

Tadashi Takenouchi

A Consideration on the Concept of Information Literacy. Is it really “necessary for all”?

Abstract:

It is often said that information literacy is ability which is “necessary for all” living in the information society. But the concept of information literacy is quite ambiguous, and its meaning is different according to different situation. To put the discussions on information literacy in order, the concept of “information literacy” itself is analyzed. Consequently, it became clear that when we discuss information literacy, it is “necessary” to specify its category, level, and field.

Agenda

Introduction

Categories

Fields

Levels

Information literacy and information ethics

Conclusion

Author:

Dr. Tadashi Takenouchi:

- Interfaculty Initiative in Information Studies, University of Tokyo, 7-3-1 Hongo, Bunkyo-ku, Tokyo, 113-0033, Japan
- ☎ +81 - 3 - 5841 5935, ✉ take@iii.u-tokyo.ac.jp, 🌐 <http://homepage2.nifty.com/tempura/>
- Relevant publications:
 - Jouhou literacy gainen no bunseki (Analysis on the concept of information literacy). In: Jouhou Shakai Shiron (Information Society), Vol.4, Tsukuba, 1999. pp. 5-14
 - Nakada, Makoto et al. (2002): The positive and negative aspects of “digital divide” theories. In: II. ICIE-SYMPOSIUM <http://www.capurro.de/augsburg2-papers.htm>

Introduction

The phrase "information literacy" has been used as a focal concept to encourage information education in recent years. It is often said that information literacy is an ability which is "necessary for all" living in the information society. But the concept of information literacy is quite ambiguous, and its meaning is different in according to different situations. Is information literacy really "necessary for all"? In reviewing various descriptions of information literacy, they do not seem to be "necessary for all." Usefulness in a specific field does not mean necessity for all. Before we claim that information literacy is "necessary for all", in relation to issues in information ethics such as the digital divide, the concept of "information literacy" itself should be analyzed from the viewpoint of its categories, levels, and fields. In addition, the principles of education concerning information literacy, and the relationship between information literacy and information ethics should be considered.

Categories

According to "fundamental informatics" proposed by Toru Nishigaki (2004), information is regarded as an effect that is formed inside a living thing (information), and the concept of information is distinguishable into three categories as follows:

1. Life information: Information in the broadest sense. Effects formed in all living things in general (not only human beings).
2. Social information: Information in a narrower sense. Meanings recognized by human consciousness, expressed, and shared by people.
3. Mechanical information: Information in the narrowest sense. Entities processed in machine readable (digital) form with latent meanings.

Nishigaki asserts that these distinctions are not static but overlaps each another, and the dynamism on the borders is an important theme in fundamental informatics. But I think this is a good viewpoint for considering information phenomena. When we relate these categories to the concept of information literacy, we can see three types of information literacy as follows. From the narrowest to the broadest:

- a. Ability to deal with mechanical information; skill and knowledge in operating information processing machines.
- b. Ability to deal with social information; skill and knowledge in practically using expressed and shared information.
- c. Ability to deal with life information; skill and knowledge in reading, understanding, and expressing unrecorded meanings or information. We can call each of them a) mechanical information literacy, b) social information literacy, and c) life information literacy.

We can refer to each of these as a) mechanical information literacy; b) social information literacy; and c) life information literacy, respectively.

Mechanical information literacy is the ability to operate information processing machines. It is often considered the same as computer literacy. With regard to the Internet, the ability to search or create web pages are representative skills. The phrase "information ethics" is often used for issues within this category. In the category of mechanical information literacy, ethical issues such as questionable ways of use of machines such as computer viruses, hacking, chain-letter e-mails, or violent language on BBS, are discussed.

Social information literacy is the ability to "read" or interpret the meaning of information expressed and shared by people, or express new information. It is deeply related to the contents or meaning of information. As for the ability to search and use recorded information with relatively fixed contents such as books, serials, or audio-visual resources, it is almost identical to the objectives of library user education and can be called "library information literacy." Flowing social information, especially critiques of mass media information, is related to the concept of "media literacy." In terms of ethical issues, social information literacy is concerned with journalism ethics, intellectual freedom, protection or release of government information, strategic business information, and so on. This field can be called "social information ethics."

Life information literacy is a kind of communication skill that has a wider meaning. It is the ability to understand "in-formation," that is, meanings generated inside living creatures, not recorded but seem to be shared by people, sometimes on the level of body and soul. (Strictly speaking, "in-formation" is never "shared" because it is peculiar to

each person. It is apparently the exchange of meanings, and for humans, we might call this kind of ability “human information literacy” or “cultural information literacy.” (Here I use the words “cultural” or “culture” to describe all kinds of patterns learned and shared by people.) In the field of humanities, this seems to resemble what Gadamer calls “*Takt* (tact)” in his philosophical hermeneutics to describe the ability of understanding others (fusion of horizons and its applications) (Gadamer 1960). Studies in the humanities depend on recorded information (social information), but its understanding and application belongs to another dimension (life information).

In Nishigaki’s fundamental informatics, the concept of “life information” is not limited to human information, but includes all kinds of in-formation among living creatures. But if we use the phrase “life information literacy” to refer to the ability of interspecies communication, it sounds rather metaphorical.

Fields

For every concept of literacy that can be applied, there are a number of “fields.” For example, in regards to the traditional concept of literacy on the level of national language, it is easy to understand that its field is obviously “the group in which the same language is used,” and there is no need to explain it in detail. But in the case of “information” literacy, it is necessary to specify the field where the concept of “literacy” should be applied, because there are various types of information and its use according to the positions or situations of users. Such literacy fields are made up of groups of people or specific targets with different attributes from those of traditional (linguistic) literacy fields. If we use an expression such as “ability to use information” without specifying its field, its meaning becomes so large and ambiguous that it ultimately makes no sense.

The lack of specifying the field of the concept of information literacy is also a problem that stems from ambiguity concerning the concept of “information.” But defining the concept of information is quite difficult, so it seems more useful to specify “for whom;” that is, the position, status, or situation of the information users. When we specify the position of the information users, it becomes easier to imagine what kind of information they often use and what kind of ability is expected to manage such information.

Each of us as an individual belongs to many literacy fields. In Barnardian’s sense, a person belongs to hundreds of “organizations,” and we can say that every organization has its own “literacy field.”

Although slightly dated, as a means of discriminating among fields (positions) within discussion concerning information literacy, three positions—for individuals, for business persons, and for citizens—are mentioned in the report prepared by the ALA (American Library Association) Presidential Committee on Information Ethics (1989). Here I suggest six distinctions as a trial: 1) For children studying at school; 2) for college students and scholars; 3) for business persons; 4) for information specialists; 5) for those who are handicapped in using information; and 6) for the general public having the right to vote. Perhaps there can be other useful distinctions of fields, and we can expect consideration of more detailed situations about those fields. But I do not think that “Internet users” or “cyber citizens” are good fields because they are too vast and ambiguous. It is better to distinguish, for example, what kind of community in cyberspace they belong to.

When we relate information literacy to information ethics, it is “necessary” for us to specify the literacy field to be discussed. For example, access to information is one of the most important issues in information literacy and information ethics. In the field of school education, some say that it is desirable for children to be able have unlimited access to the Internet, others advocate the opposite.

In my opinion, children do not have “complete” human rights, therefore, complete access rights should not be ensured. Children’s access to information should be restricted under parental authority similar to other rights. Parents often restrict their children’s television time, and the same should be done in case of the Internet.

I think that the right of information access for children should be considered not according to “human rights” for those who have the abilities to fulfill their responsibilities, but to “children’s rights,” restricted under parental authority; that is, the right to be educated or to avoid ill-treatment. Children’s rights never guarantee the same rights as adults, but are designed to reflect the early stages of their lives.

Levels

“Literacy” is a word that originally means the ability to read and write. Expanded new concepts of literacy such as “information literacy,” “computer literacy,” “media literacy,” “cyber literacy,” or “network literacy” are called “functional literacy” which means basic ability, skills, and knowledge. These concepts are, however, further expanded and sometimes used to describe well-grounded and highly skilled people. So, we can say that the concept of functional literacy can be understood in two ways as follows:

- a. Literacy with a negative meaning, as being a necessary condition, or having elementary skill or knowledge to participate or act in a specific field.
- b. Literacy in a positive meaning, as a sufficient condition, being well-grounded or trained in a specific field or a kind of power for self-realization.

They are apparently different concepts, but they are often confused because the former is actually part of the latter. It is not useful to deal with both of them equally, and may even result in misinterpretations and negative effects in education or making policies on information literacy. The most probable case is that all kinds of information literacy would be thoughtlessly regarded as “necessary” and be listed as “subjects to be taught;” if such is the case, then time and money for other subjects to be taught, which in reality are much more important than some kinds of information literacy, would be reduced.

To avoid viewing information literacy as an ideal and positive ability, it is “necessary” to consider what is really “necessary” for whom (in what field) before we plan or carry out any kind of information literacy education. From this viewpoint, the principle of information literacy education can be stated as follows:

- a. Information literacy as a necessary condition should be instructed from the viewpoint of the field where it is needed.
- b. Information literacy as a sufficient condition should be acquired by self effort and self investment.

In principle, to acquire the literacy “needed” in a specific field, they should be instructed in that field. For example, information literacy for university students to fulfill their studies should be educated in

their universities; Information literacy for business persons to fulfill their works should be instructed in the business organizations they belong to.

Other skills or abilities—given that literacy is a sufficient condition—should be acquired by self effort. “Self effort” means not only independent learning, but also to learn from others including paying tuition fees.

Information literacy and information ethics

In summary, we can say that the concept of information literacy should be specified for its category, field, and level. Considering these points, here I would like to briefly mention the relationship between information literacy and information ethics.

In today's digital divide theory, there are two main foci of issues in information ethics: First, the percentage of Internet diffusion (which is a “divide” in infrastructure), and secondly, the “divide” of information literacy. This is a problem that is mainly related to the category of mechanical information literacy. However, mechanical information literacy or computer literacy should not be regarded thoughtlessly as “necessary for all.” We have to consider if this type of literacy is really a necessary condition.

The population of Internet users in Japan was about 62,844,000 people as of February 2004. That is almost half of the entire population. At least 78.1% of the total number of families includes at least one member who uses the Internet; families with at least one Internet user at home are 52.1% (JIA,2004).

But, for example, our survey undertaken in July 2002 showed that there is no relationship between computer literacy and income or social position (Nakada et al. 2002). Until now, it is not realistic to claim that a digital divide based on a gap in computer literacy causes serious social problems.

In fact, we can see problems caused by too much dependence on the Internet almost every day. So, computer literacy as “necessary for all” is not a valid argument at least in Japan. It is in specific fields such as academic or business fields that computer literacy is regarded as a necessary condition.

For example, according to a report by Dentsu Institute for Human Studies, one of the foremost

private research institutes in Japan, "information literacy" of the Japanese is lower than that of Americans, and we should catch up with them (DIHS 2003, 2001). But I think this conclusion is seriously flawed. The concept of "information literacy" in this report consists of "skill factors" (some PC skills) and "mind factors" (positive attitudes towards using information for business). But the relationship between the two factors is unclear, and all the factors are treated equally. What is more, it is said that this is "necessary for all" living in the information age and those who can acquire this ability will win; others lose in modern society, although only information literacy for business persons is mainly discussed in this report. This is a remarkable example that shows how discussion on information literacy without specifying its category, field, and level leads to confused and faulty conclusions. But what is more serious is that this wrong conclusion is often cited in many other publications or the news media as if it shows a significant situation.

As to social information literacy, for example, library information literacy as a necessary condition for college students and for high school students is different. But guidelines put out by the Japan Library Association (JLA 2001) show almost the same contents for both, and specific conditions of college or high-school students are not considered in detail. That is, the guidelines pertain to information literacy as a sufficient condition in general, and do not elaborate on the necessary condition. Although these kinds of guidelines are useful and significant in terms of concretely showing the whole vision of library-use education, what is "necessary" and what is not necessary for each of the targets should be considered. For school children, it is "not necessary" to learn all of what is considered to be library information literacy. In this manner, it is not until its field is specified that the concept of information literacy becomes clear if it is a necessary condition.

In any case, if we had enough time and money, to acquire information literacy as a sufficient condition is "desirable." But in real life, the amount of time and money we can spend are limited, so we should give shape to the concept of information literacy as a necessary condition.

I do not deny all efforts to cultivate information literacy as a sufficient condition. I repeat that it is "desirable." But it should be acquired by "self effort."

It is also the same direction as what Capurro aims at in his study on information ethics. We can see the point of issue: Information literacy as technologies of the self in the modern information / message society (Takenouchi 2004). As this is such a major point of issue, I would like to discuss it at another time.

Conclusion

Is information literacy "necessary for all"? Now we can answer this question in the following manner: It is impossible to conclude such without specifying the category, field, and level of the concept of information literacy in each situation. If we do not care about such matters, discussions will be confused and may lead to faulty conclusions. This is also true in the cases of educational or ethical issues. Although information literacy with different categories, fields, and levels might have no relationship to one another, issues of information literacy as a whole are deeply related to the problem of information ethics in a wider meaning; that is, the problem of "living in the information age." This analysis can be a starting point for developing the discussion on the relationship between information literacy and information ethics.

References

- American Library Association Presidential Committee on Information Literacy (1989): Information Literacy. In: Blanche Wools ed.: The Research of School Library Media Centers: Papers of the Treasure Mountain research retreat. Park City, Utah. pp. 83-97*
- Dentsu Institute for Human Studies (2003): Seikatsusha, Jouhou Riyousha Chousa Report 2003, i-Life - Jouhou Shakai ni Ikiru (Report on Life Styles and Use of Information 2003, i-Life - live in the information society).*
- (2001): *Keitai' de mietekita Nihongata Jouhou Shakai (Japanese Information Revolution seen from Cellarphone).*
- Gadamer, H.-G. (1960): Wahrheit und Methode: Grundzüge einer philosophischen Hermeneutik, Tübingen, Mohr. 6. Auflage, 1990.*
- Japan Internet Association (2004): Internet hakusho 2004 (Internet White Paper 2004). Tokyo: Japan Internet Association.*
- Japan Library Association Committee on Library User Education (2001): Toshokan Riyou Kyouiku Guideline Gassatsu ban – Toshokan ni okeru Jouhou Literacy Shien Service no tameni (Guideline of Library User Education, total version – To Support Information Literacy in Libraries). Tokyo: Japan Library Association.*
- Kimura, Tadamasu (2001): Digital Divide towa nani ka – Consensus Community wo mezashite (What is Digital Divide? – Toward the Consensus Community). Tokyo: Iwanami Shoten.*
- Nakada, Makoto et al. (2002): The positive and negative aspects of "digital divide" theories. In 2nd ICIE-SYMPOSIUM <http://www.capurro.de/augsburg2-papers.htm>*
- Nishigaki, Toru (2004): Kiso Jouhougaku - Seimei kara Shakai e (Fundamental Informatics - From Life to Society). Tokyo: NTT Publishing.*
- Takenouchi, Tadashi (2004): Capurro's hermeneutic approach to information ethics, International Journal of Information Ethics, Vol.1. http://container.zkm.de/ijie/ijie/no001/ijie_001_06_takenouchi.pdf*

Proceedings of the symposium "Localizing the Internet. Ethical Issues in Intercultural Perspective" sponsored by Volkswagen*Stiftung*, 4-6 October 2004, Zentrum für Kunst und Medientechnologie (ZKM, Karlsruhe)