Information evaluation and information ethics

The module objective is to introduce you to the issue of ethics, or **information ethics**. This module should help you get a better idea of the information ethics and, at the same time, point out ethical issues you may come across in information practice, and help you to get oriented in them. You will become acquainted with **ethical codes**, which should be observed by those working with information.

Module objective:

- to clarify what ethics and information ethics are

- to become acquainted with some of the ethical codes

- to understand what ethical issues there are in information practice

- to be able to apply selected criteria of information sources quality evaluation

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1. MODULE INTRODUCTION

Now you will become acquainted with the way you may assess the required information and based on what rules you may work with it. It is not a random activity; rather, it is a process with given principles and rules, by the observation of which you will make sure that your information is relevant. As a result, we will present you with the principles of information evaluation and information ethics, which you should observe while working with information.

2. INFORMATION EVALUATION

Too much information may destroy information as such. With a vast increase in information, there is an increasing need of distinguishing criteria. It is difficult to tell what information is reliable and what is manipulated, whether an information source is serious or not etc. The ability to evaluate information is among the skills necessary in order for you to get oriented in the world of information. Information evaluation is thus one of the key components of information literacy. In short, it is an identification and separation of good-quality information.

2.1 INFORMATION QUALITY

Quality in the field of information means the ability of a product or service to meet the needs of a certain user or group of users. There is no absolute level of quality; quality, that is, always depends on the related needs. What is considered as good-quality for one person does not necessarily have to be good for another.

Data and information quality is a multi-dimensional term because it includes aspects such as **timeliness, availability and credibility.**

With regard to quality evaluation, we may distinguish between **inherent** and **pragmatic** quality. **Inherent** information quality is given by correct and exact data or the degree to which data reflect real-world objects they should represent. **Pragmatic** information quality is a value acquired by the user while using information.

2.2 EVALUATION CRITERIA

There is a large number of criteria sets. **Information professionals** usually participate in **establishing evaluation criteria**; these people have long-term experience with information sources and the search for good-quality information.

There are no clearly defined criteria for evaluating the quality of a source. The difference lies between the evaluation of convenient printed sources (in which case the materials have already gone through an editing process - editors) and the evaluation of information sources which are on the Internet (in which case the way of checking is on a very low level).

Examples of information evaluation criteria:

- **Relevance** - the extent to which data meet the purpose of their use.

- **Accuracy** - how accurate the used data are (usually measured by means of statistic characteristics of errors, e.g. standard deviation).

- **Timeliness** - when the data may be updated.

- **Accessibility** - how accessible the already existing data are. Accessibility barriers may be technological (e.g. network capacity), legislative (e.g. unsolved protection of personal data), or processing (e.g. unsuitable or insufficient information).

- **Comparability** - evaluates the possibility to compare but also to connect data from various sources. There may be problems with the uniformity of formats or methods of acquiring data. An example may be difficulties while creating a citizen register (because of the address format).

- **Coherence** - it means to what degree the data was created with regard to the result of the same rules.

- **Completeness** - it means what part of potential data is stored in a database.

Other evaluation criteria may be:

- ✔ the **purpose** of an information source, or the target group of users (a source intended for the general public or a specialized group).

- ✔ the **content** of an information source (the level of content is affected by e.g. focus, coverage, scope, the degree of particularity, the degree of completeness, retrospective, the content nature (i.e. facts, thoughts, research reports etc.), links to other sources, language quality etc.).

- ✔ the **authorship** of an information source (the most important factor is stating the entity responsible for the given source - an author or institution identification; a good name of the given source, author or institution also plays a major role).

- ✔ the **accuracy** of an information source (factual accuracy or mistake-free information).

- ✔ the **topicality, administration** of an information source (means to what degree the given source reflects the current state of the issue, while the used administrative mechanisms should ensure this topicality).

- ✔ the **accessibility** of an information source (among the factors affecting accessibility are: access rate, software limitations, costs, reliability, the ease with which the source can be found, access security, other access limitations, e.g. the need to register).

- ✔ **presentation and arrangement of information** (this includes a help with finding information within the source, pictures, frames, design etc.).

- ✔ **an easy use** of an information source (support services which should generally facilitate the users' work).

- ✔ **a comparison with other sources** (determining the information source quality based on comparable sources)

An overall quality (results from a general impression based on feelings and experience, the perceived value and usefulness of the source, or information included).

With regard to information quality, we may come across various types of defects:

- a disagreement with a relevant   definition,

- incomplete values,

- inaccuracy,

- redundancy,

- non-equivalence of distributed information,

- opacity.

AN OVERVIEW OF CONCRETE QUESTIONS DETERMINING THE INFORMATION SOURCE QUALITY

Does the source have a retrospective scope?

Is the information based on research or a similar approach?

Are the times when the source is unavailable specified?

Is the source generally known?

Can news be easily identified?

For what target groups is the source intended?

Is the source unique with regard to its content or format?

Is the source user-friendly and is it possible to work with it intuitively?

Is it possible to get comments and observations from other users?

2.3 SERVICES FOCUSED ON REVIEWING AND EVALUATING INFORMATION

Reviewing and evaluating services use either graphic forms (e.g. asterisks) or numerical values in order to determine the source quality.

A point to think about: Not even evaluating and reviewing services do not necessarily have to determine the source quality. Criteria, that is, may be based on personal impressions. It is thus questionable whether these services can actually help users orient among various sources.

2.3.1 QUOTATION ANALYSIS

Information evaluation, above all in the world of science, is closely connected with quotation analysis. Among the basic tools used in quotation analysis in order to evaluate scientific periodicals and articles are quotation indexes and the so-called impact factor.

The basic starting points when evaluating a scientific work are as follows:

- Every author usually uses a number of sources while writing an article, an anthology contribution etc. They may tie up with them, use them as arguments in order to support their results etc.

- It is expected that if an author quotes from another author's work, this work is interesting in one way or another, and its author is scientifically renowned.

- It is also expected that if a journal article is quoted, this journal has a certain scientific level.

2.3.2 QUOTATION INDEX

The task of quotation indexes is to follow quotations (in the terms of responses). The most well-known quotation index is the **ISI Web of Knowledge** portal created at the American Institute for Scientific Information (ISI), which offers the following tools:

1. **Web of Science** may be used as a common bibliographic database (search according to the author, topic, year, journal etc.), but mainly according to the rate of quoting (that is, what articles by a given author have been quoted - how many times, by whom, where).

2. **Journal Citation Reports** provides the results of quotation analyses related to journals - you can find out: what journals are followed this way, followed journals based on fields, countries, publishing houses; basic information on the followed journals (the number of articles and quotations), quantitative characteristics evaluating the quality (impact factor, immediate response index, the so-called quotation half-life etc.) - everything in time lines for the past 10 years.

3. Another well-known and extensive quotation index is **Scopus** which follows quotations in more than 14,000 journal titles. Scopus uses a numerical indicator evaluating the scientific worker activity; this indicator is called Hirsch index, or h-index. It is based on the principle that in a list of a given author's articles (listed according to the rate of quoting), the h-index is equal to the order number of the article which is the last one in the list to exhibit a quotation rate equal or higher than the order number.

2.3.3 IMPACT FACTOR

Impact factor measures the quality of scientific journals, and is defined as a ratio of the number of quotations recorded for all articles published in a given journal for the previous two years to the total number of all these journal articles. Nowadays, the impact factor significantly affects the evaluation of scientific publications. If an author publishes in a journal with a high impact factor, then their work is considered better within the sphere of scientific and publishing activity.

3. INFORMATION ETHICS

In the following section we will present information ethics. Now that we know where and how to get required information and how to filter it, we have to describe this information, that is mention where the given information is taken from. And why should we do so? You will find out in the following section.

3.1 SOMETHING ABOUT ETHICS

Ethics in the original sense of the word is a philosophic discipline (in German-speaking countries it is also called practical philosophy) the subject matter of which consists of evaluating judgments, distinguishing between the **good** and the **bad**.

The word ethics is derived from the Greek word **ethos** = a habit, custom, but also peculiarity.

The concept of ethics is often confused with morality. Morality is a variable, historical and culture-specific set of evaluating judgments, habits, opinions, ideals, rules, institutions and norms which are observed by people in their practical moral conduct.

Definition

It is a discipline concerned with the right conduct in human society. Ethics may be understood as an application of norms of ethical nature, as a set of principles intended for solving moral issues and conducts. Ethics as a branch of science tries to find and justify general principles on which morality and derived norms are based.

Morality may alternately be called: morale, morals - it is only a part of ethics, which is insufficient.

Ethics differentiation

There are various types of ethics according to individual fields. E.g.:

- Philosophic x religious ethics - a man acts to demonstrate his gratitude to God or gods.

- Heteronomous x autonomous ethics - ethical principles determined by external forces x an individual or a society determines its own ethical principles.

- Individual x social ethics - moral questions of an individual x moral questions of social groups.

- Professional ethics - applies general ethical regulations, the so-called ethical codes, on concrete professions. Then we may speak of the ethics of doctors, judges, teachers, reporters or librarians.

3.2 INFORMATION ETHICS

Information ethics is a sub-part of ethics dealing with moral principles and rules related to information processing. It should thus focus on the principles of adequate behaviour and the application of these principles in information practice.

The question remains whether information ethics is a mere application of general ethics on the information environment, or it is a brand new ethical theory created due to significant changes related to new phenomena such as the Internet.

Information ethics comprises the ethics of all people participating in information communication, i.e. **the ethics of information creators** (authorship ethics), **the ethics of information mediators** (librarians, information workers, journalists, publishers, interpreters and translators, editors etc.) and **the ethics of information users**.

3.2.1 INFORMATION CREATOR ETHICS

The creator has the following duties, among others:

- avoid spreading information triggering hatred,
- communicate true information without half-truths, ambiguities etc.,
- quote properly (see quotation ethics below),
- write to the point, briefly and clearly,
- avoid multiple publishing of the same article in order to avoid an unnecessary increase in the amount of published documents,
- not to write against one's own moral judgment.

3.2.2 INFORMATION USER ETHICS

The user has the following duties, among others:

- help the information mediator with meeting the needs (e.g. cooperate on the completion of vague formulations),
- use adequate information,
- share information with others,
- accept even such relevant information which is unpleasant,
- search the best possible information.

3.2.3 INFORMATION MEDIATOR ETHICS

The mediator has the following duties, among others:

- respect the copyright,
- provide information in time,
- ensure the same access for everyone,
- be responsible for the accuracy of provided information.

3.3 THE SUBJECT OF INFORMATION ETHICS

The subject of information ethics is not only an evaluation whether a certain way of handling information is right or wrong; it also includes the impacts of certain structures used for information transformation.

Information ethics thus focuses on two major areas:

1. **Micro-ethical** issues, i.e. issues related to the information work itself and individual behaviour, e.g. intellectual property protection.

2. **Macro-ethical** issues related to the impacts of information technologies on society, e.g. information society vulnerability.

Examples of issues:

- Observation of copyright (micro-ethical issue).

- Disregarding quotation principles (micro-ethical issue).

- Trading of personal data (micro-ethical issue).

- Trade secret protection (micro-ethical issue).

- Connection of information technology and power (macro-ethical issue).

- Cyberspace and an interest in real-world events (macro-ethical issue).

- Digital division of society (macro-ethical issue).

- Information technology at schools (macro-ethical issue).

3.4 CODIFICATION

Codification of certain rules of adequate action in information practice is related to information ethics. Such codification usually takes place on three levels:

- legal rules (press law, personal data protection act, copyright etc.),

- **international treaties** (in the field of declared human rights, e.g. the right to information, the right to **privacy protection,** freedom of speech etc.)

- and **professional codes** in the fields of press, libraries, information etc.

Among ethical codes are for example:

✔ The Ten Commandments of Computer Ethics,
✔ ACM Code,
✔ Netiquette,
✔ ALA Code,
✔ Press Code,
✔ Ethical Code of Interpreters and Translators,
✔ Librarian Code of Ethics (draft),
✔ International Ethical Code for media workers,
✔ UNESCO Code for writing scientific publications (shortened version).

A mere observation of codes causes a number of other issues. With regard to general ethics, it is apparent that every culture creates its own ethical code. A question arises whether there may be an ethical code of a universal validity. Information ethics poses a similar question - are there any generally shared principles which might be found in the above mentioned codes?

Generally shared principles which should be observed:

1. Information should be freely spread.

2. Spreading information should not cause anyone harm.

3. False information should not be spread.

4. It is desirable to generate new information.

5. Everyone is responsible for the consequences of their actions in the information field.

Some principles which may be shared by more codes cannot be universally applied. Information practice often shows that the observation of one principle may be against another principle.

Examples include problematic cases of information ethics which originate due to disputes between individual principles of adequate conduct in information practice.

The following **principles** are usually drawn into dispute, for example:

    I.   Right to information versus privacy protection.

    II.   Privacy protection versus ensuring the safety of citizens.

    III.   Privacy protection versus employee checks.

    IV.   Trade secret versus public interest.

    V.   Copyright protection versus social interest.

3.5 CONCRETE EXAMPLES OF PROBLEMATIC CASES OF INFORMATION ETHICS

While archiving e-mails intended for intranet communication in a company, it was found out that a worker had complained to her colleague about her employer's sexist behaviour. This e-mail was forwarded to the management, and it was decided to cut down this worker's salary. Is this action justifiable?

Due to the fear of terroristic attacks, cameras monitoring all goings on have been installed in public areas. Does the government have the moral right to do this?

A chemical factory keeps the means of producing a certain dangerous substance in secret; do the people living in the area have the right to know more information on the production technology, with regard to its impact on the environment and their health?

A government official suffers from a serious disease which may affect the way they perform their function; does this official have the right to keep their health condition from the public?

A school with a lack of financial resources buys a software for the teaching of mathematics; however, it does not have money for a multilicence, therefore it copies the software; is this justified?

3.6 INFORMATION ETHICS CASES WHICH YOU MIGHT ENCOUNTER DURING YOUR STUDIES

The most frequent case of non-ethical conduct which can be found in most student papers is the **failure to quote the sources** of information in a conventional way. Another example may be an **inclusion of literature which was not used** in order to lengthen the list of bibliography. The observation of quotation principles is very important because it allows for the paper to be checked, i.e. included data may be checked. The worst of all is **plagiarism,** that is copying or even downloading complete papers from the Internet. You can have a look at how to quote properly in the module How to quote properly.

4. SUMMARY

We hope that our module helped introduce you to the issue of ethics, or information ethics. You have surely gotten an idea what information ethics is about. Now you know what ethical issues you may come across in information practice, and how to orient in them. Without doubt, you will bear a relevant ethical code in mind while working with information. In the future you will surely try to evaluate the quality of information sources based on the above mentioned criteria.

Points to remember

- It is necessary to remember information ethics, so that we avoid trouble while writing our own scientific papers.

- You should also use information evaluation tools, but with some reserve; think about what is important for you and your work.