Information Literacy as an Ethical Experience

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Abstract. The purpose is to present ethical challenges of information literacy and introduce the concept of ethical information literacy as an ethical experience. We ask the question: Which ethical components are decisive for ethical information literacy based on information experience? We apply content analyses of selected models of information literacy and information experience and results of a Delphi study on information ethics based on a consensus of 19 Slovak and Czech experts (a survey) and 6 experts (an online discussion.) Results are visualized in conceptual models of ethical issues of digital information. The final model of ethical information literacy experience represents ethical factors of ethical sensitivity, moral imagination, social and intercultural contexts and rules, tensions between people and technologies, values of truth and utility. We recommend inclusion of the ethical components into new models of ethical information literacy experience and apply them in further research and design of value-sensitive digital services.

Keywords: Ethical information literacy · information experience · a Delphi study · ethical sensitivity · value-sensitive design

1 Introduction

Information literacy as a practice is often driven by metacognitive features which are embedded in human information experience. Information ethics research can enrich our understanding of information literacy experience and help discover new dimensions of information literacy education. The purpose of this paper is to explore main ethical challenges of information literacy as a human ethical experience with regard to digital environment. We ask the main research question: Which ethical components are decisive for a new conceptual interpretation of information literacy as an ethical information experience? We apply methodology of inclusion of the analyzed information ethics studies into the concept of information literacy experience. We use the data from a Delphi study on information ethics in Slovakia and the Czech Republic, discourse analysis and concept modeling.

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2 Related Research: Information Experience, Information Literacy Practices and Information Ethics

2.1 Information Experience

The concept of information experience has been developed in the framework of information literacy studies based mainly on phenomenography, phenomenology and qualitative approaches to information literacy and information behavior research [1–3]. The main idea of information experience is based on experiencing the information world (both as objective and subjective mental representations, but understood in different ways by different people). Information experience means engagement of people with information and is driven by ubiquitous human information interactions [4], sense-making and socio-cultural contexts of information [5]. The anatomy of human experience includes the structural and referential aspects and the experience is dependent on person´s awareness / consciousness. The referential aspect represents the meaning of the experience and the structural aspect is composed of the internal (focus) and external horizon (background) [6]. Phenomenography points to diversity of experience represented by different categories, stories, perspectives, emotions, values, attitudes. The concept of information experience is closely connected to information literacy practices and human information behavior. Recently, information experience has gained wider attention in relation to digital information, and to epistemic, aesthetic and emotional values of information [7] focused on truth, understanding and practice. Crisis of information in digital environment and responsibility are studied in contexts of information experiences as sources of values [8, 9].

2.2 Information Literacy Practices

Information literacy practices are based mainly on information experience of different communities related to skills, abilities, attitudes and metacognitive self-regulation. In this context, we can apply the definition by Taylor and Jaeger [10, p. 29]: “Information literacy is a constantly refined practice of processing, accessing, understanding, critical evaluation, and using information in ways relevant to one´s life.” The conceptualization of information literacy practices with regard to ethical issues in digital environment is driven by several concepts and contexts. When we explore the practice of critical information literacy [11, 12], we can see that it is set into the contexts of information behavior, everyday life and information literacy landscapes [13]. Another context is represented by multiliteracies, such as digital literacy, media literacy, academic literacy, health literacy, data and scientific literacy, or civic literacy. In these contexts, we need to take into the account sociocultural and socio-cognitive background of information literacy related to digital information. It is manifested by participation in (digital) communities, holistic personal experience with information as part of shaping information landscapes, and information mapping for acquisition of accurate information, online searching, cognitive growth and information use. Latest research based on discourse analysis points to two main interconnected categories of information literacy applied to higher education, namely mapping and applying which are part of information practices [14]. In these

categories, the ethical components can become parts of conceptualization of information literacy practices. Another conceptual source can be represented by a theory of practice architecture based on dialogue and information culture. It can help form a significant framework for enrichment of digital information places and spaces by ethical categories. Another conceptual source of ethical perspective of information literacy is involved in the model and practice of metaliteracy [15], as it introduced an important metacognitive component related to participation and sharing of information. The metaliteracy model explained clearly the ethical background of information literacy with respect to self-regulation and understanding, cognitive or algorithmic bias. In reality, the information literacy practice is not static, it is evolutionary and continually cultivated, even in the context of understanding and navigating with algorithms. That is why the social contexts of information literacy and information ethics can be regarded as most significant factors, represented by ethical rules, values of information and intercultural diversity. Following this, lifelong information literacy needs to be developed in contexts of trust and responsibility, risks and benefits of social and technological co-evolution. Further information literacy practice conceptual frameworks have dealt with the issues of mis/disinformation in a new situation of digital spaces and societal challenges. Fake news represents a broader concept which includes disinformation (deliberate creation and sharing of false information) and misinformation (unintentional, inadvertent sharing of false information). Recent review studies have revealed special categorizations of fake news and mis/disinformation [16], represented by satire and parody, misleading content, false context, manipulated and fabricated content, advertising, propaganda and others. Information literacy and alternative literacies, especially critical thinking and metaliteracy, are considered to be main tools for combating mis/disinformation and fake news. An important role is played by academic and other libraries, which offer special courses (e.g. Indiana University´s checklist tool "LibGuide", campaigns and infographics by ALA or IFLA) [17]. Use of these tools is recommended in order to strengthen trust in libraries, revise values of library services, reframe information literacy and collaboration in digital environments.

2.3 Information Ethics in Contexts of Information Behavior and Information Literacy

Information ethics can be regarded as a multidisciplinary discipline and practice focused on managing information use with respect to accuracy of information, property, access, privacy and personal data, online communication and information sharing. A number of source theories apply philosophical principles of virtue ethics, rules and duties, consequences, social emotions, sympathy, care and respect as ethical frameworks. Two main conceptual approaches to information ethics are dominant in information science. They are represented by works by Capurro [18] and Floridi [19]. Capurro pointed to ethics of online communication and changing concepts of trust and responsibility, values and virtues, including intercultural differences. Floridi introduced his R-P-T model as part of ethics of information, (ethics of resources, products and ethics as target) in macroethical and microethical contexts and in the concepts of digital life (on-life) and the infosphere. The question is, if research on information ethics can inform communities which explore human information behavior and information literacy. Several models of information

behavior have been enriched by discernment of truth and dis/misinformation [20, 21]. The authors have proved that information is intuitively categorized into true information, dis/misinformation or fake news and that this process depends on contexts, especially social and cultural rules, causal factors, communities and tasks. The processes of social perception and social diffusion of information represent the significant ethical factors, as well as psychological issues of ethical awareness, information discernment, moral imagination, emotions, values of information and metacognition. Deeper integration of ethical factors with models of information behavior, information interactions and information literacy could help better understand the complexity of information experience in ethical contexts. Phenomenographic studies have shed new light on this complexity [22].

Several models of information literacy have included deeper understanding of ethical components into their frameworks or concepts. As an example, we can mention the concept of moral literacy [23]. This concept presents the model of components of moral literacy, based on ethics sensitivity, ethical reasoning skills and moral imagination. The components of moral literacy include identification of moral issues, determination of values, assessment of moral intensity, assessment of facts, consideration of consequences, identification of relevant virtues, ascertainment of relevant duties, consideration of issues of care, use of moral imagination. It is argued that moral literacy has been undervalued in education. Forster [24] emphasized the ethical intuitive part of information literacy in workplaces; other authors explained motivated reasoning [25] or information discernment [26] and inoculation [27]. A significant contribution introduced the concept of value-sensitive design of information systems with the use of moral imagination [28]. However, there is still a gap in studies of intersections of information ethics, human information behavior, and information literacy. That is why we have designed a study on information ethics in a digital environment with the use of a Delphi study.

3 A Delphi Study: Selected Conceptual Models

Our study focused on the main research question: Which ethical factors are decisive for consideration of information literacy as a human ethical information experience? Additional questions followed perceptions of main ethical issues of digital information and visions of future development of information ethics. The Delphi study was divided into three rounds, including a pilot study (4 experts, December 2021), an online survey (19 experts, January – May 2022), and an online discussion (6 experts, September 2022). The experts came from the Slovak and Czech Republics from academic disciplines of information science, informatics, psychology, philosophy, management, journalism, marketing, political science, social informatics, but also from academic libraries and IT companies. The data was analysed with the use of qualitative analyses, discourse analysis and conceptual modelling. A series of conceptual models represented the results of the analyses. Limitations of the study, such as subjectivity of interpretations or self-selection of experts, were balanced by independent analyses of two researchers in each round of the study and reviews by selected participants.

The design of the main round of the Delphi study included the following three questions: 1. Which three ethical issues do you regard as most significant with regard to

the development of information ethics in digital environment and why? 2. Which three ethical dilemmas with regard to the use of artificial intelligence (AI) do you find as most significant (state your reasons for your opinion), 3. Which three values of information do you regard as critical for ethical use of digital information and why?

Results of the study confirmed the consensus of experts with regard to the three questions. The main ethical issues were identified as issues of privacy and personal data, benefits and risks of advanced technologies (AI), and issues of truth and accuracy of information (dis/misinformation) (Fig. 1). Main ethical dilemmas were represented by the impact of intelligent technologies on human life and information interactions, value tensions and bias of algorithms, and social control and human management. The main values of information in contexts of information ethics were identified, such as utility, truth, and objectivity / credibility (Fig. 2). Details of data analyses and findings and models were interpreted in previous publications and an internal data repository. As examples of the analyses, the resulting visualizations of the conceptual models are presented in Figs. 1 and 2.

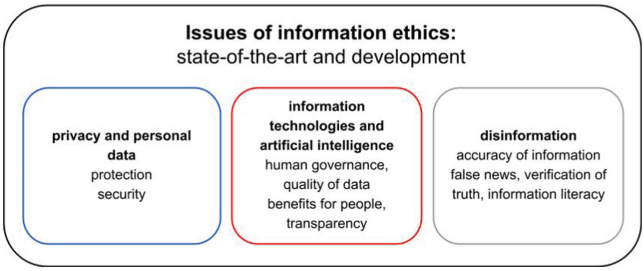

Fig. 1. Main ethical issues of digital information

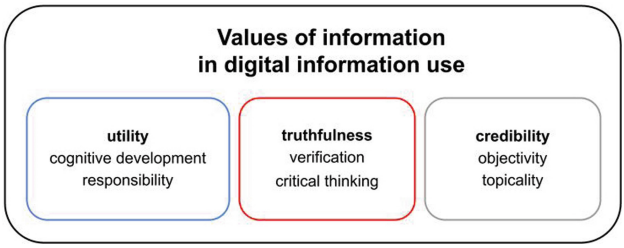

Fig. 2. Vaues of information in digital environment

As part of an online discussion, the experts have identified the current situation as a crisis of ethics and information in society. Main concerns are represented by ethical issues of artificial intelligence, risks, conflicts, biases of digital information use. Commercial concerns were also considered. Experts proposed education of software designers and top managers and information ethics courses at all levels of education, including business. As examples, they mentioned cognitive and algorithmic biases, protection of privacy, accountability and responsibility of autonomous systems, issues of dis/misinformation.

Experts called for more collaboration among academic disciplines, different professions and stakeholders. The vision is represented by closer collaboration of people and AI tools.

4 The Concept of Ethical Information Literacy Experience

Based on results of our Delphi study and the background knowledge of theories, frameworks and models of information literacy and human information behavior which integrated ethical aspects of information use, sharing and production, we have introduced the concept of ethical information literacy experience. It is based on a resulting general conceptual model of ethical factors of information interactions, but also on the concepts of information experience and metacognitive, self-regulation involved in metaliteracy. Ethical information literacy experience means integrated levels of information use, sharing and production composed of four components; namely ethical awareness and ethical sensitivity; ethical imagination and ethical intuitions, including emotions; ethical reasoning, decision-making and problem solving; and ethical self-regulation, metacognition and metaliteracy. The concept of ethical information literacy experience covers both affective, cognitive, intuitive and self-regulatory frameworks of information ethics embedded in information literacy and information behavior. The concept applies both explicit and tacit issues (social rules, duties, consequences, social emotions, ethical sensitivity, sympathy, respect and self-regulation) which drive information literacy practices and information behavior. The ethical information literacy experience builds on an individual´s cognitive and affective states (personality), and considers cognitive and affective biases, influence of patterns of behavior, social perception and social diffusion of information in digital spaces. It is also based on differences of personalities and communities in relation to their information experience. The information discernment is then related to knowledge states, social and intercultural contexts and rules, co-evolution of social and technological parts and categorization of information using values of truth and utility (true information, dis/misinformation, fake news).

4.1 A Final Conceptual Model of Ethical Factors of Information Literacy

The intersubjective ethical and social factors of information literacy related to the digital information environment have been visualized in a final conceptual model of ethical factors of information literacy as an experience (Fig. 3). The model considers not only the results of the study, but also prior analyses, several synthesizing concept models and the concept of the ethical information literacy experience. The model represents both the social and individual ethical features of information literacy experience. It is a relational model, as informed by phenomenographic studies of information literacy. The structural and referential components of the information literacy experience are expressed in the components of metaliteracy, social contexts and values of information (referential components), while activating social and ethical sensitivity, ethical reasoning and ethical intuitions, ethical imagination, manifested by social perception and social diffusion of information with the use of assessment of main values of information represented by truth and utility (structural components). The components are interconnected and represent the ethical factors of information literacy as an experience. The main processes

of the ethical information literacy experience can be divided into the stage of orientation (mapping) and the stage of production (analysis, applying). The model can help in understanding the ethical information literacy practices. The identified ethical factors are synthesized in three strata. The ethical factors are hidden in the tacit knowledge, emotions, intuitions, imagination and the model represents their explicit conceptualization. It can bridge the gap in connections among information ethics research, information behavior and information literacy studies in a multidisciplinary perspective. The model presents the confirmed ethical factors of information experience based on results of our Delphi study, but it is based also on our prior theoretical analyses and several synthesized conceptual models. It can be applied to the integrative levels of information use, sharing and production in a digital environment. The model can be used for further ethical studies related to information behavior and information literacy based on information experience.

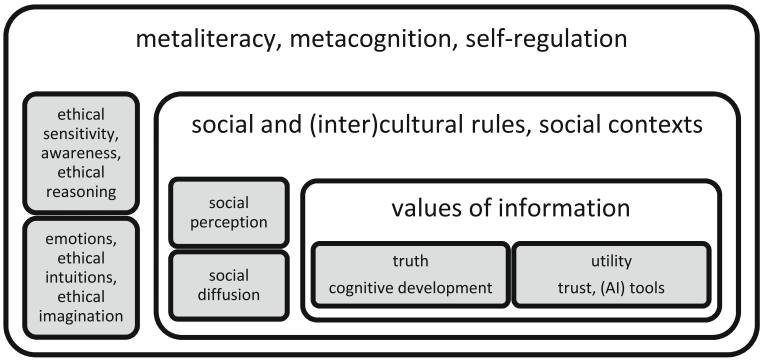

Fig. 3. The ethical factors of information literacy as an experience

5 Value-Sensitive Design of Information Literacy Courses

Value-sensitive design represents an innovative methodology for inclusion of values of information and values of different stakeholders into the design of information systems and services [29]. The authors have proven the practical potential of improving the design of systems by incorporating moral imagination and ecological approach, while considering the intersection of stakeholders, values, technologies and tools. While the concept represents a series of special methods, such as value-analyses, value-source analysis, model for informed consent online, multi-lifespan co-design, it also presents a special visual language and considers ecological, environmental and holistic perspectives.

Information literacy as an ethical experience is characterized by holistic, ecological features, metacognitive principles and social contexts. It is driven by ethical sensitivity, ethical imagination and values of information. These are the reasons why ethical redesign needs a value-sensitive approach in practice. In the digital environment, especially in social networks, the ethical information literacy experience should consider social

perception of information in communities, which can have an impact on categorization of true or untrue information (evaluation of information). It is also related to social diffusion of information which can have an immediate impact on large numbers of people. That is why we propose designing information literacy education and courses enriched with the components of ethical information literacy experience and value-sensitive design. This could help develop academic courses on dis/misinformation as part of academic and research integrity. Students in an academic environment should know how to analyse values of different stakeholders (teachers, students, managers, researchers) and how to integrate technological tools, including AI tools, into information use, sharing and production in relation to truth, cognitive development and utility as main values of information. Courses on discernment of dis/misinformation, fake news and verification of information can help students and academic workers improve their efficiency and quality in information use, sharing and production.

We also propose designing value-sensitive services of academic libraries, including development of special digital places and spaces, tutorials, portals, campaigns (advocacy) and other educational materials for support of ethical information literacy experience of students and other academic stakeholders. From the perspective of the future development of information ethics, the value-sensitive design of academic courses and services of academic libraries could focus on the topics of ethics of AI, algorithmic bias, but also the issues of digital publishing, data ethics, data literacy and accountability of autonomous systems.

6 Conclusions

We have explored significant ethical factors of information literacy and human information behavior based on analyzed theories and models and on the results of a Delphi study on information ethics. Although information literacy has been studied in library and information science for almost 50 years, there are still topics which deserve more attention, namely the ethical dimension of information literacy. We have found that the connections among information ethics, studies of human information behavior and information literacy have been neglected. We have also found that the inclusion of ethical considerations into models of information literacy and information behavior could enrich our understanding of information use and production. We have proposed re-framing information literacy practices research within the concept of ethical information literacy experience. The starting point can be represented by the proposed model of ethical factors of information literacy as an experience as part of the engagement of people with information in digital environment. For practice, we have proposed applying the value-sensitive design to information literacy courses, especially in academic libraries and digital services. Based on the results of our study we can suggest that the information literacy courses should pay more attention to information ethics, especially social and intercultural contexts (rules), values of information (truth, utility), and ethics of AI tools. Our experts emphasized the education of top managers and designers of AI tools with regard to information ethics. The decisive components of ethical information literacy experience were identified, namely ethical sensitivity and ethical awareness, moral imagination, respect and sympathy, and social and intercultural rules, duties and contexts

of ethical information use and production. We have also proved that the societal need for multidisciplinary research and collaboration of professions in the information ethics field will continue to evolve.

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