

Learning in the Digital Age: (In progress)
Integrating Information Science with Digital Technologies
By
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“Our learning institutions, for the most part, are acting as if the world has not suddenly, irrevocably, cataclysmically, epistemically changed – and changed precisely in the area of learning”.

The Future of Learning Institutions in a Digital Age
By Cathy N. Davidson and David Theo Goldberg
with assistance from Zoe Marie Jones

The above quote came from a report funded by The John D. and Catharine T. MacArthur Foundation titled, “The Future of Learning Institutions in a Digital Age”. The report has been supported by a 50 million dollar initiative in digital media and learning. The significance of this report for educators is to alert all institutions of learning that a completely new pedagogical framework needs to be developed within institutions of learning to accommodate the influx of digital media into the framework of education and ultimately to how students today and in the future will learn dramatically different from students prior to the internet revolution.

The picture above indicates what a learning environment may look like for the students of today. Shown is the laptop, a digital camera and digital video camera, a cell phone capable of downloading photos, files or emails from the computer and a digital voice recorder for making podcasts. This is just the beginning for there are many other possible combinations of currently available digital hardware such as iPhones, iPads, and even video conferencing capabilities.

Terminology associated with all these new technologies is referred to as collaborative learning, distance learning, participatory learning, computer assisted learning and the list goes on. These terms which have been created are used to describe the way by which people are interconnected using on-line technologies over the internet as opposed to learning that primarily uses text books and/or traditionally based research techniques which rely primarily on printed documentation.

Granted there is a blending of both the older forms of media from which to learn ideas but there is an increasing amount of dependence on learning with digital technologies. The problems as pointed out in the MacArthur Foundation report is that there are no pedagogical frameworks in place in any learning institution that recognizes the very dramatic way in which students uses these new digital technologies to learn any given subject.

Learning in the broadest sense is understanding something never before considered or thought about. However, how one goes about acquiring information which can be converted into usable knowledge is a very complex matter. To help solve the problem of management of information an introductory guide to information science has been written by Dr. Anthony Debons professor emeritus of the University of Pittsburgh. It is within his new book Information Science 101 (Debons 2010) that Debons introduces his “Augmented Data, Information, and Knowledge (ADIK) System”. What Information Science 101 offers to the student is a way to understand and manage all the new material that is being generated each day by many different media formats. Debons refers to the work of Douglas Englebart of Stanford University to better help define augmented data.

By” augmenting human intellect”, we mean increasing the capability of a man to approach a complex problem situation, to gain comprehension to suit his particular needs, and to derive solutions to problems. Increased capability in this respect is taken to mean a mixture of the following: more rapid comprehension, better comprehension, the possibility of gaining a useful degree of comprehension in a situation that as previously too complex, speedier solutions, better solutions and the possibility of finding solutions to problems that before seemed insoluble”. (Englebart 1962, 1)

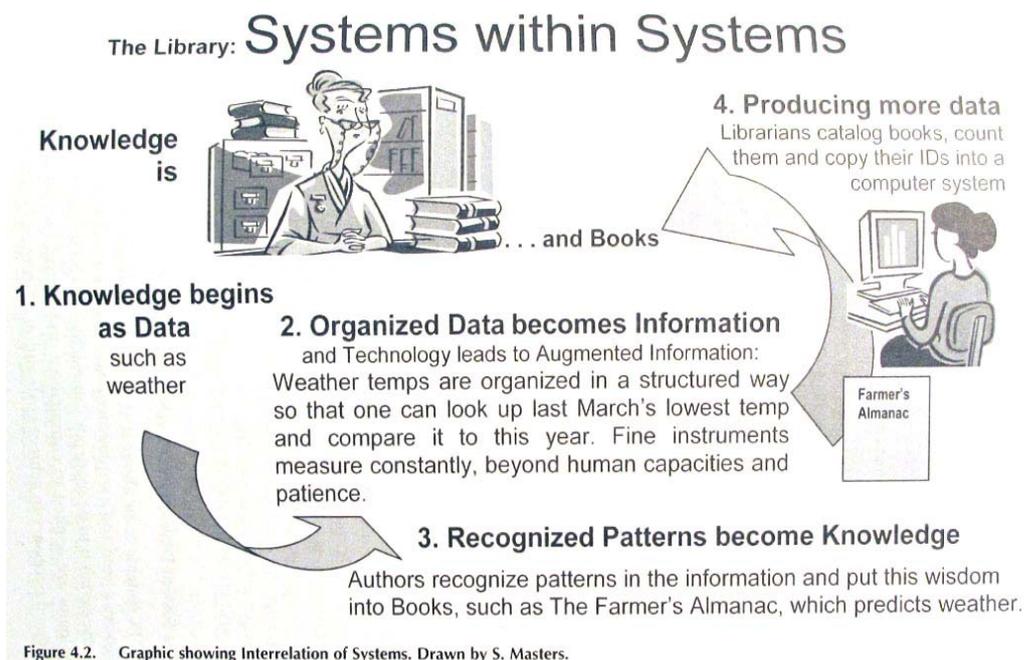


Fig. 1. ADIK System

An example of how an ADIK systems works is show in (see figure 1.). When various technologies are used and combined with people to achieve a specific goal then an ADIK system has been initiated. These systems aid in how we as humans collect and interpret information. Digital technologies of today collect data in many different formats all of which can be stored in the computer. The data needs to be organized and put into folders and managed so the data can be retrieved easily and used for any given project. Once the data is stored it can be displayed in many different ways.

It can be displayed as the raw data such as images or sound or these file types can be organized into other categories and arranged by type. Once the raw data is organized it enters the information stage. The files have meaning as they are placed in a reference system familiar to the user. If this information indicates a relationship that was unseen before the data was placed into a manageable system it can be said that knowledge is then derived from the information.

So then we have two major components in the acquiring of data from the outside world. The first is the device that has captured the data, and secondly we manage that data into manageable folders and files on our computer.

The challenge is to introduce to the student these two forms of digital technology and guide the student to using the technologies to understand how to get started with capturing data from the outside world and then manage that data.