

Connecting Digital Tools

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A decade ago, Bill Mitchell wrote “Chroniclers of our era may one day write ‘What was computer-aided design?’ To them, it will just be design.” Because of the proliferation of digital tools for design, we are rapidly forgetting that there was ever design before computing. Ask an undergraduate student to describe the design process. There is a good chance that the student will mention using CAD and 3D modeling. Ask a contractor how to practice the profession of building. The answer will surely involve manipulating digital spreadsheets and using project management software. Ask a facility manager a similar question and most likely the answer will involve use of databases, calendaring software, web sites and email. Digital tools for those in the architecture professions have become pervasive.

Convergence is another phenomenon of the contemporary technology that has crept into our practice as researchers, educators and professionals. Communications technology and computing technology are intertwined. The two fields are rapidly becoming indistinguishable. When you communicate, there is a good chance that you are using a computer. When you use a computer, there is a good chance that you are communicating. The “back talk” that Donald Schon has described as a hallmark of the creative design process is now mediated by our digital tools. Whether communicating with external intelligences, artificial intelligences or even reflective intelligences, the computer is a participant. Our research and exploration of digital tools is increasingly inextricable from the study of design methods and cognition.

The digital tools that are described in this section are postulates. Does this software model the cognitive processes of designers? If we change the process to conform to the software, will the design artifacts improve? Can the process be expedited and improved in quality through automation encapsulated in software? We are tracing the trajectory of research laid out by Herbert Simon who noticed that computing research is not most profoundly mathematical but is rather the empirical study of how the mind works. At some point, the computer will be transparent in research about design. Within ten years, the chroniclers will ask “What was architectural computing research?” Because all design methods research will involve computing.

References

Mitchell, William J. And Malcolm McCullough. 1995. Digital design media, 2nd edition. New York: Van Nostrand Reinhold.
 Schön, Donald. The Reflective Practitioner. New York: Basic Books, Inc. 1983.
 Simon, Herbert A. The sciences of the artificial. Cambridge, MA: the M.I.T. Press, 1969.

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