

The lifecycle of knowledge as seen from the learning sciences

Christopher Hoadley, July 2011

My background is in the learning sciences, which implies some important ideas about my stance towards the world and towards my own scholarship. As implied by the word sciences, there is implied a quest for truth (whether ‘big T’ or ‘little t’ truth, objectivist, interpretivist, or otherwise) driven by empiricism and decidedly by an enlightenment heritage. It also suggests my core focus on both learning and on education. The focus on learning implies a certain attitude towards the status of knowledge and information. Rather than taking a view of information resources as unproblematic repositories of knowledge (as some scientists or some librarians do), or treating knowing as an interpretive act like the construction of meaning from information (as literary and artistic theorists typically do), learning scientists tend to inhabit a space of pragmatism, where knowledge is sometimes understood to be an unproblematic aftereffect of information comprehension; sometimes as a situated property of people, and their practices in context; sometimes as the result of complex but objectifiable psychological processes; and sometimes as inherently unknowable fragments of human experience. What links many educators’ stances is a focus on knowledge as a goal state, and information resources as a primary tool to reach that goal state. The educator’s perspective on knowledge invokes a design orientation—while not all learning scientists are interventionists with an agenda for others’ knowledge, it is certainly far more interventionist than, for instance, pure psychology or anthropology. Indeed the learning sciences could perhaps be more legitimately called a form of engineering rather than a social science.

Modern information technologies have influenced all disciplines, but certain institutions: research and scholarship, librarianship and curation, publishing and media, and most of all education, have been deeply affected. What these domains all have in common is a focus on some portion of the lifecycle of knowledge. As an educator, I know that knowledge does not exist independently of the knower, and that what one person knows is not unproblematically transmitted between individuals. The heritage our modern culture brings is one of a division of labor in the lifecycle of knowledge, which can be simplistically stated: innovators and researchers generate knowledge, they write it down and turn it into information so that it can be filtered and disseminated by publishers, and then delivered by a variety of more or less mediated channels, such as mass media, curated collections such as libraries or museums, or through instruction in the classroom. It is then up to the person to both learn this information, and to apply it to their particular problems. When someone does this, they are said to know something. To be clear: our current division of labor in the lifecycle of knowledge, all of our institutions, are predicated on different functions in the management of information resources. Knowledge is not at the center of this division of labor; information is.

Yet, while this simplistic model of knowledge is often useful, it has weaknesses. One key presumption of this model of the knowledge lifecycle is that information can be used to record and transmit knowledge, with the assistance of some mediation. This does not match current theories of learning, which problematize knowing as a far more situated, social, and idiosyncratic phenomenon than digesting scraps of information into knowledge. Information technology, which attempts to accelerate the flow of information, paradoxically helps show the limitations of information as the growth medium on which knowledge is cultured. Knowledge is less accretive than perhaps any time in human history, even as (or perhaps because) information has become so much more accretive. Knowledge now evolves quickly, and is constructed on the fly for particular problems. Information is no longer the limiting factor in this equation; rather, social arrangements, agency, and most of all the learning process, are. It seems to me that the twentieth century presumed an educational model in which humans could be provisioned with knowledge in their childhood and expect to live off that store for the rest of their lives, with any gaps addressed by consultation with disciplinary experts (disciplines themselves are an interesting division of labor), or through reference to appropriate information sources. Now, the education we need is one that must assume rapidly changing needs, knowledge on tap and ad hoc knowledge (supported by so-called ‘critical thinking skills’ or ‘21st century skills’). Information, rather than a laboriously created resource of relative scarcity, is plentiful but far less organized or homogenized than anything the 20th century had to offer. As an educator, I tend to believe the core problem is the learning problem, and this has never been more true than it is today—if information is ubiquitous, the role of the educator (or curator, or librarian) is not to provision learners with information. Rather, it is to facilitate processes that allow knowledge to be constructed, preferably in situ, across its lifecycle. And this means that separating innovation and creation of knowledge from facilitation of learning is going to be decreasingly possible. I suspect there will continue to be a division of labor in the lifecycle of knowledge, but that different roles in the lifecycle of information resources will no longer be the key distinctions.

Position statement submitted to the Re:Enlightenment Exchange London, <http://www.reenlightenment.org/exchangelondon>