Tools of the Trade:

Concept Mapping: IHMC's CmapTools

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Planners & Thinking

Recently, in a not particularly scientific poll nor representative of the planning as a whole, I asked 20 different planners (all folks I know in one capacity or another and most of whom I'd worked with at some point over the past years) how they approached problem solving. What I found was that the folks in fields of planning that involved ordinances tended to be, exclusively, linear thinkers. The two transportation planners had lateral moments, but were primarily linear in their problem solving process. The housing person doodled and worked the solutions out in his head before committing ideas to paper. The six comp planners self identified as lateral thinkers, and five out of six used some form of clustering or concept mapping as a thinking and problem solving tool; the other used, almost exclusively, post-it-notes, but the end result was almost the same. One used a modified memory map approach and scrawled notes on the back of every available envelope.

None of the approaches are wrong. The reality is that different people think in different ways. Some folks are really good at thinking in a straight line (linear thinking). They are usually the ones who can sit down and write a nice, neat outline before starting a report or a project or create a flowchart for a process or a problem. Others approach processes and problems more organically (lateral thinking), utilizing methods that may seem to the linear thinker as something between scattershot and chaos. One tends towards analysis, the other towards synthesis.

When I first started working for Montgomery County, Virginia, my boss walked into my office and handed me a copy of Edward de Bono's *Thinking Course* and told me that my first assignment was to read the book. Within the first ten pages, it was clear the director of the department did not think I was going to be specializing in site plan reviews and zoning enforcement. I suppose, in retrospect, I shouldn't be surprised given that my first Masters was in Creative Writing. By the time I finished

Informal Survey Results, December 2010

No. of Planners	Planning Specialty	Thinking Process	Problem Solving Method
7	Zoning	Linear	Research other jurisdictions, best practices; make a list and then order it; outline the problem and then fill in the information.
2	Transportation	Semi-Linear	Draw a picture; flowcharts.
1	Housing	Semi-Lateral	Doodle, scribble random comments until something makes sense, built charts.
4	Subdivisions	Linear	Almost the same list as the zoning folks
6	Comp Planners	Lateral	Cluster, write ideas on post-it-notes, rearrange write more post-it- notes, free association, doodle, mind-maps, concept maps.

Resources: Ways of Thinking

"Integrative Thought & Action" InterEnvironment Institute, 2008

Thinking Course. Edward de Bono (1994). New York: Facts on File.

Reshaping Planning with Culture. Greg Young (2008). Ashgate.

Mind Tools. Site has an excellent toolbox for creative problem-solving and thinking.

the book three days later, having spent time trying out his short assignments and talking my partner into being a guinea pig on some of the approaches, I wished I had read it before I slogged through two Masters programs and before I had taught. Some of his approaches were familiar, paralleling the invention practices taught in undergraduate and graduate English programs; others were completely new. The problem I ran into was that I did not have a computer program which allowed me to incorporate the invention tools I had learned from the book. I ended up modifying my use of an art program I already owned. Years later, a friend introduced me to CmapTools, a program he used to create modified flowcharts and develop zoning ordinance provisions.

CMapTools: A program to bridge the gap.

Software Resources:

CmapTools (IHMC)

CmapTools Online Users Manual

CmapTools was created by and is available from the Institute for Human and Machine Cognition (IHMC), a research institute sponsored by the Florida University System. Concept Maps and the CMapTools started as a tool for educators and for teaching advanced learning and problem-solving processes to students. It has, however, a far broader range of uses, from project planning and flowcharting to information exploration and organization. Indeed, one of the best features of Cmap and one of the reasons it is an excellent tool for planners, is that is allows the user to develop collaborative project files, including linked files, which can be shared with other participants in the planning process. The linked files do not need to be in the same format.

The program does not require much instruction, but it does require a willingness to explore and play. While the program's design is fairly intuitive, IHMC does provides an excellent online manual that is user-friendly and provides ample images to guide you through the process.

For users, whether as individuals, in government agencies, or working for organizations, one of the best features of CmapTools, to be honest, is that the program is essentially free. The organization wouldn't argue with a donation, but you can download the program and have at it. There are no site licenses involved. If you are responsible for public involvement and have a laptop and a projector, CmapTools can take the place of flip charts. While there are some limitations with the program, most notably in the choice of shapes and line configurations, they are generally not an impediment.

Sample Cmaps:

Cmap 1

Cmap 2

Cmap 3

Cmap 4

The Uses of CmapTools in Planning

Rather than recreate the wheel (their instructions are better than ours), we've provided a variety of sample Cmaps that illustrate the different ways CmapTools can be used. The uses depend, in large part, on the approach to problem-solving and to purpose of the Cmap.

Planning a Process (Cmap 1): Developed to explore and create the Greenbrier County comprehensive plan process. Additional comments were included based on conversations with staff and with members of the Planning Commission. (Clustering)

Planning & the Rational Model (Cmap 2): A course handout designed by Dr. Diane Zahm to illustrate the rational model for her students. (Concept Modeling)

RFP Response (Cmap 3): Developed as part of a response to a Request for Proposals from a Planning District in West Virginia. The project brought together four separate agencies to address economic development and hazard mitigation in four flood-prone counties. (Project Organization Chart)

Greenbrier Community Workshop (Cmap 4): Develop ideas for each of the plan elements, including policies, goals, objectives, and strategies. Preliminary list of ideas, using a cluster approach for brainstorming. (Clustering)