Mission Creative Technology

And for some a reply in blue – AE (30/3/08 – noon)
Remarks by BJG in green – 30.03.2008

authors: BG, AM, JvA
comment(s): AE As a general comment, as I indicated in an email, I definitely do miss some concrete scenario's, as listed in scenario(s).

Agree – scenarios are another helpful way of providing contours of Creative Technology. This text was meant to give a 'bird's eye' view in one page at a 'high' level of abstraction – not meant for students but rather to document 'our' view as basis for course development. I expect that some of it can also go into an accreditation document.

The scenarios I will read next – from the word 'scenario' they appear more suited for motivating and attracting students?

Also for sketching professional/learning targets, which is if I remember well part of what the accreditation text should deliver.
Apart from that it is a touchstone, against which to judge the learning goals and educational targets.

Another general comment is, that is is not clear who the audience is. Is it an accreditation committee, potential student(s), or UT Management?

Creative Technology improves quality of life by identifying human needs that can be solved within the ICT domain. It does so by combining a genuine sensitivity for societal problems with craftsmanship from the engineering sciences. Key directions in which creative technology offers new solutions are in human living, productivity and wellbeing, in mobility, activity and safety and in leisure, communications and public space.

The notion of *quality of life* is quite elusive, and is perhaps not so much the concern of engineers per se, as well as of policy makers. Nevertheless exploring technologies can lead to creative solutions with societal impact.

Indeed – I struggled with 'quality of life' as phrasing. Any suggestions here? It appears much stronger (at least in writing) to have a central 'reason of existence' than to explore technologies that quite independently 'appear' to generate things that are useful.

I see your point of <reason of existence>. A solution is not so easy. I would throw out the (ethical) value oriented imperative and speak of: is concerned with human life, that both in the private and public sphere is become more and more dependent on technology. (something to this effect, and then ...) In Creative Technology, we take a creative approach to exploring technologies can lead to creative solutions with both personal and societal impact. (many times creative, the main point though is that we are not explicitly intent on improving life, our approach is more playful than that; also I would find it hard to communicate to our students ...)

In line with UT (new) ideology, I would rather speak of finding creative solutions due to a broad scope.

Not quite sure what you mean here.

New UT ideology, if I am well informed, stresses: a) convergence of technologies, b) societal impact. [my comment should be clear now, basically emphasizing a multi-disciplinary approach, as well as motivated by societal context]

However, I do like the phrase: *It does so by combining a genuine sensitivity for societal problems with craftsmanship from the engineering sciences.*. As indication of the field, I would prefer a shorter phrase, such as *working and living tomorrow*.

Not quite sure what you mean here as well – it is shorter but also less descriptive. The slogan working and living tomorrow may serve us better in another type of text. As said, this attempt was to reach some form of 'basis' for course development, a 'manifesto' from which things 'orginate'.

Living tomorrow is a phrase from Philips, and working tomorrow from LogicaCMG. Combined the phrase: living and working tomorrow seems to capture what we are concerned with, certainly as a catch phrase, the list as originally given I found a bit messy ...

The mission is to develop creative minds capable of producing and integrating artistic, technical and practical elements in systems in the field of new media and smart technologies.

Rather wordy, and I would rather say, we *invite creative minds* and offer *technical and practical training* in a *creative atmosphere*.

Again, I feel that your reformulation is addressing potential students - it is well put but for another text I feel. Regarding 'invite creative minds' or 'develop creative minds' – small difference – if someone has a creative mind then we will help develop it ... that is the way it was intended by me. If there is no (fragment of) a creative mind, please do not select this study ...

Then of intent I agree. However fr the accreditation we should make explicit whe do, and what we not do. We expect a creative mind from our potential students, and we provide an environment in which we nourish that, and in addition give training ... It does have an impact on how we organize our courses, and what targets we set, I think.

Creative technology is multi-disciplinary, incorporating design, psychology and philosophy, electrical engineering, computer science and mathematics in new ways.

That sentence is basically OK, although I think *psychology* and *philosophy* should not be over-emphasized. Rather, there is attention for the *psychological* as well as *philosophical* context.

Agree – any suggestion for a proper wording that is not too lengthy?

Creative Technology is a multi-disciplinary curriculum, incorporating design, electrical engineering, computer science and mathematics in new ways, with a strong attention for the *psychological* as well as *philosophical* context

Finding function and expression of smart systems and new media requires understanding of their natural roles and presuppositions. This capability is trained by following methods from the mathematical sciences and industrial design. The capability of prototyping, engineering and implementation of complex realizations grows from traditions in computer science and electrical engineering.

This paragraph seems to contain a contradiction, in the sense that both *function* and *expression* of new media and smart technology, that is their natural roles and presuppositions, are not (IMHO) trained by (methods from) mathematics and industrial design, but rather by gaining insight in the psychological and philosophical context. I would rephrase this part as: *Finding function and expression of smart systems and new media is explored by following methods from the mathematical sciences and industrial design.*

Sort of agree – your sentence also expresses the basis that 'methods/attitude' from mathematics and design combine to help clarify 'function and expression'. A 'mathematical mind' may be able to reach a clearer understanding of complex situations and requirement-complexes – that is likely to be helpful for acquiring 'function'. A keen eye for design will probably create something more suitable and attractive. Hence, my second sentence.

The 'capability' of finding function and expression can well be 'trained' using methods from mathematics and design – I see little contradiction here.

My objection was with: requires understanding of their natural roles and presuppositions, and the reference of capability to this. For the rest we are in agreement I think. And I like the phrase function and expression ...

The composite character of creative technology at the University of Twente combines artistic and technological streams in an ambitious program that enriches engineering and computing in essential and new ways.

That is well put.

Glad you like it.

Students follow courses in the basic disciplines and apply these in challenging creative applications in the CreateLab, emphasizing individual qualities as well as teamdynamics.

As I have indicated in our previous discussions, to accomodate students with a wide variety of profiles, we should emphasize what I called *identry as a group*, meaning that students will develop an individual portfolio and will cooperate in groups, assuming different roles, according to the talents and interests of the individual student. Although it is to some extent there, this should be emphasized more!

Is that not contained in 'emphasizing individual qualities as well as teamdynamics'? Your version is more outspoken and complete – why not make it part of a 'final text'?

Why not?

End-terms

After completing the bachelor course in Creative Technology, students will be able to identify human needs for which they can develop, apply and implement new concepts within ICT for solutions, thereby enriching, complementing and facilitating key areas of daily life.

The restriction to ICT seems to be rather arbitrary.

To some extent it is – the collaboration/connection with IO is very natural, only the form will be a bit different. Hence the ICT restriction to distinguish us.

I find the term ICT a bit outdated, somehow, and leading to the wrong connotations. Altough perhaps overly poetic, I would prefer digital realm -- instead of ICT. Also, ICT does not do full justice to smart systems, as a pervasive computing technology, going beyond traditional ICT!

Students will be adequately trained in electrical engineering, computer science and design to be able to play a central integrating role in dedicated teams of experts working on creative applications in the ICT domain. Throughout the curriculum ample attention will be given to developing communicative and social competences to fulfil this integrating role successfully.

Themn what is the role of mathematics?

Indeed ... trained in mathematics, electrical engineering etc etc.

In our discussions about (he)art of mathematics, I think we agreed on a position for a, as I would call it, more poetic approach to mathematics, at least in a capita selecta form. Also in preparing material for my animation (balls in space) course, I found that we really can make a difference by emphasizing the importance of mathematics, as a basic tool, on an intuitive level, to find creative solutions. Perhaps, running ahead on a discussion we should have later, I would like to emphasise the <special> role of mathematics in our curriculum, also as a distinghuising feature against HBO curricula, and other university level curricula.

The bachelor diploma Creative Technology signifies capable creative minds that can connect artistic and technical domains. Students will also be trained in the psychological aspects of man-machine interaction and in transferring good ideas into successful commercial products.

Before making such a statement, I would rather like to see a number of (profesional) scenario's, to get a clearer idea of what the role of CT students would be.

Sort of agree – the scenarios and other material will be important as well, but in a 'separate text'. As mentioned, my idea was to have 'about one page' of 'bird's eye view'. For 'internal' and perhaps 'accreditation use' only.

I see, and I value that!

The composite role of a creative technologist is expressed on the one hand in developing a clear analysis of societal and human needs in a multitude of contexts and on the other hand connecting this to directions for artistic, technological solutions built on state-of-the-art methods from the engineering sciences.

Should it be *composite* or *integrative*, as for example emphasized in the accredition document for the new ID curriculum.

Yes, I like 'integrative' better. Here I was 'running out of steam' – it should be 'composite charater' or 'integrative role', I think.

Then, I would suggest to take composite character for the curriculum, and integrative role for the student!

Knowledge, skills and competences of the Creative Technology students

authors: BG, AM, JvA
comment(s): AE

Qua scope OK, as far as I am concerned, although I have some comments on how it is formulated. Also, I think it should be more clear, where the goals of CT are different from the respective goals of the constitutive sub-disciplines.

Anton, this 'list' is an 'active form' (and slightly longer) of Zsofi's earlier list. To me it is a helpful 'checklist' for course-proposals. Hence, at this stage largely for 'internal' and 'accreditation' use only.

For me I find this list to high level for the construction of the curriculum, as potential list for the accreditation I can live with it, though. (This feeling also applied to Zsofi's original list.)

... where Creative Technology is different ... I think it will be 'similar' in many respects as well and that we should not be different to be different but only where useful. There are several elements where this is already expressed and I am sure you can make these more outspoken.

Agree. Final wording will take some additional effort though. Further I thnk that internally we should discuss more explicit what we want, and (perhaps even more important) what we want not!

The multidisciplinary Creative Technology education will endow students with the necessary knowledge, skills and competences needed to work on the discovery and development of innovative applications in the field of New Media and Smart Technology, that support the entire spectrum of human needs.

The phrase *that support the entire spectrum of human needs.* seems to be a bit overtaken!

... same problem as earlier in the mission statement – there it was the phrasing 'improving daily lifes' that was a bit 'difficult'. The 'idea' is to express that Creative Technology will be 'helpful' in a variety of ways, from 'nearly medical/wellness' to 'fun and games', etc etc. Any suggestions for rewording?

I re-suggest the phrase: living and working tomorrow ...

Particularly, after having passed the Bachelor exam successfully the student: 1. knows the relevant electronic and computing technologies to be used, concerning both principles and functionality;

I would emphasize *skills* instead of *knowledge* here.

In such a list there are bits of 'skills' and bits of 'knowledge' – this was chosen to be a knowledge element. We could add one that emphasizes skills.

That would be fine. Giving 12 elements, which is even nicer!

2. can analyse complex requirement contexts by making abstract descriptions

I would rather say *can find creative solutions based on empathy and onderstanding*.

... here a 'skill' was meant, hinting at a mathematical origin ...

Then make the hint explicit!

3. can implement key prototypes to try out ideas based on the latest, high-level tools and technologies;

omit *high-level*

Agree.

4. recognizes and understands technological trends at such a level that a critical evaluation of scenarios for future applications and developments can be made;

OK

5. is able to identify societal problems and human needs that can be solved with state of the art technology in the ICT domain;

why only in the ICT domain. Omit that! That should be implied by context.

... ICT to distinguish us ...; how would you imply that by context? Any suggestion for a sentence?

Changethe ICT domain in: computing, smart systems and new media, or perhaps more simply, the digital realm.

6. can solve problems in a creative way, taking into account all complexities,

requirements and interdependencies of the application areas;

Add: *and stakeholders*.

Agree.

7. possesses skills to design attractive solutions, where both aesthetics and function are concerned, leaving space for the artistic;

change *concerned* in *combined*, and leave out *leaving space for the artistic;*.

Agree.

8. understands user acceptance and success criteria in a multi-cultural and globalised world;

Can find nothing againts that!

Mooi toch ...; our worry (AM, JvA and me) was ... wouldn't it be nice to know how to do this ...

I cannot help but comment, let our students go out in the real world, and make mistakes, in a protected way. (communicate to understand, as it were ...)

9. has communicative skills and psychological knowledge, indispensable for dealing with people who would benefit from the new systems and services;

OK, but I think the group of *stakeholders* might be larger than the group of *people who would benefit*.

Agree – that should be added. These students will need to be 'robust' and 'complete' in their communications – curious to see whether these will 'emerge' from Creative Technology.

That is perhaps why it is interesting for all of us to actively get CT of the ground, isn't it?

10. can place the new applications in a business context;

that is rather vague. Does that include writing a business and/or communication plan?

Indeed, 'all' that is needed to get going in a business context (including negotiations with stakeholders, and perhaps shareholders ..)

11. can assume a bridging role in a variety of multi-disciplinary teams, thereby translating and communicating requirements and knowledge from different fields of specialisation.

Again, I woild like to see this coupled to more specific scenarions.

Again, that is important, but not for this check-list ...

Good. I wonder what color will be taken next. probably we are in phase orange.
Anton