design in *creative technology*

from a *new media* perspective

Anton Eliëns

**abstract** In this report we look at how the design track may complement the new media track, not only in the area of skills, such as hand drawing, but also, perhaps more importantly, in the area of human factors. Additional benefits may come, more over from modelling, that is building VR models inspired by drawing using appropriate digital content/modeling tools.

**status**: 11/2/08 – for discussion

**introduction**

Although there are by tradition significant differences between the computing disciplines (from which the initiative for *creative technology* was taken) and industrial design, joining efforts in establishing the new curriculum *creative technology* may be worthwhile, not only because of potential overlap and shared interests, but also because of the fact that the tow approaches may complement eachother in a fruitful way.

For a brief summary of educational targets for *creative technology*, we may somewhat tentatively present a list as below:

- **skill(s)** – computing, mathematics, simulation, technology
- **knowledge** – computer & software architecture, human factors
- **theory** – systems engineering, media & communication
- **experience(s)** – project(s), deployment in social context
- **attitude** – initiative, creative, involved

Although this summary gives no information wrt. the educational approach, many of the topics would alos be included in a curriculum *industrial design*. As a matter of fact, the curriculum *industrial design* already has experience with an educational approach that me be characterized as project-based and *just-in-time* (theoretical) learning [1].

**new media – targets and learning goals**

No doubt, the level of technical expertise, that is computing skills, required of students *creative technology*, and in particular students of the *new media* track, will be more demanding than for *industrial design* students.

In summary, educational targets for *new media* may be listed as below:

- **skill(s)** – scripting, programming, interaction design
- **knowledge** – web, multimedia & game technology
- **theory** – understanding of media & communication
- **experience(s)** – concept development & realization of (playful) application(s)
- **attitude** – explorative, with an eye for the *rethorics of the material*

Actual learning goals, or topics of study in the *new media* track encompass:

- interactive video – in customizable format
- web technology – for developing information portal(s)
- animation – for simulations and (physical) systems
- virtual reality – for games and virtual environments
- game development – for entertainment and instruction
- rich internet application(s) – for multimedia (web) applications
- interactive installation(s) – media art
Apart from virtual reality, which also has a place in industrial design, these topics are of subsidiary relevance for industrial design students, but may become more important when the context of deployment of design artefacts is taken into account.

**smart technology – additional requirements**
An essential part/track of creative technology is constituted by what may be called ubiquitous computing, or smart technology. The educational targets related to this track may be summarized as:

- **skill(s)** – modeling, construction
- **knowledge** – mechatronics, ubiquitous computing, dynamic systems
- **theory** – human perception, privacy, security
- **experience(s)** – deployment of smart (multi sensor) systems
- **attitude** – inventive, with a playful mind

Nevertheless, as the focus of creative technology may be characterized as the creation of computer augmented (entertainment) artefacts [2], smart technology should also clearly be positioned in a design context.

**the design curriculum – focus on human factors**
Looking at educational targets for design, admittedly from a creative technology and new media perspective, we may arrive at:

- **skill(s)** – drawing, modelling
- **knowledge** – design methodology
- **theory** – human factors
- **experience(s)** – design & prototyping
- **attitude** – sensitive, with an eye for human experience

Elements in the curriculum design would typically encompass:

- sketch, drawing
- vr & cad modeling
- physical prototypes
- concept development

We may observe that in addition to elementary skills of drawing and modeling, an important contribution may come from the attention to human factors that is essential in the design of artefacts related to human experience.

**conclusions – creating computer-augmented artefact(s)**
Looking at the curriculum as a whole, we may safely conclude that design should be an intrinsic element of creative technology, and, taking into account the observations made above, that additional benefits may come from

- experience with a project-based educational approach
- clear attention to human factors in a design context
- practical experience with teaching drawing and modelling skills
- training in visual presentation skills

**reference(s)**
1. Create the Future – An environment for excellence in teaching future-oriented Industrial Design Engineering, available in online version