

# Everyday Technology for Independence and Care

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# Health care and technology: a new approach to education and applied research

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**Abstract.** Transitions in health care and the increasing pace at which technological innovations emerge, have led to new professional approach at the crossroads of health care and technology. In order to adequately deal with these transition processes and challenges before future professionals access the labour market, Fontys University of Applied Sciences is in a transition to combining education with interdisciplinary practice-based research. Fontys UAS is launching a new centre of expertise in Health Care and Technology, which is a new approach compared to existing educational structures. The new centre is presented as an example of how new initiatives in the field of education and research at the intersection of care and technology can be shaped.

**Keywords.** Health, technology, care, allied health professions, engineering, nursing, ICT, education, applied research

## Introduction

Transitions in health care and the increasing pace at which technological innovations emerge, have led to a new professional approach at the crossroads of health care and technology. Care professionals, who in the old days mainly came into contact with sophisticated technology in hospitals and rehabilitation, now find themselves working with high-tech solutions in nursing homes and home care settings. These innovations have a far-reaching impact on the way care professionals carry out their daily tasks and the way care organisations support planning of these daily routines. Embracing technology in daily care has also led to a change in the technological sector. This sector (re)develops (existing) technologies for applications in the domain of health care. A successful development and implementation requires not only an interdisciplinary approach of these processes, but also an intensive cooperation with the end-users of such technologies: various kinds of care professionals, patients and family carers. In order to adequately deal with these transition processes and challenges before future professionals access the labour market, Fontys University of Applied Sciences (Fontys UAS) is in a transition to towards providing education which is based on interdisciplinary practice-based or applied research.

Fontys UAS is launching a new centre of expertise in Health Care and Technology (Fontys EGT), which is a new approach compared to existing educational structures.

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The new centre should educate the future professionals (reflective practitioners) in the domains of care and technology. In addition, Fontys EGT should prepare them for a future that requires flexibility and reflectivity, and provide these future workers with the skills to incorporate the latest innovations and research into daily professional practice. The new centre is presented as an example of how new initiatives in the field of education and research in the domain of care and technology can be shaped.

### **Structure and functions**

Fontys EGT is an interdisciplinary centre which combines knowledge and expertise of four existing institutes within Fontys UAS: Fontys School for Health Professions, Fontys School of Nursing, Fontys School of Information and Communication Technology, and Fontys School of Engineering. The centre is dedicated to educating Bachelor students. This requires existing curricula to be amended, in order to incorporate interdisciplinary lessons at the crossroads of health care and technology, which in turn requires the active involvement of lecturers and researchers in order to develop new courses. Moreover, Fontys EGT has an office function for both external partners (SMEs, policy makers) and internal partners. The new centre can be seen as a “united brains” structure or “open innovation lab” with a centralised office. The institutes work together on the creation of a common skills lab, which tries to offer both students and lecturers/researcher with tools to learn and educate about health care technologies.

In addition, Fontys EGT offers a platform where students, lecturers and researchers (including PhD-candidates) are being stimulated to cooperate, though research projects and programmes will remain embedded within the existing research groups. Lecturers are stimulated to play an active role in updating current courses based on the cooperative model. Relevant themes that will be dealt with in the centre are biomedical and rehabilitation technologies including assistive aids, ageing-in-place with the use of smart technologies, ICT and e-health applications, as well as building services engineering for better health and care environments.

The front office, which is foreseen to be operational in the autumn of 2011, will be the collection point of questions and services. It will gather and combine information on all on-going research and teaching at Fontys UAS. The front office can then refer relevant actors to the appropriate person within the organisation. Furthermore, Fontys EGT is foreseen to play an important national role in steering the process of development and distribution of teaching material, such as books and readers. In The Netherlands, there is currently a lack of such material, and new initiatives should not only be stimulated but also coordinated. This combined effort can lead to a synergy for all universities of applied sciences in The Netherlands seeking new teaching materials on the crossroads of technology and care. Moreover, the centre will create a digital database of current and finished projects within Fontys UAS.

### **Involvement of students**

The integration of education and practice-based or applied research will strengthen the mutual relationship. Student participation in research projects (embedded in existing research groups) can lead to stronger ties with the industry and health care

sector, as future workers are already involved in transferring knowledge from and to the field. Students from any Fontys UAS Institute (i.e., faculty) can participate in Fontys EGT activities. There will be a mutual set of lectures and projects (30 EC), consisting of smaller units/courses that will be taught by the various participating institutes. Projects will be connected to on-going research that is being conducted at Fontys UAS, and may consist of practical assignments, literature studies or a combination thereof. Because students have different backgrounds, differences in educational and research paradigms will be bridged as much as possible. Developing mutual communication skills is essential. Apart from exams, writing papers or developing innovative products in cooperation with local bureaus that guide innovation are means of testing students.