and professional competences; to define strategies for dissemination, articulated with organizations responsible for language policies, to encourage the IC curriculum integration

-To understand the impact of plurilingual interaction among researchers for sustainable development of Science and its epistemological issues

-To sustain, evaluate and disseminate partnerships with the enlarged community, to understand the dynamics of development of a collaborative culture

-To sustain an online research community of practice, involving postgraduate students and supervisors, increasing collaboration and students' research competences

Transferring research to educational contexts

-To analyze the changes in schools' leadership, the policies of decentralization and participation of municipalities in educational administration

-To promote the integration of citizens from other countries/languages and to develop professional knowledge allowing teachers to cope with diversity, through research on teaching Portuguese as Non-mother tongue

-To analyze educational practices and discourses in different levels (formal & non formal contexts) in order to conceive strategies to promote plurilingualism and intercultural competences

-To analyze curricular management dynamics and to deepen the professional skills profile of the supervisor (inclusive education)

-To characterize ways of promoting a culture of motor and active lifestyles for young and older people

-To characterize the students' (extra)school writing practices and the teaching practices of writing; to understand the dynamics of professional knowledge of teachers concerning the teaching of writing within a collaborative training

-To produce Programmes, Textbooks and Teacher Guides for Portuguese Language discipline (Secondary School in East-Timor)

-To characterize user technological experiences and to identify marks of processing multimodal information through the use of eye tracking systems

Producing and disseminating materials and guidelines

-To disseminate and discuss with educational stakeholders a strategic document for the development of research and training of Language Didactics in Portugal

-To design, validate and disseminate curriculum materials and guidelines concerned with a transversal approach of mother tongue teaching/learning

-To design, implement and assess curriculum materials and guidelines for teachers' education programmes, concerned with outdoor learning activities

-To understand social representations about teacher's work and the professional itineraries of graduates (namely school teachers) and their insertion in the job market

Methodological details

The research involves descriptive/explanatory/interventional studies. It mobilizes qualitative and quantitative approaches and mixed methodologies (namely action-research, case study, inquiry). The data collection instruments are diverse (eg questionnaires, interviews; narratives; observation; usability tests; focus groups) as well as the analysis methods (statistical, documental, content, discourse and interactional analysis, meta-analysis).

Expected outcomes

-Reference frameworks to sustain research (eg on collaborative work, curricular approaches on Intercomprehension, language policies, linguistic and intercultural awareness, writing teaching practices, mother tongue transversal approaches, teachers' social representations) and intervention plans in educational contexts (formal, from elementary to Higher Education levels, and non formal)

-Networks and partnerships in the context of international projects and with diverse educational institutions (eg schools, libraries, language policy organizations, city halls, immigrants' associations, cultural groups)

-Platforms Redinter and Galapro (two international training sessions)

-Materials, guides and training devices for schools (eg on language and science education, self-training guides for teaching practices); university and research groups (eg recommendation guidelines on language policy); city halls, libraries and cultural groups (reports on intercultural practices)

-Dissemination of knowledge, findings and recommendations (to scientific communities, educators, institutions), by means of

publications, seminars, web 2.0 tools, flyers, DVDs

Articulations with other lines

This research will be accomplished in articulation with the 2 other lines. These articulations, which potentiate synergies among the different lines, emerge from the fact that some projects require a multi-referential approach which includes rationales of more than one group. Thus, a Project involving the constitution of an online research community of practice with postgraduate students and supervisors intends to develop knowledge about supervision (L1) but uses evaluation as a way to promote its quality (L3). Another project, Galapros, also resorts to L3 concerning evaluation approach about plurilingual and online supervision

Nome do grupo ou linha	Data de início	Data de fim	Duração
Group name	Start date	End date	Duration
Education, Teaching/Learning and Society	01-01-2011	31-12-2012	24

Planeamento do grupo ou linha

Group planning

Aims

This research line focuses on formative environments, namely on Science-Technology-Society (STS), performed in formal/non-formal contexts, e.g. virtual worlds, conducted in the developmental perspectives of critical citizenship & scientific culture.

The aims specified below concern the research main objects under progress within the Group: A) scientific/technological literacy; B) teaching/learning of science; C) media discourse; D) interfaces w/ other areas (science & art; history of science & of education); E) international/national research/practice cooperation aiming a more direct impact of research on the communities/institutions.

Main goals:

A)

- Enhance formal science teaching in articulation w/ non-formal contexts
- Design & develop didactic resources in Science (4-12 yrs) to promote argumentation & questioning towards critical thinking
- Characterize practices of national basic education teacher training institutions
- Evaluate students' teaching competencies who attended those science education (Sc-Ed) plans
- Build up innovative professional training & development on quality of infant day care, preschool & primary schools
- Develop children-youth (w/ special needs) learning & development

B)

- Develop teaching, learning & assessment strategies to promote active learning
- Formulate a teacher mediation theoretical framework using simulations
- Produce Multimodal Narratives on teachers' lessons & data analysis
- Study which didactical sequences can foster students/teachers' creative potential & assess their impact on mathematical creativity development
- Develop research using the onto-semiotic approach to mathematical knowledge
- Link teaching & research in Higher Education (HE) through action research projects
- Work w/ academics in documenting their case to spread their teaching practices
- Impact evaluation of integrating Web2.0 tools in post-graduate programmes on teachers professional development
- Develop a distributed online tool (HEI-CT Tracer Tool) to gather information on equipment, usages & performance of ICT in education
- Develop ArguQuest software to promote active learning in an (a)synchronously & distributed environment
- Deepen perception on the skills transposition developed in virtual environments to daily one & vice versa
- Develop the UA Island in Second Life
- Develop content analysis WebQDA software

C)

- Analyse representations of sexuality & gender in the media discourse
- Develop teachers' professional skills to: making educational use of the new technologies; being alert of sexuality & gender contents by media & languages used

D)

- Characterise interfaces between Art & Science in the context of Sc-Ed
- Develop & evaluate interdisciplinary teaching strategies aiming to promote a better perception of the relations between Art & Science
- Deepen knowledge on physical sciences/astronomy developments in Portugal (explicit attention to the historical roots 17-20th centuries)
- Deepen knowledge into scientific education development through historical comparative studies & the scientific instruments role
- Complete Magellan's editing correspondence
- Characterize dynamics influencing the Magnetic/Meteorological/Astronomical Observatories
- Develop & implement new units for teaching/learning the Nature of Science & Technology (NST)
- Evaluate the units' efficiency for learning the NST, using the STS-Opinions Questionnaire
- Analyse: European education, training & learning paradigms' evolution (autonomy & responsibility); literacy curricular articulation (Portugal-Spain-Holland), EQF level; literacy connection (Portugal-Spain-Germany) between education & vocational training, EQF level 2

E)

"Curricular Reform of General Secondary School in East-Timor (ET)" has a cooperative framework development - produce programmes, textbooks & teacher guides for 14 disciplines integrating the Curricular Plan. L2 is involved in 4 disciplines & in the Project general coordination; prepare a teacher training programme for ET school teachers

"Integrated Centre for Science Education-CIEC" - develop the CIEC, Basic 1 Cycle V.N. Barquinha Municipal Council School; support teachers to implement the new concept of teaching/learning sciences

Methodologies & procedures

To accomplish these goals descriptive, explanatory, interventional & comparative studies are being conducted. The research involves qualitative, quantitative & mixed approaches. Data collection is undertaken using several methods (observation, interviews, focus

groups, questionnaires, portfolios, diaries). Several data analysis methods are being used, i.e. meta-analysis, statistics, documentary, discourse & content analysis

Expected outcomes

- Theoretical frameworks (teacher mediation, scholarship of teaching)
- Qualitative data analysis software WebQDA & ArguQuest & HEI-CT Tracer Tool
- Programmes, textbooks & teacher guides for levels 10, 11 & 12, for Multimedia Technologies, Mathematics, Geology, Economy & Quantitative Methods (in ET sec-school)
- Proposal for a teaching multifunctional Laboratory for experimental sciences & a teaching Multimedia Laboratory (in ET sec-school)
- Networks w/ national & international researchers/institutions
- Knowledge, findings & recommendations dissemination to the scientific community, educators & stakeholders, through publications, seminars, conferences, web 2.0 tools

Articulations with other research groups

The knowledge mutual exchange among researchers of the 3 groups naturally gives rise to projects design & development that lay in 1) the rationales of more than one research line, & 2) the expertise of different groups' members. These articulations contribute to boost up synergies among the different lines, such as projects aiming to develop innovative teaching/learning strategies (L2) align them w/ proper learning assessment methodologies (L3)

Nome do grupo ou linha	Data de início	Data de fim	Duração
Group name	Start date	End date	Duration
Quality Evaluation in Education	01-01-2011	31-12-2012	24

Planeamento do grupo ou linha

Group planning

Aims

The focus of this research line is to study ways to promote the quality of several objects/phenomena, namely (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 researched, mainly, through the lens of evaluation and assessment, those seen as ways to understand phenomena and to contribute to the improvement of their quality. Notice that some of the aims listed below contemplate professionals' training and counseling activities in order to produce a more direct impact of research on the communities involved in those projects.

(A)

- To analyse national scientific production and other information on school management and leadership, namely to create a "school leadership laboratory"
- 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 teachers evaluation
- To study the impact of the first implementation of Teachers' Probation Period in Portugal
- To evaluate the impact of the national programme "Teacher Education for Experimental Science Teaching in Primary School"
- To evaluate educational projects (local, national and international) and digital learning resources, in the area of science education, and their impact on the articulation between teachers and researchers, teachers' professional development and students' competencies (specific and generic), using the potentialities of ICT
- To promote counselling activities with schools in what concerns their auto-evaluation processes and to understand their impact

(B)

- To evaluate potentialities and constraints of teachers' collaborative work in schools and to propose ways for its development
- To enrich the field of research on educational intentionality, learning assessment and quality evaluation of teaching and learning, from Childhood to HE
- To evaluate the impact of changes occurred on curriculum design and teaching practices within the recent challenges emerged in HE. Also to disseminate cases of good practices at those two levels
- To understand teachers' conceptions about tutoring in HE and to evaluate how tutorial activities are put in practice
- To evaluate and monitor the use of ICT to improve the quality of the teaching and learning in HE
- To develop, implement and evaluate models and practices of staff development in HE (in Portugal and other European Eastern Countries)
- To study, at an European level, ways of increasing virtual mobility among academic staff in HE

(C)

- 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

(D)

- To characterize the needs of informal caregivers of elderly people, and to develop and evaluate the impact of strategies to overcome them
- To develop a handbook for basic mobility skills to prevent injury in informal caregivers of elderly people
- To evaluate emotional distress, through the screening method, as a vital sign of the general health of individual
- To develop and validate an emotional distress screening methodology in Portuguese oncologic patients, using as basis the Portuguese versions of the TD and of the PHQ-9

Methodologies and procedures

The methodological design follows a combination of quantitative and qualitative approach aiming for the gathering and interpretation of data. There is a strong focus on the design of evaluation frameworks, sustained in theoretical, normative and empirical evidences. These frameworks allow the researchers to design suitable instruments to the different types of research (case-studies, quantitative or qualitative studies). There is also a purpose to validate the evaluation frameworks by discussing it with international experts. The researchers of this Group count with the Laboratory for the Evaluation of Educational Quality (LAQE).

Expected Outcomes

- Theoretical frameworks to sustain research (eg on school leadership, science education, pupils and students assessment, pedagogy in HE) and intervention plans in educational and health contexts
- Evaluation frameworks to monitor the quality of teaching and learning (from Childhood to HE), doctoral research, research, supervision, staff development, tutoring, virtual mobility and curriculum development in HE
- Guidelines and materials for school teachers, HE staff and schools for improving the quality of their tasks (for example, for cooperative work, curriculum development and the auto-evaluation of schools)
- Instruments for gathering data to evaluate educational programmes, didactics software and interventions
- Elderly Informal Caregivers' needs and validated strategies to overcome them
- Scales of emotional distress for the general health of individual and for oncologic patients
- Development of networks in the context of international projects (eg University of Kaunas/Lithuania & Pedagogical University of Chisinau/Moldova)

Articulations with other research groups

Some of the research is accomplished in articulation with the other two groups of CIDTFF. These articulations emerge from the fact that some projects require a multi-referential approach which includes rationales from more than one group. For example, some projects developed about Educational Policies and management (A) look for the construction of knowledge about educational, professional and institutional development (the focus of RG-Centro-194-1796) but as they use evaluation as a way to promote its quality take also on board referents from this Research Group.

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3.3. Referências Bibliográficas

3.3. Bibliographic References

Referência Reference	Ano Year	Publicação Publication
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6. Indicadores previstos

6. Expected indicators



Indicadores de realização previstos para o projecto

Expected output indicators

Descrição Description	2011	2012	2013	2014	2015	Total
A - Publicações Publications						
Livros Books	15	20	0	0	0	35
Artigos em revistas internacionais Papers in international journals	55	60	0	0	0	115
Artigos em revistas nacionais Papers in national journals	35	38	0	0	0	73
B - Comunicações Communications						
Comunicações em encontros científicos internacionais Communications in international meetings	150	160	0	0	0	310
Comunicações em encontros científicos nacionais Communications in national meetings	70	80	0	0	0	150

C - Relatórios Reports	12	15	0	0	0	27
D - Organização de seminários e conferências Organization of seminars and conferences	35	38	0	0	0	73
E - Formação avançada Advanced training						
Teses de Doutoramento PhD theses	30	55	0	0	0	85
Teses de Mestrado Master theses	35	70	0	0	0	105
Outras Others	0	0	0	0	0	0
F - Modelos Models	0	0	0	0	0	0
G - Aplicações computacionais Software	3	0	0	0	0	3
H - Instalações piloto Pilot plants	0	0	0	0	0	0
I - Protótipos laboratoriais Prototypes	0	0	0	0	0	0
J - Patentes Patents	0	0	0	0	0	0
L - Outros Other						
Book Chapters	45	45	0	0	0	90
Proceedings in national conferences	30	38	0	0	0	68
Proceedings in international conferences	98	102	0	0	0	200

Ações de divulgação da actividade científica
Scientific activity spreading actions

- Dissemination of knowledge, findings and recommendations (to scientific communities, educators, institutions, stakeholders), by means of publications, seminars, conferences, web 2.0 tools, flyers, DVDs

- Promotions of practices and dissemination of cases of good practice in research supervision namely in "face to face" and "on-line" contexts

- Development of international networks and partnerships in the context of international projects and with diverse educational institutions (eg schools, libraries, language policy organizations, city halls, immigrants' associations, cultural groups)

- To disseminate and discuss with educational stakeholders and researchers strategic documents for the development of research and training in specific issues (for example, Language Didactics in Portugal)

- Organization of international and national conferences, seminars, workshops in several themes (for example, ICEM&SIIE '2011 Joint Conference "Old meets new – media in education"; Encontro Nacional Superar Barreiras com TIC: Políticas, Ideias e Práticas / National Meeting - Overcoming Barriers to ICT: Policies, Practices and Ideas; Encontro "Ensinar Português hoje: problemas e desafios" / Meeting on "Teaching Portuguese today: problems and challenges; Encontro Internacional EDILIC - Education et diversité linguistique et culturelle; VII Simpósio de Organização e Gestão Escolar / VII School Organization and Management Symposium); Encontro Finalidades e Práticas Educativas em creche / Meeting Aims and Educational Practices in daycare; Symposium on Technologies for support in Educational Research; Seminário "Os tempos do mundo e o tempo geológico: das aprendizagens ao contributo para a cidadania" / Seminar "The world times and geological time: the contribution of learning for citizenship" Encontro 2011 dos Programas de Formação Contínua em Matemática para Professores do 1º e 2º CEB / 2011 Meeting of the Continuing Education Program for 1st and 2nd CEB Teachers of Mathematics)

7. Orçamento

7. Budget

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Instituição Proponente

Principal Contractor

Universidade de Aveiro

Descrição Description	2011	2012	2013	2014	2015	Total
Recursos Humanos Human resources	55.402,00	102.784,00	0,00	0,00	0,00	158.186,00
Missões Missions	50.000,00	90.000,00	0,00	0,00	0,00	140.000,00

Consultores Consultants	5.000,00	7.000,00	0,00	0,00	0,00	12.000,00
Aquisição de bens e serviços Service procurement and acquisitions	30.000,00	43.000,00	0,00	0,00	0,00	73.000,00
Registo de patentes Patent registration	0,00	0,00	0,00	0,00	0,00	0,00
Adaptação de edifícios e instalações Adaptation of buildings and facilities	7.900,00	9.821,00	0,00	0,00	0,00	17.721,00
Gastos gerais Overheads	30.550,00	22.970,00	0,00	0,00	0,00	53.520,00
TOTAL DESPESAS CORRENTES TOTAL CURRENT EXPENSES	178.852,00	275.575,00	0,00	0,00	0,00	454.427,00
Equipamento Equipment	16.727,00	21.530,00	0,00	0,00	0,00	38.257,00
Total	195.579,00	297.105,00	0,00	0,00	0,00	492.684,00

Instituições Participantes

Participating Institutions
(*Não se encontram registadas Instituições Participantes para este projecto*)
(*No Participating Institution has been registered for this project*)

Orçamento Global

Global budget

Descrição Description	2011	2012	2013	2014	2015	Total
Recursos Humanos Human resources	55.402,00	102.784,00	0,00	0,00	0,00	158.186,00
Missões Missions	50.000,00	90.000,00	0,00	0,00	0,00	140.000,00
Consultores Consultants	5.000,00	7.000,00	0,00	0,00	0,00	12.000,00
Aquisição de bens e serviços Service procurement and acquisitions	30.000,00	43.000,00	0,00	0,00	0,00	73.000,00
Registo de patentes Patent registration	0,00	0,00	0,00	0,00	0,00	0,00
Adaptação de edifícios e instalações Adaptation of buildings and facilities	7.900,00	9.821,00	0,00	0,00	0,00	17.721,00
Gastos gerais Overheads	30.550,00	22.970,00	0,00	0,00	0,00	53.520,00
TOTAL DESPESAS CORRENTES TOTAL CURRENT EXPENSES	178.852,00	275.575,00	0,00	0,00	0,00	454.427,00
Equipamento Equipment	16.727,00	21.530,00	0,00	0,00	0,00	38.257,00
Total	195.579,00	297.105,00	0,00	0,00	0,00	492.684,00

Plano de financiamento

Finance plan

Descrição Description	2011	2012	2013	2014	2015	Total
Financiamento solicitado à FCT Requested funding	195.579,00	297.105,00	0,00	0,00	0,00	492.684,00
Financiamento próprio Own funding	0,00	0,00	0,00	0,00	0,00	0,00
Outro financiamento público Other public-sector funding	275.950,00	226.950,00	0,00	0,00	0,00	502.900,00
Outro financiamento privado Other private funding	0,00	0,00	0,00	0,00	0,00	0,00
Total do Projecto Total of the project	471.529,00	524.055,00	0,00	0,00	0,00	995.584,00

Comentários e Justificações

Comments and Justifications

Human Resources

One predicts the need and convenience to reinforce the research structures (laboratories) with Research Technicians who may support the Researchers in the ongoing work and in the organization of missions, therefore the increase in Human Resources.

Acquisition of Goods and Services

It serves to support the organization of conferences and thematic seminars. It is intended to promote a greater and better dissemination of the developed work with specific publics.

Missions

The participation in international missions is of great relevance for the international projection of CIDTFF. There will be chosen more relevant scientific events for the ongoing projects.

Consultants

We intend to increase the participation of specialists in emergent scientific domains.

Equipment

The increase of the number of CIDTTF members indicates the need of investment in the renewal of the already existent equipment, as well as the acquisition of new ones, according to the projected works.

Infrastructure adaptation

Due to the shortage/lack of infrastructures there is predicted the need of punctual interventions in order to improve the working conditions.

9. Ficheiros Anexos



9. Attachments

Nome Name	Tamanho Size
cidtff_labs.pdf	988Kb
research_lines.pdf	22Kb

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