

Presentation:

The Center of Technology and Innovation (CTI) is a unit of research and development of the Portuguese University that results of the reorganization and fusion of other centers once existent in the institution.

Mission:

In partnership with external institutions (companies, public administration, other entities of the scientific system,...) its main goals are to create, to share, to apply and to reuse organizations' knowledge on information systems and technologies, thus enhancing the performance of the same ones.

Objectives:

In accordance with its priorities the CTI aims to achieve the promotion of research and development projects in partnership with companies, paying special attention to those that allow technology transference to the Portuguese organizations and on the other way round, advanced know-how incorporation in the university environment.

Regular publication of books and of papers in conference proceedings and magazines are supported by the center.

The projects of research developed by students of 2nd and 3rd cycles always fit in the prior areas of the center which are Information and Communication Technologies in Education and Information Systems and Technologies in Organizations.

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Research threads

Information and Communication Technologies (ICT) in Education

The department has lectured several courses on teachers training for the last years, having built a network of schools with which collaboration protocols have been signed.

The researchers of this group are well recognized in the teaching of ICT in Education and have lately developed research projects on the use of models of ICT at schools and on the assessment of specific tools application in different contexts of education.

The research work combines typical approaches to technological development and teaching and learning methods. The focus is made on three areas: e-learning, adoption and use of ICT in education and educational software for the support of teaching and learning process.

In the area of e-learning, the questions raised are: e-learning impact in different environments (students with special education needs , higher education students, ...), using different technologies, and its potentialities on school success promotion.

In the area of adoption and use of ICT in education, the focus is on the emerging technologies and their contribution on school success promotion and the impact of their use by different kinds of public.

In the area of educational software for the support of teaching and learning process, software assessment and development are achieved meeting didactical and pedagogical characteristics that are appropriate for the learning success.

Research trends – Work developed or in progress

- **E-learning**

E-learning for students with special education needs

Impact of e-learning tools on higher education students learning process

Proposal of an integrated platform, for higher education institutions, including contents management systems and based on Web applications.

M-learning – Mobile technology in teaching and learning process

- **Adoption and use of ICT in education**

The contribution of ICT on school success promotion and decrease of school dropout after compulsory years

ICT contribution on training potentialities and resistances

The integration degree of ICT in teachers practices

Conception of materials to promote the ICT use in nursery and primary education

On-line security and ICT in primary education

The hyper-documents in the process of teaching and learning

ICT implementation in “New Opportunities Centers” (Centros de Novas Oportunidades) – Experimental Approach

Information Systems and Technologies in Organizations

This area is focused on the software development process and on the role of information systems and technologies in the support and enhancement of organizational work practices, contributing to the development of knowledge integrating both degree courses of the department.

The group has two main areas of research, Software Engineering and Decision Support Systems, and keeps alive an observatory on Information Systems and Technologies (IST) in organizations.

Both areas are subdivided into specializations despite the fact that researchers frequently work altogether. In the area of Software Engineering, the main issues are the modeling and enhancement of business processes, requirements engineering, systems modeling, analysis patterns and software tests.

In the area of Decision Support Systems, the main goal is to endow the organizations with IST solutions so that the planning and the decision-making, and the access to the necessary knowledge for an increasing organizations competitiveness and success may be enhanced.

Research trends – Work developed or in progress

- **Software Engineering**

Analysis and comparison of requirements elicitation methods and techniques for process enhancement

Synchronism between the natural and permanent evolution of processes and its representation by modelation systems

To relate the requirements to business goals

- **Decision Support Systems**

Emergency systems with ArcGIS

The GIS technology in Decision Support Systems in critical situations – evaluation and control of damages caused by natural disasters, like hurricanes/storms

Success of critical factors in GIS implementation

The contribution of Knowledge Management Systems in the intelectual capital measurement

Conception of a methodology for BI projects implementation

The projects lately undertaken by the observatory on ICT use in organizations were:

The Use of Information Systems by Small Businesses

An International Perspective Observatory on ICT use in Portuguese Hospitality

MS used by Portuguese businesses

Maturity status of Portuguese organizations towards IS alignment with organizational strategy

Evaluating how Portuguese organizations put on practice and make distinction between Information Management (IM) and Knowledge Management (KM)

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