Interaction between Electronic Learning and Information Ecology

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Dear Editor

In the last two decades, the rapid growth of electronic learning through new technologies has raised the people's level of awareness and literacy. We are witnessing new means and methods of communicating new information to the public on a daily basis. The society, known as information society (because people constantly deal with information, and the information they receive affects their future decisions), can form various groups in different situations. In fact, society is made up of various groups affecting each other. The outcomes of these effects are visible inside or across these groups. If we consider the whole society as an information ecology, each small group is an Infotope and each person is an Infocenose.

Then the *environment* and *information elements* appear on the scene. It is obvious that environment includes all cultural and economic contexts in which information flows, and it is the "information elements" (individuals) that appear in various roles and affect the types and components of environments.

In other words, information ecology is a comprehensive study of information processing systems in subject fields, and discusses environmental circumstances and their models, processes and relations within a system, and the components of a system (1). From another perspective, the rules governing the effect of information on the formation and operation of ecological systems, such as people and human societies, are general (2). Infocenose affect each other and their Infotopes, which will in turn result in mutual and multilateral influence of Infotopes on one another, leading to survival and growth of ecosystems. On the other hand, the best result of learning is affecting and being affected by others; consequently, the group or society will be more active and dynamic. In information ecology, temporal effect is meaningful only when there is a difference in information potentials, and information transfer takes place in a way that the transmitting source of information is at a higher level in comparison to the receiving source, and the so-called "information transfer" takes place between the producer and consumer.

this compatibility is an essential basis in a learning process that can be generally

called the traditional educational system. It seems that there is a connecting link named analyzer (e.g. librarians) between producer and consumer.

In modern education systems, a great emphasis is placed on the use of technology. The best advantage of e-learning in this domain is helping the growth of information ecology, because in the past bridging the information gap was only possible by in-person approaches or via books. But today through modern technologies, people can satisfy their information needs in virtual space. In the meantime, one should also consider the role of information flow in relation to the differences in potentials. For instance, information technology (from emails in the old days to modern social networks) can facilitate and expedite this flow of information and reduce potential differences. As emphasized by *Ruzkoski and Moore* in their debate on the role of information ecology from technology perspective, the information ecology cycle can be enhanced and the differences in information potential can be virtually reduced from distance, resulting in a stable ecosystem that causes some change in the information community. In other words, learning in the past and without technology can be only experienced in a minor ecosystem at a slow pace, but thanks to electronic and virtual learning, major ecosystems can also be covered now at a higher pace. This issue could be a starting point in merging these two areas of research in the same context.

A search in accredited information databases in the world reveals that the research in this domain is still quite limited. For example, in their study on the number of documents in information ecology domain in ISI, Wang and colleagues (3) demonstrate that the total number of documents in 1992-2013 period were only 138. However, research in this area is growing, and over the recent years this topic has turned into one of the popular topics among researchers and academics. The growth of experimental research methods can be considered as one of the main reasons

for this development. Accordingly, two approaches can be suggested for research in this area:

1. Assessing the e-learning topic in information environment and society (information ecology).

2. Analyzing E-learning contexts as an ecology along with the actions and reactions in it.

Both approaches are general, and any research in this area falls under a specific subcategory of these two approaches.

It can be concluded that although information ecology was developed years ago and has an interdisciplinary nature, it has not yet been extensively studied by researchers. It should be noted that over the recent years a number of new fields have emerged, which can create a powerful link with this domain. In the light of this discussion, e-learning can certainly offer a wide range of research options related to information ecology, and give rise to a totally new approach in research.

Funding/Support

Conflict of Interest
None declared.

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