Information ethics in the context of information Literacy

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Abstract
The concept of information ethics is quite extensive. It is necessary to deal with it also with regard to information literacy, as prove recent and traditional concepts and definitions of information literacy with incorporated ethical aspects. Information ethics and information literacy are closely connected, as illustrates the RPT (R-Resource, P-Product, T-Target) model of information ethics created by Luciano Floridi1, Christine Bruce’s model of Seven Faces of information literacy, which deals with ethical aspects in connection with wise use of information2 and Nancy Tuana’s concept of moral literacy3. Critical thinking is perceived as necessary in the context of both information literacy and information ethics. As Richard Paul4 stresses, information ethics without critical thinking can lead to indoctrination. On the basis of these approaches were created visualizations of connection between information ethics and information literacy.

Keywords: information ethics, information literacy, critical thinking

Introduction

With the massive expansion of using ICT it was inevitable to deal with ethical issues in connection with the information environment. Experts in the field started to realize that it is necessary to adopt new attitudes and examine the situation from a new perspective required by new contexts, perspectives of information ethics and philosophical view. The theoretical framework of information ethics is vast and compelling, raises many interesting questions. One of them is the relation between information ethics and information literacy, especially critical thinking, which we will elaborate in the paper.

E. A. Buchanan and K. A. Henderson⁵ define information ethics in relation with applied ethics as „the formal application of ethical theory to information.“ Floridi⁶ in his macroethical philosophical approach summarizes that information ethics is patient oriented, ontocentric and ecological. The philosophical basis of information ethics Floridi derives from the philosophy of information, information ethics views as a branch of philosophy of information that investigates ethical impact of ICT on human life and society. Important message emerging from Floridi’s theoretical approach is that moral concern deserve all entities, which as information objects have an intrinsic (however minimal) moral value. From macroethical perspective Capurro⁷ describes intercultural information ethics as a field of research where moral questions are reflected on the basis of different cultural traditions. The reflection is needed on questions dealing with the impact of internet on changing local cultural values, traditional life and how do these changes affect the life and culture in a global and local sense. In narrower sense Capurro connects information ethics with cyberethics (ethics of the internet), which deals with new problems connected to new technologies.

Another key term we need to draw attention to is critical thinking. D. A. Bensley⁸ focuses on the analysis of broad concept of critical thinking which he does not consider sufficiently established and that „numerous problems remain concerning how to conceptualize it“⁹. Critical thinking is important educational objective and a pillar of information literacy but experts often disagree on what exactly critical thinking is, how to define critical thinking, how to achieve and teach critical thinking. One of the skills understood by critical thinking is good reasoning with the roots in the tradition in philosophy and rhetoric as the art of good thinking. There are however differences in the specific skills critical thinking constitutes of as listed by various experts in the field due to the differences in disciplinary focus. Another problem is using different terms when describing skills of critical thinking. Halpern⁹ notes that „critical thinking is more than successful use of particular skill in an appropriate context. It is also an attitude or disposition to recognize when a skill is needed and the willingness to apply it“. Halpern¹⁰ made the taxonomy of critical thinking skills which are related to:

- Memory (the acquisition, retention and retrieval of the memory);
- The relationship between thought and language (using questioning and listening strategies);

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Reasoning (drawing deductively valid conclusions);
Analyzing arguments (structuring and judging arguments);
Thinking as hypothesis testing (making of causal claims – when they can not be made);
Decision making (considering alternatives);
Problem solving skills (planning and finding strategies for finding a solution);
Creative thinking (brainstorming, visualizing the problem, gathering additional information).

It is needed to discuss information literacy as a part of the concept of information ethics. In this paper we are researching the connection between information ethics and literacy, possible links between them. We consider critical thinking as one of them and provide examples, such as definitions of information literacy with ethical aspects and various concepts of information literacy to support this idea. Critical thinking is necessarily the part of both information literacy and of information ethics. We can perceive critical thinking as the conjunction of information literacy and information ethics. In relation to critical thinking we will mention about the danger of indoctrination in teaching ethical thinking students, when the teacher tries to impose his ethical views and attitudes, his „truth“ on student.

1 The connection between information ethics and information literacy

Many approaches can be used towards information literacy, each of them stresses or implies different aspect, from more general ones trying to grasp information literacy in a complex way to more specific ones highlighting certain aspects. Lau\(^{11}\) in general definition describes information literacy as „knowledge and skills necessary to correctly identify information needed to perform a specific task or solve a problem, cost-efficiently search for information, organize or reorganize it, interpret and analyze it once it is found and retrieved, evaluate the accuracy and reliability of information including ethically acknowledging the sources from whence it was obtained, communicate and present the results of analyzing and interpreting it to others if necessary, and then utilize it for achieving actions and results“. This definition of information literacy contains ethical approach but with the emphasis on information sources. It is essential to incorporate the need of ethical aspects to all processes connected to information literacy.

According to SCONUL Seven Pillars of Information Literacy\(^{12}\), in the core model is used definition of information literacy as the awareness of gathering, usage, managing, synthesis and creation of information and data in an ethical manner. The ethical aspect is part of pillar dealing with professional and ethical organization of information and on the first place places the responsibility of informationally literate person. Other mentioned skills are: correct citing of resources, data protection, using appropriate techniques to manage data and so on.

In the Framework for Information Literacy for Higher Education\(^{13}\) is also stated definition of information literacy with ethical aspect: „Information literacy is the set of integrated abilities


encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning. It is needed to stress the ethical participation as a very interesting approach that demands further study and discussion. This definition points that information ethics is not only the ethics of information resources. We can elaborate on this further from the perspective of Luciano Floridi’s RPT (R-Resource, P-Product, T-Target) model of information ethics shown in Figure 1.

![RPT (Resource-Product-Target) model](image)

Looking at the revised macroethical version of the model, where all parts are incorporated in the infosphere, we can observe the connection between information ethics and literacy in complex way and set in the context of infosphere. Infosphere is a new term created also by Luciano Floridi. It is a new type of environment that is minimally the whole information environment consisting of information entities, their characteristics, interactions, various information processes and relations. We can look on the model closer for better understanding of Floridi's approach towards information ethics because it not only displays the vast field of information ethics and its subject of interest, but it can help us better understand relations between information ethics and information literacy.

Information ethics as an ethics of information resources (R) indicates the initial interest in the efficient, effective and fair use of resources. Floridi views information as extremely valuable for evaluation and action of moral agent (A) in moral context. Moral agent needs information for his moral behavior and thinking. Mentioned here are these aspects: quantity and quality of information, their intelligibility and usability. The approach is generally described by „triple A”: availability, accessibility and accuracy of information resources.

The second stage of information ethics as an ethics of information products views moral agent as the producer of information products and encompasses moral issues in relation with accountability, liability, libel legislation, testimony, plagiarism, advertising, propaganda, misinformation, deception.

Third stage, information ethics as an ethics of informational environment deals with moral agent affecting his informational environment. Floridi gives examples like breaching privacy or confidentiality, hacking, security of information, vandalism, piracy, freedom of expression, censorship, filtering and so on.

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The first stage of information ethics as an ethics of information resources in the context of information literacy stresses the quality of information resources and products, their accuracy, the second stage of information ethics as an ethics of information product points to the information literacy skills needed of the user (or moral agent) and the third stage of information ethics as an ethics of information environment can be related for example to ethical participation in communities of learning, as mentioned before or to relevant and true information, the use of which can affect the information environment.

Christine Bruce\textsuperscript{15} identified seven conceptions of information literacy: the information technology conception, information sources conception, information process conception, information control conception, knowledge construction conception, knowledge extension conception and the last but in this context most interesting one – the wisdom conception, which perceives information literacy as „using information wisely for the benefit of others“\textsuperscript{12}, more specifically described that a set of personal values and personal ethics can enable using information wisely. Resulting from this information can transform the user as the user can transform information. As an important part of this view of information literacy Bruce considers also knowledge base. Summarising, wise use of information means a combination of enhanced knowledge base and personal values. So the wise use of information includes exercising judgement (again with the connection to critical thinking as mentioned before), making decisions and doing research. Wise use of information according to Bruce involves also placing information in a larger context, which can also be connected to critical thinking. Bruce also mentions the role of technology, however she considers the role just as peripheral, as shown in Figure 2 below. As information are subject to the beliefs and values and attitudes, according to Bruce in this conception the role of information technology is not as important as the role of the user.

Richard Paul\textsuperscript{16} stresses that moral issues are part of our daily life and so is ethical thinking, „the world does not present itself to us in morally transparent terms“. He also emphasizes the need for critical thinking in the process of doing moral judgments: „...few have thought deeply about their own moral feelings and judgements... As a result, everyday moral judgements are often a subtle mixture of pseudo and genuine morality, moral insight and moral prejudice, moral truth and moral hypocrisy“.

We can find other connections (specifically to critical thinking and self-awareness) also in already mentioned Framework for Information Literacy for Higher Education\(^\text{18}\), which lists core ideas of metaliteracy – critical self-reflection, self-awareness and self-evaluation. Richard W. Paul and Linda Elder\(^\text{19}\) accordingly mention self-reflection as an important point. They consider each step in the process of critical thinking as inevitably tied to self-reflection and self-assessment.

There is the tendency to incorporate ethical aspects in approaches towards information literacy, ethical aspects are no doubt viewed as important part of the information literacy in general. In these examples of relations between information literacy and information ethics we can see the conjunction in critical thinking and self-awareness, which will be clearly shown in the context of moral literacy in the following text.

### 2 Moral Literacy

It is important to pay attention to moral questions connected to literacy that users in offline and online environment are obliged to respond to. Nancy Tuana\(^\text{20}\) considers ethical life as an achievement that needs to be continuously cultivated. The concept of literacy uses to „reflect the fact that the skills and knowledge specific to making ethical choices in life are learned

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capabailities requiring skills in which individuals can be more or less competent. The phrase „literacy“ reflects the fact that ethical behavior requires complex abilities and skills but it is also used to emphasize that the development of these abilities and skills can be and should be enriched through education. She defines moral literacy as the ability to recognize, evaluate moral problems.

This approach towards ethics and literacy indicates that moral literacy can be and is needed to be enhanced the way for example reading literacy is. Everybody takes numerous decisions concerning ethical questions on daily basis so developing moral literacy should be part of educational systems from early childhood. Moral literacy at schools is incorporated, teachers use various kinds of strategies to stress the importance of ethical thinking, there are different methods for teaching moral literacy (for example case studies, reading fiction) but we should not forget about moral literacy when researching and implementing literacy in various programs.

According to Tuana moral literacy consists of three essential parts: ethics sensitivity, ethical reasoning skills and moral imagination. Ethics sensitivity perceives as the ability to decide whether the situation involves ethical issues or not, implies awareness of the moral intensity of the ethical situation (seriousness of the harm and the urgency of action) and the ability to be able to recognize moral virtues or values in the ethical situation. Ethical reasoning skills involve understanding of various ethical frameworks, the ability to identify the validity of facts relevant in ethical situation and the ability to identify the values that an individual or group views as relevant to the ethical issue. Tuana views moral imagination as a key component of moral literacy and describes it as „rich and affective commitment to being ethical“. Each of these above mentioned parts suggests narrow connection to literacy and especially to critical thinking. There is the need to apply cognitive competencies such as evaluation, perspective taking (as part of emotional literacy), analytical thinking, ability to imagine myself in the situation of another, be creative in inventing alternative ways, empathy – appreciation of suffering and joys of others and so on.

### 3 Created visualizations

Based upon concepts and approaches to information literacy elaborated in this paper was created visualization representing the relationship between information ethics and information literacy (see Figure 3). Information ethics and information literacy are closely intertwined, one should not be taught without teaching other. The context in this case consists of cultural background which stresses in his concept of intercultural ethics Rafael Capurro22, personal and situational aspects. When talking about information ethics we need to keep in mind necessary skills of critical thinking, which is a crucial part of information literacy. When discussing information literacy we should not forget ethical aspects because information literacy without ethical aspects is meaningless. A student or user can have all skills necessary for him to be informationally literate but without the aim of ethical service the outcome will not be desirable. The conjunction is critical thinking which is a necessary part both for information ethics (to be able to analyze situation to the core, find suitable solution


and decide) and information literacy. Ethical thinking can not be explained without omitting its important part, critical thinking.

![Diagram](image-url)

**Fig. 3** The relation between information ethics and information literacy

Ethical thinking without critical thinking leads to indoctrination, resulting in students blindly expressing moral values of their teachers. Richard Paul\(^2^3\) points to the necessity of putting critical thinking into the heart of ethical curriculum, critical thinking not just for students, but also for teachers. He points to the fact that teachers often just pass to students their own moral blindness and close-mindedness, they want students just uncritically adopt their own beliefs, which they tend to see as exemplary to all morality.

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According to conceptions of literacy referred to in this paper, wise use of information\textsuperscript{24} and Tuana’s concept of moral literacy\textsuperscript{25}, we can see in Figure 4 created depiction of critical thinking in the context of information ethics and information literacy as seen in Figure 3. Critical thinking is part both of Tuana’s conception of moral literacy and Bruce’s conception of wise use of information. This demonstrates the central position of critical thinking when discussing information ethics and literacy and two main components of which critical thinking is part of: moral literacy and its parts (ethics sensitivity, ethical reasoning skills and moral imagination) and wise use of information and its parts (personal values and knowledge base) more specifically described before. Critical thinking tightly connects both information ethics and information literacy.

**Conclusion**

The aim of the paper was to stress the importance of ethical aspects in the context of information literacy and to show on the examples of the definitions and concepts of information literacy the tendency to incorporate ethical aspects. The necessity of incorporating ethical aspect into information literacy approaches is illustrated in the RPT model created by Luciano Floridi\textsuperscript{26}, in the Christine Bruce’s concept of information literacy as wise use of information\textsuperscript{27} and on the example of the concept of moral literacy portrayed by


Nancy Tuana\textsuperscript{28}. Crithical thinking can be clearly viewed as one of the conjuctions between information ethics and information literacy as it is perceived as one of the essential skills of information literacy. Richard Paul\textsuperscript{29} elaborated on the danger of teaching ethical thinking without crithical thinking: it can lead to indoctrination, when the teacher tries to impose his ethical views and attitudes, his „truth“ on student, who may uncritically adopt them. Based upon these approaches were created visualizations of the connection between information ethics and information literacy which illustrate Figures 3 and 4. Figure 3 demonstrates the connection between information literacy and information ethics and Figure 4 presents crithical thinking in the context of information ethics and information literacy.

There should be paid more attention to moral literacy, the ability to evaluate, recognize and analyze moral problems is also important part of information literacy skills. The aim of information ethics is to deal with information ethically, therefore moral literacy is an essential part in teaching information ethics and should not be overlooked. Without moral literacy we can not reach (and teach) information ethics, information literacy without ethical aspects is meaningless. Information literacy skills on high level do not ensure ethical manipulation with information. The key component is ethical critical thinking without indoctrinacion.


References


