

Chapter XXXI

Unstructured Information as a Socio–Technical Dilemma

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ABSTRACT

The purpose of this chapter is to illustrate how access to information through the implementation of digital information and communication technology challenges traditional school practices and introduces dilemmas about democracy, school development, ethics, information management, and learning. Video data together with screen captures are used to present three cases where students try: to match questions to search expressions; to make decisions about whether sites can be visited; and how they make decisions about relevance and credibility. Data illustrate that information always appears to be unstructured to the students and that restructuring poses a socio-technical dilemma involving appreciation of ideological and ethical nature.

UNSTRUCTURED INFORMATION AS A SOCIO-TECHNICAL DILEMMA

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ogy challenges traditional school practices and introduces dilemmas about democracy, school development, ethics, information management, and learning.

Structuring, categorizing, and sorting can be considered to be a fundamental part of human cul-

tural activity (Bowker & Starr, 1999). Structuring information in terms of theorizing and building models, organizing disciplinary and professional knowledge, sorting data about citizens, organizing items in a data base or for that matter for a student report are activities that permeate modern society bringing about order. Still there are certain ambiguities in the discussion of students' work with information illustrating a socio-technical dilemma. Apprehending structure is considered to be an important aspect of learning. In course books and other educational media, structure appears to be considered to be there waiting to be apprehended. Internet is considered to introduce "*unstructured information*," thus lacking a structure to apprehend. Structure instead needs to be constructed. Embracing a modern technology that introduces "unstructured information" into education thus appears as somewhat of a paradox ultimately challenging the way we learn. We will approach the paradox first through a presentation of the ambiguous appreciation of its introduction, then we will continue by discussing implications of conceptualizing Internet based information as unstructured, anchoring the presentation in research on literacy. We will introduce a plug-in aimed at supporting students' efforts to structure information for reports. We will then introduce information management in education as a socio technical dilemma and present excerpts from three cases to illustrate how this dilemma may be studied. Finally we will relate it to issues of democracy and ethics.

THE AMBIGUOUS APPRECIATION OF INFORMATION AND COMMUNICATION TECHNOLOGY

Policies in many countries emphasize the importance of technology in education, presenting implementation as a national urgency tied to such goods as the welfare state, democracy, and the ability to compete in the global market place

(Cuban, 2001; Postman, 1996; Riis, 1999; Robertson, 2002). Consequently many governments have decided on policies designed to facilitate implementation of technology in education. A generic feature of these policies is an understanding of future students and workers as citizens in an information society/economy. As such they have a democratic right to become information literate and be able to use technology to find, retrieve and manage information.

The centrality of "unstructured information" in making sense of information and communication technology is reflected in the foreword to the English edition of the Swedish Government Communication *Tools for Learning* (1997/98:176, p. 12). There the Swedish Minister of Education asks how education is "affected by the constant availability of unstructured information?" The communication presents the challenge as follows, indicating that education is undergoing change:

Traditionally, teaching has been based on a textbook in which the various sections of the subject are usually presented in an instructive and orderly way. A different arrangement, using the Internet or teaching media, is for pupils to collect data from various sources; thereafter making presentations or reports based on the material they have collected.

A particular view on what it means to learn in the age of the Internet is presented. Students need to prepare for a society where "information management and processing make up an ever larger share of many people's occupational roles" (ibid., p. 8). Consequently it has become a democratic right to have access to and learn how to use modern technology to support this mode of working. At the same time order is traded for chaos as information structured by the text book is replaced by the unstructured information on the Internet represented by "various sources;" placing demands on the education system to teach students how to manage information and students to collect

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