

# Locating in Conceptual Space: Using Mapping Tools in Teaching

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## Presentation Summary

Mapping is a well-known facilitation tool widely used for structuring problems and generating critical thinking. It focuses individuals on the concepts and links they use to make sense of their world and their knowledge. Maps are very much like street maps or high-way maps – they help individuals locate themselves in space, in this case, conceptual space, and help figure out what directions to take, what pathways exist from here to there (Bryson et al., 2004).

The use of mapping tools in teaching courses becomes more frequent as many fascinating, easy in use visualisation software tools are available nowadays. Maps can be used at all stages of course preparation, teaching and evaluation. They really prove to be effective in giving instructors a continuous improvement process in teaching the course due to visual multicolored representation that establishes a landscape, or domain.

To start with, a causal map can be used to *develop a “graphical” syllabus* that shows not only the topics to be covered in the course, but also how those topics are related to and dependent on the other topics in the course. Providing these maps to students in the form of a “graphical” syllabus can supplement and clarify the typical text syllabus (Biktimirov, Ernest 2003; Hayes et al, 2007). Linking all different parts of the given topic also helps “the teacher to explain why a particular concept is worth knowing and how it relates to theoretical and practical issues both within the discipline and without” (Allen, B.S. 1993). It can aid instructors in determining which topics should be taught in a course, how these topics might be grouped and sequenced, and the important inter-relationships among the topics that should be stressed. Mapping can help develop courses that are well-integrated, logically sequenced, and have continuity.

Secondly, in a class setting a visual dynamic representation of the materials in a map format will allow an *interactive presentation and capture student's attention*. Using only textual materials and formulas or diagrams in PowerPoint slides is quite

"dry" and do not stimulate brain while mapping process increases students' motivation and understanding by integrating concepts and supports a holistic style of learning. They present the "big picture" before mastering the details (Felder and Silverman, 1988).

Maps *provide a structure to the class session* and help students to figure out how different ideas are connected to the main topic in a dynamic graphic format. They serve as a useful guide in a conceptual space of a course. An instructor can focus student's attention on the particular part of the map, discern specific related issues, and study them more in depth if needed.

The major advantage we have with a computer drawing of maps is speed. It is fast to create maps with a computer, and students enjoy watching the maps appearing before their eyes, very quickly. Using such visualisation mapping software tools as FreeMind, MindManager, SmartDraw, Compendium maps, MindDoMo or Decision Explorer enable to quickly produce maps that look nice, insert images, draw links and nodes. An instructor can even build a map together with students in an interactive manner. In this way mapping helps "teachers design units of study that are meaningful, relevant, pedagogically sound, and interesting to students" (Martin, 1994).

At the next stage, maps can be *shared with students* on the Intranet as other materials and *provide the documentation* of what have been discussed in class.

Using mapping tools also reveals numerous possibilities for *assessment and evaluation of student performance*. The instructor can have the students draw their own causal maps at the conclusion of the lecture or a course to compare the students' maps to the expert map. The evaluation of a student's performance can be based also on covering the identified factors and their interactions. Mapping expands the range of processes to monitor how students acquire knowledge of relationships and dependencies in the interacting parts that forming a field of study.

I will illustrate the use of mapping tools at the different stages within the course on knowledge management (Bouzdine-Chameeva, Dupouet; 2008). They have been used for developing a "graphical" course syllabus, for preparing course support materials and handouts in advance, for stimulating interactions in the course, in a joint map building process in class sessions with students, for providing the documentation on the Intranet afterwards and for a final assessment of student's performance.

Ideally, maps serve an instructor and students in several ways: (1) help everyone better understand the core principles of the course, (2) help an instructor better communicate the field to students, and (3) motivate students, and (4) stimulate students' interest and finally (5) prepare the students to meet the challenges of an increasingly informationally intensive and globally competitive environment.

I believe that a wider use of modern visualisation mapping software tools will contribute to a significant improvement of students' learning of any discipline. My experiences with using mapping in different teaching contexts provide evidence that it can be employed successfully for helping students orienting in a conceptual space of the course topic which facilitates their learning process.

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## **Brief Biography**

Dr. Tatiana Bouzdine-Chameeva is a full professor in BEM - Bordeaux Management School in France, she was Head of the Department of Information and Management and is the leader of the Research Pole on "Decision, Performance and Management". She holds a Ph.D. in applied mathematics from Moscow State University, Russia. She was an invited lecturer at University of Kyoto in Japan, Warwick Business School at the University of Warwick in Great Britain, at IMD-International in Switzerland. She worked for Medtronic, has consulted for Northwest Airlines, Sogerma Services, Ford Aquitaine Industries, Legrand. She teaches courses in IS and decision analysis, project management and managerial decision-making. Professor Bouzdine-Chameeva is strongly interested in innovation in teaching simulation and visualisation.

Tatiana Bouzdine-Chameeva was awarded with the Fellowship of the Japan Society for the Promotion of Science, was the recipient of the Muskie Fellowship in the United States and the Ministry of Research and Technology Fellowship in France.

Professor Bouzdine-Chameeva's research is in management science, decision support and information systems as well as pedagogical issues related to business education. She is a co-author of several case studies and has published more than 100 articles and papers in internationally recognised journals as *Decision Sciences*, *European Journal of Operational Research*, *Revue Française de Gestion*.

She is an Editor-in-Chief of the *International Business Management Journal (IBMJ)*.