Yet another paper about integration?

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Abstract. Confronted with the changing educational landscape, our architecture program faces the need for integration: integration of CAAD-related subjects into the curriculum, but above all integration of the curriculum as such. This inspired the idea to view ICT as an ally in tuning various courses to each other by what unites them all: the concrete architectural project. Within the scope of a two-year pilot project, we examined whether and how the use of ICT could improve the integration between a exemplary course, seminar and design studio. Despite evident links between the three, students and teachers used to consider these as separate entities. Without ignoring the individual character of each, the pilot project aimed at initiating a process of synergetic and cumulative knowledge development, whereby ICT played various roles. Across the board, the objective to stimulate a synergy among different components in the curriculum has been partially realized. Questions arise, however, as to who will take care of the extra tasks brought about by the use and maintenance of ICT after the project has ended.

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Introduction

Within the field of Computer-Aided Architectural Design (CAAD), integration has inspired plenty of papers, panel discussions and workshops, covering a whole spectrum from installing Information and Communication Technology (ICT) in design studios to incorporating CAAD subjects in architectural education. Bringing order in this chaotic spectrum is far from trivial a task, and one transcending the scope of a short paper at that, but basically the discussion can be structured according to questions (Neuckermans and Geebelen, 1998):

What is or should be integrated? Just another tool or skill, or an essential ingredient of architectural thinking?

Where is or should this integration take place? Inside the studio versus in a computer lab? At the freshmen level, in the higher years, or spread throughout the curriculum?

Who is or should be responsible for this integration: computer-literate design teachers, computer scientists interested in design, system managers, or students themselves?

Rather than listing the pros and cons of possible answers to these questions, this paper switches attention to yet another type of integration.

Another type of integration

Like every curriculum confronted with the changing conditions in the educational landscape, the 5-year architecture program at our university faces the need for integration of CAAD-related subjects, but first of all for integration of the curriculum as such. Symptoms of this need for integration are manifold. The intrinsically complex nature of architecture tends to multiply the

number of course topics, which brings about high study loads at the expense of synthesis and reflection. The ever more fragmentary and aspect-oriented way in which the curriculum is structured hinders students in recognizing the coherence among different curriculum components. Moreover, information about architecture projects in the library as on the Internet is fragmented and incomplete, and often lacks critical selection. This saddles students for each paper, design preparation or case study with time-consuming documentation work without substantial cumulative effect—information on the same project has to be collected over and over again. In view of this, a two-year pilot project was set up to explore a threefold remedy:

1. Developing a multimedia platform to regroup fragmented material (images, plans, facts & figures, texts, references) around important and enlightening architectural projects.

2. Launching a multi-thread process to permanently feed the platform with material on architectural projects.

3. Setting up a didactic experiment to examine whether and how using the platform could improve the integration of three representative components of the curriculum.

In detail

The platform is conceived as a Dynamic Architectural Memory On-line (DYNAMO) and tries to kill two birds with one stone (Heylighen and Neuckermans, 2000). At short notice, it wants to offer students and professional architects a valuable source of inspiration, ideas and design knowledge, as it is filled with a permanently growing collection of design cases. DYNAMO's long-term objective is to initiate and nurture the life-long process of learning from (design) experience as suggested by the cognitive model underlying Case-Based Design (Schank, 1982).

A first prototype was built within the context of a Master's thesis (Segers, 1998), and gradually developed into what is currently on-line as DYNAMO v.4.0 (dynamo.asro.kuleuven.ac.be: May 2003). Physically, DYNAMO consists of a growing collection of cases—the actual memory content; a database that structures this content; and a user interface to consult and modify it.

Being an interactive workhouse rather than a passive warehouse, the platform cannot only be consulted, but also fed in several ways. Within the scope of the pilot project, we added material generated by students and teachers in different contexts and for various purposes: exemplary projects for a design assignment, papers written for theoretical courses, as well as specialized, in-depth case studies as part of thesis work.

While students, teachers and researchers can access the platform where- and whenever they like, the project explicitly introduced the platform in three representative components of the curriculum:

The seminar Program studies & building typology (2nd year) critically discusses exemplary housing projects through the lens of sub- and desurbanisation, after which students work on a typological documentation and evaluation of a local or international housing project.

The design studio Urban housing (3rd year) situates architecture problems in an urban context by asking students to design a high density urban housing project.

The course on Architectural theory (3rd year) deals with the relationship between architecture and modern urbanity.

It is striking how, despite evident links, hardly any synergy among this trio was achieved in previous years. Students and teachers used to consider them as three separate entities. Without ignoring the individual character of each, the pilot project aimed at initiating a process of synergetic and cumulative knowledge development, where-

by the multimedia platform played various roles.

Within the context of the Program studies seminar, students were asked to use a specific analysis format, and to submit and present their work via the platform. In the long run, this should result in a set of uniform analyses of various projects in terms of density, lay-out, organization of collective and private spaces, housing typology and urban morphology. At short notice, the platform enabled students and teachers to share material about the urban housing projects discussed, to learn from each other's analyses and—after the seminar had ended—to return to this material when designing an urban housing project in the following year.

At the start of the studio, studio teachers used a selection of student analyses and extra urban housing projects, added to the platform on their suggestion, to make students familiar with the assignment. Afterwards, students could consult the material in more detail whenever they felt like. Upon completion of the studio, exemplary student projects were fed into the platform by way of

Figure 1. Urban housing project designed by Frederic Boumans & Jan Dervaux.

example for future Urban housing studios (Figure 1).

In the Architectural theory course, part of the reader, which students used to receive in paper format, was made available through DYNAMO. By way of exam, students were asked to exemplify a specific design approach (e.g. Critical Contextualism), compare contrasting approaches (e.g. various projects for the same site in Berlin) or clarify concepts (e.g. type, analogy) from cases in the platform. This should stimulate students to study the projects discussed in class more in-depth, and to have a closer look at the material available instead of learning the subject matter by heart.

Lessons learned

The overall objective of the project, to create a synergy among various curriculum components, has definitely been reached at least in part. Housing projects analyzed in the seminar largely overlap with projects used to exemplify the studio assignment. Giving feedback on the seminar work at the start of the studio obviously reinforced this link. The link with Architectural theory is less evident, partially because of the late availability of the material in the platform, but also because the course relies mainly on projects with a deep theoretical significance, often belonging to the 'canon' of architectural history. These projects, often belonging to the 'canon' of architectural history, rarely coincide with those provided in the seminar and the design studio, which are mainly acquired from recent architectural publications.

Whether the didactic experiments, and the use of the platform in general have improved students' 'architectural baggage' is difficult to measure. Nevertheless, those involved in all three experiments undoubtedly got acquainted with a more substantial set of architectural projects, in quantitative, but especially in qualitative terms: the platform offers students more and better material about projects than in the past. Moreover, they can study projects more in-depth, at their own tempo and supported by their col-

leagues' analyses and interpretations. Very promising in this respect is the studio teachers' impression that students got a hold over the assignment more easily than their predecessors.

The cumulative effect, in the context of the didactic experiments as well as in other curriculum components, is evident. Weaknesses remain the need for selection and filtering of the material and for sustaining the efforts to feed the platform now the project is finished. In this respect, at least two of the three questions above seem to apply to the type of integration aimed at in this project:

What exactly should be cumulated? What material on what projects should be fed into the platform? And is there material that needs to be removed after a while?

Who is responsible for the use and maintenance of the platform now the project is finished? Who takes the initiative to keep stimulating its use in various curriculum components? Who selects and filters its content? And who takes care of its permanent feeding?

Acknowledgements

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