design in *creative technology*

from a *new media* perspective

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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 benefots may come, more over from modelling, that is building VR models inspired by drawing using appropriate digital content/modeling tools.

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introduction

Although there are by tradition significant differences between the computing disciplines (from which the intitiative 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:

educational targets – *creative technology*

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

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:

educational targets – *new media*

- skill(s) – scripting, programming, interaction design
- knowledge – web, multimedia & game technology
- theory – understanding of media & communication theory
- experience – concept development & realization of (playful) application(s)

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

learning goals – *new media*

- 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

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 constitued by what may be called *ubiquitous computing*, or smart technology. The educational targets related to this track may be summarized as:

educational targets – *smart technology*

- skill(s) – modeling, construction
- knowledge – mechanics, ubiquitous computing, smart systems
- theory – human perception, privacy, security
- experience – deployment of (multi) sensor systems

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:

educational targets – *design*

- skill(s) – drawing, modelling
- knowledge – design methodology
- theory – human factors
- experience – design & prototyping

Elements in the curriculum *design* would typically encompass:

learning goals – *design*

- 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)

Returning to the *creative technology* curriculim as a whole, we may list the following topics or educational goals:

learning goals – *creative technology*

- computing – architecture, networks, programming
- technology – new media, smart technology
- creative applications – creativity (mental + artistic), psychology, research/design methods, communication
- business – marketing, planning, project management
- design – sketch, prototype, realize

Evidently, design is an intrinsic element of *creative technology*, and, taking into account the observations made above, 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

reference(s)

1. Create the Future – An environment for excellence in teaching future-oriented Industrial Design Engineering, available in online version
2. Facets of Fun – On the Design of Computer Augmented Entertainment Artefacts, available in online version