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Searching for a Definition of Information Literacy as a Socially Cohesive Component of Community: A Complementarity of Experts and Student Approach

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Abstract: Information literacy can be seen as a fundamental prerequisite for a sustainable complex information society. As a lack of information literacy, information poverty represents a significant social and educational issue. Information literacy and information poverty will be the new dividing lines of a complex world, as the "rich north and poor south" metaphor became in the 20th century. A careful study of discourses in information literacy allows for effective educational and social policies aimed at its development. The aim of this study is to present an analysis of different approaches and discourses to define the concept of information literacy based on a review of papers from Web of Science. The study identifies four important directions of definitions or new grasps of information literacy, with an emphasis on social justice, the analysis of social and technological change, and a demand for higher quality information literacy education. Based on this analysis, the discourses present in the responses of undergraduate information studies and library science students (n = 132) collected between 2019 and 2022 are studied. The qualitative study shows that these underlying discourses are present in the students' responses but, at the same time, offer specific perspectives on their fulfilment.

Keywords: information literacy; social justice; technology; definitions literacy; discourse analytics; media literacy

1. Introduction

Contemporary society is often referred to as an information society (Schement 2018; Webster 2014). On the one hand, this aspect is associated with the distinct computerization of society (Fitzpatrick 2002) but also with globalization and the increase in the complexity of thinking information interactions of society (Rzevski 2015). The ability to navigate the growing amount of information and search, evaluate, sort, process, and use information all belong to the field of information literacy (Snavely and Cooper 1997). This concept has a history of almost half a century with complex internal evolution. An appropriate definition of information literacy can be crucial to surviving economically, socially, and culturally in a complex society (Van Dijk 2005; Van Dijk and Hacker 2003). Therefore, information literacy will be understood as one of the pathways to sustainability (Ziemba 2019) of an increasingly complex society.

Information literacy, as a concept consisting of a set of skills leading to working with information, has existed for a long time. Its first formal definition was offered by Zurkowski (1974) almost half a century ago. Since then, the topic has been systematically reflected upon, with the American Library Association (ALA) providing a further definition of information literacy in 1989, beginning the long process of forming different frameworks of information literacy (ALA 1989). Some of these frameworks understood information literacy separately, such as the Big6 model (Eisenberg and Berkowitz 1999), the ACRL (Association of College and Research Libraries) framework (Catalano 2010), and the Seven Pillars of Information Literacy Core Model by SCONUL (Society of College, National and

University Libraries) (Bent and Stubbings 2011). Other frameworks understand information literacy as integrated into broader competence frameworks, as in UNESCO's Media and Information Literacy framework (Grizzle et al. 2014) or the Digital Competence Framework 2.1 (Carretero et al. 2017).

Each framework or approach sets its parameters of what information literacy means and how it should be developed. This ambiguity has become the subject of many practical problems (Khlaisang and Koraneekij 2019; Pinto et al. 2019), including the lack of agreement as to whether information literacy is a standalone competency or part of a broader whole (Carretero et al. 2017; Grizzle et al. 2014).

Zurkowski defined information literacy as being a set of: "learned techniques and skills for utilising the wide range of information tools as well as primary sources in molding information solutions to their problems." (Zurkowski 1974) Bruce (1997) defined seven areas in which information literacy can be pursued: "The seven perceptions were: the view of information literacy as using information technology for purposes of information retrieval and communication, the act of finding information, executing a process, controlling information, new knowledge accumulation, working with knowledge to generate new insights and wise and beneficial use of information." The ALA "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" (ALA 2015). Carretero et al. defined information literacy as the ability, "to articulate information needs, to locate and retrieve digital data, information and content. To judge the relevance of the source and its content. To store, manage, and organize digital data, information and content." (Carretero et al. 2017).

However, these definitions are limited by several problems, most notably the vagueness of the various terms, while following a standard paradigmatic key (Owusu-Ansah 2005) that focuses on defining a set of activities for education (except Zurkowski 1974). Furthermore, they do not provide a description of the internal structure and dynamics of the phenomenon. If it were possible to be satisfied with such a definition, certain dilemmas would arise: (1) to maintain one particular definition that will eventually become obsolete, resulting in the disappearance of the requirement for information literacy development, and (2) to continually expand the definition (these tendencies exist), which reduces the possibility of genuinely systematic information literacy development because such a definition does not give any firm grounding to its field.

This situation, therefore, leads to a paradox—information literacy is a phenomenon rich with practices (Lee and Ting 2015; Mohamed 2018; Sauerwein 2019), research (Bruce 2000; Lipu et al. 2007; Eisenberg and Berkowitz 1999), and a large number of journals, but at the same time, is experiencing a crisis of definition. In information science and many other fields, the definitions of certain phenomena are gradually evolving and differentiating, so the absence of a single definition of information literacy is not unique. Nevertheless, the studies we analysed show significant differences in the approach to what is meant by information literacy and what is helpful for people or society.

Finding an appropriate definition of the phenomenon of information literacy is helpful because it allows for educational and social policy settings within a particular discourse or approach that could be agreed upon within a broader social framework. It is easy to emphasize the need to develop information literacy but challenging to define what to imagine under such a rubric. The aim of this study is to contribute to the delineation of possible discourses and approaches and their understanding by students. With the study, we seek to unpack the differences between expert and student perceptions of each approach and offer avenues for rethinking appropriate educational and social policies.

Therefore, with this research, we seek to answer what discourses or approaches are emerging in redefining information literacy and how these can be sorted and worked with. Appropriate delineation of these discourses is helpful for specific research, reflection on educational practice, or the development of new courses to develop information literacy

in a particular target group. The focus of the approach is different from that offered by available review studies (Ameen and Ullah 2016; Rader 2002; Vezzosi 2006; Virkus 2013). In the empirical part of the study, we focus on whether and in what form such identified discourses are present in the information literacy reflections of undergraduate students in information studies and library science. This is a target group demonstrating some familiarity with the issues from their studies, but at the same time, they are not yet profiled experts. In this respect, their testimonies can serve to reveal the content of discourses reflected in a specific (Czech) environment.

Saracevic (1999) argues that the best way to define basic concepts in science is not by ad hoc definition but by observing practices in the field. This research is structured in such a way that, based on an overview study, it establishes the dominant discourse that arises in the area of redefinition of information literacy. The approach is not entirely original and can be traced in several studies (Elmborg 2012; Snavely and Cooper 1997; Virkus 2003). In this paper, we are not sticking to an overview study but observing the content of individual discourses through the lens of student testimonies that we have been collecting for four years. Although our research builds on the literature review, it is primarily empirical.

1.1. Literature Background: Discourse Analysis

This study is a review (Gallardo 2020; Goes et al. 2020; Thiese 2014) analysing all studies that match the specified search criteria, with the aim of describing and analysing all available texts that meet the specific formal terms of reference. We considered all studies meeting specific criteria. On the other hand, we are aware that the qualitative orientation of our study led to significant rigid constraints that do not allow us to speak of systematicity in the sense of complete coverage of the whole topic or issue. Thus, the present study builds on Mayer (2009) and his concept of the review study as a tool for analysing the current state of an issue and future developments. A qualitative approach was used for the purposes of the analysis. The following criteria guided the selection of the papers to be used:

1. The research used Web of Science databases;
2. The research worked with the following keywords: information literacy definition;
3. The research limited the results to articles, maintaining all other selection parameters, reducing the number of papers by 10;
4. The research restricted the results to open access, maintaining all other selection parameters, reducing the number of documents by 44;
5. The research limited the results to those written in English, maintaining all other selection parameters, reducing the number of documents by 10. Two studies were manually removed in the final set of studies formally reported as English, but only the abstract of the paper was in English;
6. The research restricted the results to texts published between 2016 and 2021. The aim of the study was to monitor the current state of knowledge. Maintaining all other selection parameters, this criterion reduced the number of documents by eight.

These limitations left us with a set of 23 studies that were subjected to detailed qualitative analysis.

Our analysis was qualitatively oriented. It was necessary to identify specific discourses from the studies, which, given the current state of knowledge, could not be done except through a qualitative research design. The researchers carefully read and analysed the individual studies and formed discourses from them. In order to make such an approach possible, it was necessary to identify criteria for a transparent selection of documents. Although the individual constraints were rigid (e.g., the open access requirement), the selection process allowed for a probe into studies that address the topic. From the outset, the criteria were chosen to qualitatively study the obtained sample, with a sample size of 20–30 studies. This is reflected in the final selection of 23 papers.

The selection of the database represents the first limitation. It would be possible to expand the sample to include SCOPUS, ERIC, and other databases. However, the selection was related to the fact that Web of Science (WoS) indexes the most quality journals

(Pranckutė 2021; Stahlschmidt and Stephen 2022), so it can be expected to reflect scholarly discourse most accurately (Singh et al. 2021; Zhu et al. 2021). Restricting the results to texts available in open access mode complies with European research policy. This emphasises the ethical importance of openness in the handling of scientific results (Maddi et al. 2021; Mazur 2021).

The keyword selection represents one of the most significant limitations of this study. It would have been possible to work only with the phrase "information literacy" and to look for individual definitions in specific documents to reflect "lived practice" more than an academic approach to defining terms. However, the reasons for this choice were twofold. (1) When looking for a definition and discursive emphases, it is advantageous to rely on the writings of experts who do not focus on general issues related to information literacy but on the definition of the term or concept itself. (2) In the first search, we found texts with only the keyword "information literacy", but not all documents contained information about the explicit definition of the phenomenon. This would have made the research less precise (burdened with subjectivity) or led to the exclusion of many texts, raising questions about the representativeness of the study. Searching with the word "definition" yielded significantly more relevant and easier-to-rank (more objective) results.

The restriction to articles is closely related to the selection of the database. We aimed to pursue maximum quality, which is easier to demonstrate for journals indexed in WoS than proceedings. Proceedings are indexed in a different way.

The analysis below clearly shows that information literacy is not a phenomenon that can be fixed in libraries (Okeji et al. 2020; Owusu-Ansah 2003; Tewell 2018), as was previously familiar and the author of the first definition, Zurkowski (1974), considered. Information literacy has a broader social character, which we describe using the four discourses we identified in the following Section 1.2.

All analysed studies are listed in Table A1 in the Appendix A. In Table A1, we present the individual studies and their basic methodological approach and key findings.

1.2. Analysis of Discourse

Social justice is one of the critical narratives of the studies that were analysed. Social justice means that every individual should have the opportunity to assert themselves in society. Information literacy serves as a tool for ensuring an anti-discriminatory environment, enabling each individual to shape their own identity. This concept emphasizes the dimension of non-discrimination, i.e., the need to ensure that everyone has access to information that will enable them to self-actualize, socialize, and have the possibility of personal happiness or success. Information literacy is a necessary condition for (but not a sufficient condition for) being less dependent on a fixed power structure and running your life your way. In this discourse, as Irving (2020) points out, the very construction of the concept of information literacy is discriminatory. Let us now analyse the various definitions and competency frameworks. There are dominant attitudes associated with the typical world of white middle-class men: emphasis on job performance, information literacy as a manifestation of competitiveness, competition, etc. Irving, therefore, points out that researchers need to look for definitions less affirming of this group of people (from which academics are typically recruited) (Irving 2020). Society needs to broaden the view to include the perspectives of feminist pedagogy or other actors in information interactions. According to this author, the fact that values are often unspoken and hidden behind official documents (without explicit gender) is a source of discrimination and profound problems.

Stonebraker et al. (2017) reflect on the need to disrupt certain social perceptions, ways of solving problems, or power and process discourses in general. They point out that information literacy leads to the possibility of challenging or abandoning them, thus opening up space for social change. Therefore, for the authors, information literacy is a prerequisite for free decision making and an adequate understanding of fundamental social problems and their remediation.

Veenker and Paans (2016) stress that information literacy is linked to making autonomous (informed) decisions about oneself. This should also be reflected in communication patterns and the social structuring of various interactions. The authors work with an example in the healthcare setting, where an informed patient should make decisions about their treatment. Still, a paternalistic narrative prevails in the healthcare setting that does not assume any patient information. A text can be situated within the broader context of whether information literacy enables the abandonment of entrenched power structures in society that reduce autonomy and freedom or whether it enhances these structures (because of its unevenness).

Brady et al. (2016) assert that the definition of information literacy envisages people without disabilities and limitations both as producers and receivers of information. On the one hand, the universal design dimension is emphasised. On the other hand, there is no reflection on what it means to be an information-literate person with a disability. Suppose we accept Irving's (Irving 2020) narrative. In that case, it can be said that structural discrimination has excluded some people from the possibility of working effectively with information and succeeding in the labour market in competition with others. Thus, the concept of social justice should become a critical narrative throughout the interpretation of any definitions or approaches to information literacy; these two studies pose the following questions: What does it mean not to discriminate? How can we construct competency frameworks (or definition schema) with value sensitivity?

A different perspective on the phenomenon of social justice is offered by the study of Marcella and Chowdhury (2020). The authors draw attention to the fact that social justice must also be applied in broader strategies of practical work with this phenomenon. Information poverty, they argue, has become an endemic disease that is not visible and of which people have little awareness but which is all the more serious. Viewing the phenomenon of information poverty and the absence of information literacy (closely linked phenomena) as a social health problem is essential for applying specific government policies. Information literacy is not sufficient for the absence of information poverty, but it is necessary. It is possible to be information-literate and not access information for technological, economic, or political (and other) reasons, which can be understood as information poverty. According to Marcella and Chowdhury (2020), information-illiterate (poor) people make poor decisions that exacerbate their poor living situation. Therefore, it is necessary to find ways to individually target assistance to specific groups of people (with particular problems) to achieve life success through better information literacy.

The second large group of studies focuses on the phenomenon of societal change, which leads to the need to think about information literacy differently than before. The phenomenon of societal change is based on the consideration that information literacy responds to a changing society, its growing complexity, dynamism, and reduced predictability. Just as society is changing, information literacy itself must also change. These papers emphasise the transformation of society to which the concept of information literacy needs to be adapted.

Lane et al. (Lane et al. 2019) consider the fact that the dynamic development of society requires us to understand competence models in an increasingly complex way and find new layers or areas within them. At the same time, they point out that the relationship between curriculum and basic information literacy can be complicated.

Marzal (2020) argues that it is necessary to talk about a single multiliteracy. Changes in the complexity of society are reflected in the complexity of the concept of multiliteracy itself. Whereas this can be differentiated internally, it must be clear that the boundaries between the different competencies are not sharp but represent a specific porous structure. Technological and societal changes have led to differentiations having more formal than actual meanings. Similarly, Mackey and Jacobson (2011) write that information literacy is not separate from other types of literacy but is linked to them. This integration leads to a specific grasp in terms of theory or concrete education and a new structuring of social reality.

Kirschner and Stoyanov (2020) argue that social change—the computerization of society—leads to literacy associated with information literacy, while all other literacies and competencies are derived from it. At the same time, they point out that information literacy is crucial for the ability to study successfully at university or to manage the transition from secondary school to university. However, there is a twofold problem: firstly, the somewhat reserved approach of the various frameworks and practices to metacognitive aspects, self-management, motivation, or creativity. All of these are related to information literacy and, at the same time, belong only marginally to the educational canon. Thus, the critical skills for which information literacy is essential are not adequately captured by education. Secondly, there is no consensus on where the boundaries of information literacy lie. Therefore, the authors argue that more important than a sharply defined definition is the relationship of this competence to students' life situations, problems, needs, and challenges.

Pinto et al. (2019) point to the issue of an as of yet unresolved formal definition. Definitions and frameworks are always created by certain petrification of past experiences while keeping an eye on the current needs of students. This leads to the fact that some areas of information literacy are developed more intensively (information retrieval, evaluation, and production) than others (information sharing or dissemination). Social movements lead to the breakdown of information literacy frameworks and the need to find new approaches to deal with information literacy.

Satija and Martínez-Ávila (2019) highlight the problem of definitions. In this study, we have already mentioned the problem of the absence of formal frameworks that could be used in higher education, but this is only a partial solution to the problem. Using the example of plagiarism, Satija and Martínez-Ávila show that the fundamental content changes and shifts over time, even when people work with identical concepts and definitions. There is no such thing as a definition in the sense of a conserved, standardised unit. The world's mutability is reflected in the shifting content of individual concepts, which makes any standardisation difficult. Khlaisang and Koraneekij (2019) even talk about how the fragmentation of images is so strong that it is impossible to speak of systematic research on information literacy as a specific phenomenon is impossible. We can talk only about its specific culturally or socially defined facets, which reduces the possibility of systematic scientist work on the whole issue.

Flewitt and Clark (2020) illustrate this point with the example of children under the age of three, who should already have some form of literacy that enables them to distinguish between and use virtual and physical communication, as well as online and offline environments. In doing so, the authors follow the emphasis of social change leading to the erosion of sharp categories while at the same time emphasising a particular ability of children to structure their environment.

The third discourse is the discourse of technology, which can be observed in two variants: (1) at the level of expansion or deepening of the concept of information literacy and (2) at the level of the accelerator of specific changes and shifts. Both perspectives are closely related.

Ridley and Pawlick-Potts (2021) argue that the understanding of information literacy needs to be extended to include the ability to work with, read, and use algorithms to solve students' specific problems. Currently, many challenges cannot be solved in any other way than through algorithmisation, and the ability to work with algorithms and programs will become increasingly important. The authors point out that it is not about the specific practices of working with information, i.e., just information literacy.

In an earlier study, Calzada Prado and Marzal (2013) go in a similar direction, emphasising that it is impossible to understand contemporary science without knowledge of data and working methods. Still, neither is it possible to create a substantial part of it. If one is to be information-literate, one must be able to work with algorithms and data. The authors suggest working with the concept of a kind of dual literacy: information and data literacy.

It should be emphasised that this claim does not come only from theorists but is supported by empirical data. Based on his quantitative research, Feerrar (2019) found that students are not interested in the general development of information literacy. He perceives it as a curricular necessity for the university to focus on activities that will enable them to succeed in an academic environment, achieving both research competencies and a good knowledge of the tools and techniques to work with them. Students are aware that technology is the tool that enables them to access and work with the information environment.

The fourth and final discourse is the discourse of the demand for higher quality. Typically, the motivation for a change in the grasp of information literacy is the identification of some subproblem or context that prevents information literacy from being developed to a sufficiently high degree. From this demand for higher quality, several practical incentives for a new understanding of information literacy emerge. This category includes papers that emphasize the need to preserve the existing concept of information literacy in its general principles and look for ways to develop it better in students or improve its quality in the general population. Thus, the transformation of the concept is not based on a critique of the understanding of the concept of information literacy itself but on the idea that educational practice must lead to better results.

Martzoukou et al. (2020) accentuate a similar theme highlighted by Kirschner and Stoyanov above. Kirschner and Stoyanov (2020) argue that universities do not have a clearly defined curriculum for information literacy. But universities treat information literacy among students as commonplace. The implicit understanding of the concept is then discriminatory for some students and difficult to grasp for others. There is a need to discuss, in the university environment, what information literacy is and, based on this discussion, establish straightforward ways of achieving it, even for students who do not yet have it. Here again, the social justice parameter is explicit, as students with lower levels of information literacy are also likely to have lower social and cultural capital. Working with a clear definition leads to higher quality education for a more significant number of people. Bury (2016) argues that the lack of a shared understanding of information literacy leads to uncertainty for students; therefore, the quality of education would benefit if there were some standardization or agreement on what information literacy is at the school level.

Hauck (2017) shows that the development of information literacy does not need to be linked to a sharply defined set of information education lessons in a university setting but, instead, that it is appropriate to look for links to specific courses. This may lead to students being able to complete more challenging assignments, the development of the digital humanities in the social sciences, and an overall improvement in the quality of learning. The dimension of purposefulness is essential here, as well as the fact that information literacy directly helps students master the requirements of a particular course of study.

Glaze (2018) sees great potential in linking science and information literacy. The two concepts are closely related and can be said to rely on one another. Scientific literacy without information literacy is not conceivable. In the case of information literacy, there is a need to see a meaningful discourse towards working in a science environment in a university setting. In working with these two literacies, the author considers reducing the transmissive concept of teaching and increasing students' activity, which impacts general education quality and the development of subcompetencies.

Teixeira Lopes et al. (2017) highlight interesting intercultural aspects of information literacy that are not often considered. It is easier to be an information-literate English speaker than to have the same literacy level in another language. Language proficiency significantly impacts the ability to work with information, search for it, evaluate it and work with sub-tools.

Wendell et al. (2017) analyse the process of reflective decision making regarding communication skills and information literacy. The ability to make decisions and, at the same time, be able to communicate the basis of those decisions to a team is an essential

form of information literacy in technically oriented fields, where information literacy is not usually discussed as much. On the other hand, Little et al. (2016) address the issue of literacy as a kind of prerequisite for information literacy. A lower ability to work with written information can be disqualifying for more complex information work activities.

Table 1 summarizes the individual studies and discourses created based on the analysis of particular documents. It shows the current directions in the approach to defining the concept of information literacy. The assignment of individual studies to discourses can be found in Table A1 in Appendix A.

Table 1. Identification and description of discourses and their requirements for practice.

Discourse	Brief Description	Key Requirement
Social justice	Information literacy is a means of achieving social justice in society. It aims to promote individual autonomy and the ability to disrupt flawed or limited social structures and attitudes.	Information literacy must not be associated with a preference for the values of a particular group. Active policies should be sought to develop information literacy in as large a part of the population as possible.
Societal changes	Society is changing dynamically, and the approach to information literacy must adapt to these changes.	Information literacy needs to be understood in a more complex way that is more interconnected with other competencies. The aim of this discourse is to ensure academic success, fulfilment of potential in the labour market, and individual benefit.
Technological changes	Technology is not just a means for certain data manipulation but an active element in changing how information is handled. Technology limits possibilities to search, process, organise, and publish data and is an active element leading to changes in the understanding of the information literacy content	People need to learn to actively use new technologies, including programming and the development of algorithmic thinking.
Higher quality	The existing concept of information literacy is not wrong, but it needs to be expanded to include specific areas or points relevant to a particular target group.	Information literacy must be integrated into specific courses and projects in which students meet their learning objectives.

2. Materials and Methods

The aim of the present study is to help understand how complex, dynamic and multilayered the view of information literacy can be. The generally proclaimed need for information literacy development in studies and media appearances is problematic if we cannot identify the content of this phenomenon more clearly.

Our research questions are as follows:

1. What research discourses exist in the current literature on information literacy? How can information literacy be defined?
2. Do LIS students at Masaryk University in Brno perceive these discourses (identified from research in the literature) in their conception of information literacy?
3. In what ways do students understand these discourses, and how do they fulfil their content?

Students were not familiar with the discourses identified in the literature. However, these provide a methodological filter for us to reflect and analyse student accounts in a structured way.

2.1. Data Collection and Processing

Students submitted their text of the recommended length of about 500 characters, including spaces, in which they answered the question: what are the most significant aspects of information literacy for you? Thus, the aim was not to analyse the definitions formulated by individual students but to identify the emphasis or discourse they subscribed to.

The answers were stored in an information system as part of the mandatory course output. Individual assignments were submitted in DOCX or PDF formats. From there, we extracted the required response into documents structured by year. These documents were then the input data for the Atlas.ti application, in which data coding took place.

The codes were formed in two complementary ways. First, data were coded to reflect on the discourses identified in the literature review study. These codes were supplemented by others that, when reread, formed common clusters of utterances. Of the 16 codes generated in this sequential manner, 9 were used for the research; descriptions of these codes are presented in Table 2.

Table 2. Codes used in the study.

Code	Frequency	Description
Social aspect	36	This code describes the link between digital competencies and social reality, social problems, and connections.
Social justice	20	This code was linked to the social aspect, describing the necessity of digital competencies to prevent the breakdown of social cohesion.
Tools	33	This code describes statements that link information literacy to specific tools.
Evaluation	25	This code is associated with the ability to evaluate information.
Bubbles	21	This code is associated specifically with information bubbles.
Filtering	40	This code is associated with the ability to organise and sort information.
Search	25	This code is associated with the ability to search for information.
Semantic search	7	This code describes a specific semantic search.
AI	7	This code describes the transformation of digital competencies explicitly due to artificial intelligence.

Thus, the aim of this procedure was not to identify a new theory but to determine whether the students, in their answers, grasped the discourses represented in the literature or how they approached and understood them.

Our research analysed students' responses divided into four years, as the data collection occurred between 2019 and 2021. Each student could only answer once, so the responses were not separated by name but only by information about the year they were written; IL19 corresponds to a course taking place in 2019, IL20 to a course from 2020, IL21 to a course from 2021, and IL22 to a course from 2022. The aim of the analysis was not to capture all discourses or thematic clusters present but to analyse whether approaches could be identified corresponding to discourses from the literature.

Table 2 lists the most frequent codes we used to analyse the documents reviewed in this analysis. For specific statements, we indicate the year the statement was obtained. However, it was impossible to identify thematic shifts or trends across years.

In order to structure the text more clearly, we assigned codes to each discourse so that it was possible to work with them. The assignment method is shown in Table 3. Each discourse is saturated with one to three codes to form a coherent view of the defined topic.

Table 3. Codes assigned to the identified discourses.

Code in Student Statements	Dominant Discourse
Social aspect	Information literacy as part of the social order
Social justice	Information literacy as part of the social order
Tools	Information literacy is the specific use of software tools
Evaluation	Information literacy is the ability to assess, locate, and organise information
Filtering	Information literacy is the ability to assess, locate, and organise information
Search	Information literacy is the ability to assess, locate, and organise information
Semantic search	Technological discourse
AI	Technological discourse

2.2. Sample

The sample consists of students in the first year (second semester) of the undergraduate studies of Information Studies and Library Science at Masaryk University. These students have repeatedly encountered the topic of information literacy in various courses and literature and should have formed some preconceptions of it. The data were collected in the Digital Competence course, working with the DigComp competency framework.

The data collection occurred between 2019 and 2022 and included four consecutive years of students (Table 4). From each year, 33 statements were analysed and selected randomly. The number 33 was chosen considering the lowest number of responses collected across the four years. If there were more responses than 33, responses were randomly selected to represent each year evenly. A total of 132 student responses obtained over the four years of data collection were processed. About 25% of respondents were male, and 75% were female. The age distribution is unknown, but about 70% of the students are studying on a full-time basis, aged around 22 years. Therefore, the weight of responses can be expected to be concentrated among respondents aged under 30 years. In the combined form of study, typically, older students are already engaged in the workforce.

Table 4. Number of analysed student responses per year.

Year	Number of Statements Analysed
2019	33
2020	33
2021	33
2022	33

3. Results

Data from the students' responses were coded and grouped to reflect—even approximately—the individual discourses. It is crucial for our research that all discourses identified in the literature are represented in some respect, but at the same time, their specific structuring is evident. Students identify similar aspects as essential, but at the same time, give them a different focus that corresponds to their experiences, needs, and

knowledge. In the following sections, we provide a brief description of the discourses and examples of student accounts that illustrate them.

3.1. Information Literacy Is the Specific Use of Software Tools

Information literacy is the ability to work with specific tools or applications. Some authors talk about tool literacy as a component of information literacy to connect theoretical concepts and tools. Typical statements are:

"I am intrigued by many search engines and how they can be used, what possibilities they have." (IL19)

"Anystyle.io, for example, is new to me, and I want to try to use it." (IL22)

"The search engine Omnity.io, which can search scientific articles, will be useful for my studies in the future." (IL20)

Specifically, these tools are combined with other aspects of information literacy. In these statements, the tool acts as a developmental impetus for the further development of information literacy more broadly understood:

"I have always used simple file managers, notepad, to-do lists or bookmarks in the browser, but I am aware that this is not sufficient for full information work. I have tried the Miro app for creating mind maps, which can be a good alternative to notes on paper, but it is still not enough. I want to create a system for organising and using information, but I have not succeeded yet." (IL22)

"Pirate services LibGen and SciHub which I did not know existed. They contribute to the current big topic of Open Access. Their contribution is certainly controversial. However, I see two main arguments supporting their function here. Firstly, most research is funded by third parties, and secondly, the average citizen cannot access articles in scholarly databases." (IL19)

This whole discourse shows that information literacy is not some abstract skill for students but is closely related to being able to do something practical. The attachment to tools is not just an "escape" to the concrete but a manifestation of the possibilities that information literacy opens for people. Students can identify their needs and find tools to manage or solve them.

Students thus follow the sociological model, assuming that education is the transmission of an instrumental set for solving a particular set of problems. In the case of information literacy, students emphasize that these may not be purely mental instruments but often a combination of them with software solutions (online or offline). The second difference that we can identify in this discourse compared to the classical conception is a clear awareness of the variability of what students will need to do and what tools they will need to accomplish their goals. There is no fixed canon of knowledge, skills, and attitudes but a broadly understood need to navigate a dynamically changing world.

3.2. Information Literacy as Part of the Social Order

The relationship between society and information literacy is a discourse that can be easily identified among the students' statements about information literacy. Students are well aware that the cohesion and functionality of the society in which we live are closely intertwined with the society in which they live. The absence of information literacy reduces everyone's opportunities for decision making, choices, and self-determination, which can be seen as unfavourable. Information literacy is an essential component leading to an individual's survival in a complex society.

"People are bombarded with information from many different sides, and almost daily, they are forced to filter this information and find out or search which information is true and not. In order to use any information to further one's work, one must seek out more and more sources and constantly verify that it is the truth and the facts." (IL20)

> "Nowadays we have a myriad of information on the internet, we can find almost anything we can think of, but do we need the information, or does it just take time and energy to search and then read it?" (IL22) or

> "It is exciting to see this, for example, before an election, when both the browser and Facebook deliberately show you, especially the posts you will vote for. You get so convinced that if everyone around you votes for them, they must surely win. They are just showing you what you want to see. It is quite dangerous because it ultimately leads to misinformation and a divided society." (IL20)

For students, this theme is strongly associated with the formation of epistemic space, filter bubbles, and the personalised ordering of outcomes. Filter bubbles integrate several aspects of information literacy skills, such as being able to search, filter, and organise results. At the same time, filter bubbles (21 code occurrences) are inherently linked to emphasis of the individual tools involved in their construction. In this regard, students report, for example, the following:

> "I realised that personalised search is a big advantage in finding the information I need. On the other hand, it can be not easy to then search for anything outside my information bubble. I find it important not to "get lazy" and keep searching for new original solutions to problems, not just staying in a comfortable, personalised environment." (IL20)

> "I was most interested in the topic of information bubbles because it is interesting to see how media and social media affect our lives. It also partly explains that many people think a certain way, and even though there is much evidence that that way does not make sense, they continue to think that way because they never get to the evidence."

> (IL20) and

> "Unfortunately, we live in a time when disinformation and its spread is an acute pain of the internet. Determining the validity of sources and working with them thus becomes a far more complex and difficult problem to address, and everyone online should be aware of this fact and work with it. Staying only inside your information bubble is a very unhealthy decision today." (IL20)

These examples show that filter bubbles have a primarily social dimension for students. They are a problem related to the functioning of society dependent on the flow of information. Thus, it can be said that students perceive information literacy as the prevention of succumbing to disinformation and fragmentation of society. None of the analysed student statements focused on an individual economic problem, but all of them followed society's values.

3.3. Information Literacy Is the Ability to Assess, Locate, and Organise Information

Specific discourses are then linked to a particular part of the DigComp digital competence framework. Students touch on the three manifested areas in various forms—information retrieval, information organisation, and, above all, information evaluation. The evaluation of information becomes the most critical aspect of determining the quality of information literacy. Students perceive that there is plenty of information available, that even an imperfect search can produce results, and that an imperfect organisation is a long-term problem; the key is the quality of the ability to work with information linked to its evaluation.

For example, students say:

> "Evaluating information, because I am trying to improve myself in some way just in being able to spot fake news and how to avoid automatically taking everything I read as true and trying to verify it at least a little bit and trying to find more different sources that cover a topic." (IL19)

> "What I found most interesting is that information can be evaluated using different tests (such as CRAP or SMELL). I did not even know that such a thing existed, and in the future, I would like to try one of the tests, for example, when I evaluate the relevance of a source when writing a term paper." (IL22) or

> "In particular, the statement that people do not trust the media stuck in my mind. When I focused on observing my surroundings, I found that in some situations, on the contrary, people trust the media almost blindly. In my opinion, what matters is what information the media conveys. People generally do not trust information about the state administration, but they trust tabloid articles very easily." (IL20)

The evaluation of information cannot be separated from the general ability to understand the world we find ourselves in. Students try to relate the ability to evaluate information to specific situations in their practice or social reality. The ability to evaluate information is essential to combat misinformation, which can be seen as one of the biggest social problems of the information society. At the same time, as students point out, information evaluation does not stand in isolation from other information practices. It is indisputable that information literacy constitutes a fundamental defence mechanism against disinformation, which strongly legitimises its development in specific courses, projects, and activities.

When it comes to the organisation of information, students emphasise the dimension of their own needs:

> "Until now, I have not actively realised, or at least perceived, how my learning environment and information management determine outcomes in my professional and academic life. After reading this lesson, I have started to focus more on this, and I am going to modify my environment and my work with tools and outcomes a little bit, also based on the information I have acquired in the lesson." (IL22) or

> "It helped me clarify how I should go about finding the ideal organisational system for personal and school information and documents. I think personal information management is something we all need to master these days. Otherwise, we are in danger of having much-unorganised information." (IL22)

The competency related to searching was related to the experience with the different tools,

> "The area I was most interested in was information retrieval and filtering because this is the competency I would like to improve in, as I find it very important to be able to find the information I need quickly and efficiently." (IL21) or

> "I think it will be great to learn about more advanced search engine functions and generally get deeper into internet literacy." (IL21) and "I learned that, for example, the Google search engine personalises all the data, thus creating information bubbles. I was also intrigued by the semantic web, which should improve searches with shorter search terms and the possibility of better linking of information". (IL21)

What is remarkable about this code is that it does not occur individually but only ever in relation to others. This may indicate the fact that students already perceive information retrieval in particular as a completely habitual matter, which they only explicate in specific situations in relation to other problems or topics.

Students build on the assumption that good (and liberty, democratic) decision making presupposes information in this discourse. In order to act correctly, one must have good information and the ability to understand it in order to distinguish between false and true. In this respect, information literacy is a prerequisite for social order because its absence leads to information poverty or allowing oneself to be manipulated. Students know that their epistemic field, co-constituted by technology, is not unproblematic but requires constant reflection, critical assessment, extension, and evaluation.

3.4. Technological Discourse

Although we list it separately, the technological discourse is implicitly or explicitly included in all the previous discourses; it is not possible to talk about tools without concrete technical solutions that transform practice. The transformation of practice by technology is the motive we can attribute to this discursive approach. The students focused on the area of semantic technologies and worked with them:

"I was most interested in the topic of the Semantic Web. First of all, because I like the idea of how it could be easier to search for certain information, especially information that would have a quick practical use, such as how to fix a car, how to do laundry, and others, mostly it could be practical for people who need a clear answer right away." (IL19)

"I was most interested in the semantic web, and I had no idea about this. It seems that for me, as a student and a search engine/browser user, such a thing would be handy. I hope this technology comes soon because I often have a query on the browser where one sentence is enough as an answer, and I do not need millions of links." (IL21)

"I was also intrigued by the term "Semantic Web" in the text. Everyone would welcome such a search. It would be a much easier job with guaranteed results." (IL20) and

"I was most interested in the topic of the Semantic Web. Mainly because I like how it could be easier to search for certain information, especially information that would have a quick practical use, such as how to fix a car, how to do laundry, etc. Mostly it could be practical for people who need a clear answer right away." (IL19)

The examples show that information literacy is not socially accessible to all and involves some effort in its updating. Therefore, some students believe that technology can make their work with information easier. Another group of statements relates to the issue of artificial intelligence as a means of redefining existing practices:

"I am interested in it because of the algorithmisation of everyday life, which makes it possible to leave some necessary activities, for example at work, to technology, which can do them for us, and we will have more time for other important things." (IL22) or

"I believe that the very long time it would take to improve the filtering of misinformation is not as long as it may seem. Technological development is really moving forward, and scientists are becoming more and more inventive, so it may be that in a few years, an algorithm will be ready that can detect fake news and filter it out by itself." (IL21)

As with the semantic web, a discourse is associated with a specific optimistic worldview about algorithmic change. Whereas filter bubbles are viewed negatively and content personalisation offers ambivalent evaluations, the technological changes associated with information literacy are positive changes for students. In terms of describing the social aspects of information literacy, it can be said that students understand technological change as a socially intervening issue. On the one hand, there is a need for education linked to the ability to work well with technology, and there are overlaps in areas that are difficult to understand. On the other hand, students see this dimension of information literacy as a tool that can make people's lives easier or make information more equitable and accessible, which is a crucial issue for social cohesion in society. This does not mean that there are no dangers, such as filter bubbles, which can lead to the polarisation of society. It is an education process that ensures the correction or stability of society so that it can function as a democratic entity.

4. Discussion

The above analysis shows four basic discourses that can be identified in the analysed set of studies. In this section, each discourse will be placed in the context of other studies and a set of issues or themes that need to be addressed in the field of information literacy, and its formation will be developed. The definition of information literacy does not form any single discourse but can be seen as a fluid (Bauman 2005) definition. This fact does not detract from the fact that it is a key element in the sustainability of social, economic, and cultural elements of society. In the Discussion section, we will proceed by elaborating on particular discourse themes in the context of the literature, showing how respondents' responses in our research can saturate these different aspects of understanding information literacy.

The relationship between social justice and information literacy can be seen in the works of Ribot and Peluso (2003) and Oyediran-Tidings et al. (2019). They emphasise the right to information as the foundation of equitable education. (Saunders 2017; Webber and Johnston 2017) Therefore, information literacy is a pathway to autonomy in family and social contexts, as Nishikawa and Izuta (2019) demonstrate. Consequently, it can be argued that the development of information literacy is a critical issue with regard to the social changes and shifts associated with the development of the information society (Balkin 2017; Beniger 2009; Webster 2014). This approach is also relevant for students, who understand that the aim of information literacy is to ensure a world in which they can live freely and make their own choices. Student accounts often focus on the process of intergenerational coexistence.

Information literacy is a tool for combating information poverty (Norris 2001; Strand and Britz 2018), but it is also an environment in which to proceed for issues of discrimination (Costello and Floegel 2021; Losh and Wernimont 2019) or question the sustainability and quality of institutions concerning critical theory. (Gerrity 2018; Hicks 2018; Tewell 2018) Related to this is a rethinking of the library's role in information education (Gregory and Higgins 2017; Loertscher and Woolls 2021). Thus, it can be said that this discourse is well saturated in the literature and corresponds to one of the specific paths that the reframing of the concept of information literacy will take.

Yu (2006) points out that the systematic definition of information poverty is problematic because it spreads across multiple discourses (information gap, information division, information inequality, etc). The prevention of information poverty is information literacy (although it may not be a sufficient factor) (Haider and Bawden 2007; Yu 2006). Haider and Bawden (2007) emphasize the importance of libraries in reducing this form of poverty (not just information poverty but poverty in general). The development of information literacy must be differentiated for individual target groups. The authors found a connection between information grammar and lifelong learning (Candy 2004). This discourse, therefore, refers to the moral duty or responsibility of (not only) libraries in the social field. (Alemna 1995; Mia 2020; Shrestha and Krolak 2015)

The second discourse also has clear social (and sociological) anchors and can be linked to the ideas of Bauman (2005, 2013), working with fluid and rigid modernity (Caldwell and Henry 2020; Pollock 2007). It emphasises the importance of the gradual blurring of sharp categories in a complexly changing dynamic environment (Lakoff 2008). Information literacy here serves as a means for individual success (Candy 2004; Dzula et al. 2020; Nzomo and Fehrmann 2020). This discourse appears most often in student accounts concerning the ability to use tools or services to solve specific problems. The ability to work with tools provides opportunities for success, self-realisation, and learning. Working with tools is a way for a student to make it in a dynamically changing world. The mutability of tools and their functions makes this discourse an approach linked to adaptation. Tools are a form of adaptation to the changes that the entire information environment is undergoing.

It is necessary to consider the social constructivist line (Gamson et al. 1992; Hornidge 2007; Wohn and Bowe 2014), i.e., the fact that the world people live in is shaped by the information available to them through technology and how humans structure perception

based on that information (Floridi 2019). Technology becomes an agent of change (Floridi 2014; Bridle 2018)—an element that cannot be easily separated from society. Information literacy needs to leave behind a pure library conception or understanding of itself as a technology-using activity and work much more with an interaction schema between humans and technologies.

There is a social and technological discourse. The importance of digital competencies and the ability to use technology is emphasised as a prerequisite for information literacy (Carretero et al. 2017; Ferrari et al. 2012; Spante et al. 2018). Information literacy ceases to be a unique competency and is more integrated into a broader set of meta literacy (Gersch et al. 2016; Mackey and Jacobson 2011) or multiliteracy (Hodgman 2005; Iyer and Luke 2010). Technology is a crucial factor in this integration. Willson (2017) asserts that it is not possible to simply distinguish activities that are affected by algorithms. Algorithms are becoming an integral part of our lives, which can cause problems (Besse et al. 2018; Eiband et al. 2019) or concerns. Therefore, it is necessary to focus on the level of information literacy to understand algorithms of everyday life (Neyland 2019).

Although the concept of information literacy will be maintained, it can be complemented by information literacy, (Blackall 2002; Somerville et al. 2006) data literacy (Shields 2005; Stephenson and Caravello 2007), or algorithmic thinking (Haider and Sundin 2020; Head et al. 2020). Thus, it can be said that technology, on the one hand, expands and enriches the content of the concept of information literacy. On the other hand, it incorporates information literacy itself into a broader model of literacy. The phenomenon of digital humanities (Bell and Kennan 2021; Jannidis et al. 2017; Smithies 2017) clarifies that technology will transform societies. That means it is impossible to talk about literacy in the 21st century without a technical component of these competencies. (Almerich et al. 2020; Nouri et al. 2020). Students are aware of this change associated with the algorithmisation of everyday life and the technisation of society in general. In the literature, there is a clear emphasis on the fact that technology, through its possibilities, can remove many social handicaps or barriers. Students are optimistic about technology and see it as an opportunity to transform the social environment. On the other hand, they name negative phenomena, such as filter bubbles or aggressive personalisation of content, that limit the unrestricted use of information.

The theme of quality can be seen in several separate facets. The first is the integration of information literacy into individual educational courses and activities (Bakermans and Plotke 2018; Nurhayati et al. 2020; Zhou 2018). These activities are aimed to develop information literacy as a genuinely active, constructivist-oriented concept linked to problem-solving skills (Frerejean et al. 2019; Mann 2019; Rahman 2019). Thus, the professional community can talk about trying to work with the quality of education.

The second significant level is the emphasis on the quality of information education itself (Beile 2008; Duffy 2019; Lau 2013) or the fact that the quality of information literacy is reflected in the quality of education in other areas (Banik and Kumar 2019; Omeluzor and Ogo 2018; Solmaz 2017). Focusing on the quality of information literacy education means pursuing the need to improve students' educational performance. Thus, it is one of the critical pathways to improving education (Lau 2013; Pinto et al. 2019).

Part of the literature is also focused on libraries as a place for the development of information literacy (Bapte 2019; Iqal and Idrees 2021; Reynolds et al. 2017; Trembach and Deng 2018). The literature has shown that, on the one hand, there is a move towards other places (especially schools or cyberspace) where education can occur, but at the same time, that there is a developing effort to redefine the institution of the library as a place where information literacy development occurs (Pun 2017; Tewell 2018). A crisis of the institution can be identified that is simultaneously linked to the fact that one of their core activities enjoys excellent social prestige and importance. At the same time, it must be said that the position of academic libraries is much better in this respect, and universities reflect their institutional structure and importance, (Lanning and Mallek 2017; Wissinger

et al. 2018; Yevelson-Shorsher and Bronstein 2018) even if they to are undergo a gradual transformation.

Haider and Bawden (2007) point out that libraries should take responsibility for developing information literacy in society. However, libraries do not have the monopoly that Candy (2004) envisioned in this area; education is democratized and decentralized in line with critical pedagogy (Beckett 2013; Glass 2001; Hart 2001; Zaldívar 2015).

Two important conclusions emerge from the discussion (Figure 1):

(1) There is some similarity between the discourses in the literature and those identified by students, i.e., between social justice and social order; between social change and digital competence; between tool literacy and higher quality; and between social change and technological discourse. These similarities imply a certain complementarity, not identity.

(2) In keeping with the postmodern tradition, information literacy can be said to emerge at the intersection of these discourses; it is not a step in either direction. It cannot be defined by just one discourse but is composed of multiple layers and approaches.
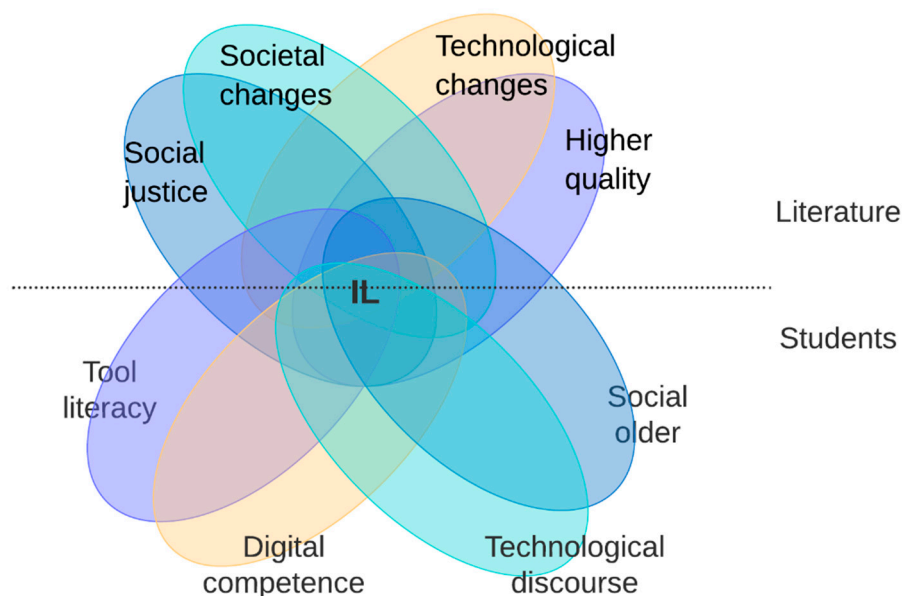

Figure 1. Relatedness of the discourses identified in the student responses (bottom) and in the literature (top), marked with the same colour. The intersection of all these discourses is information literacy (IL). For clarity, in Figure 1, we use the abbreviation from "Information literacy is the ability to assess, locate and organize information" to "Digital competence", maintaining the nomenclature used in DigComp (Carretero et al. 2017). Figure 1 author is the author of this study.

5. Conclusions

In this study, we worked with data from a single institution (university) training future librarians and information scientists. It is the largest workplace in the Czech Republic, and given the number of students and the sample, our research provides relatively representative data due to the specific position of the field of study—study at Masaryk University is quite dominant in terms of the number of LIS students and the focus on information literacy in the Czech Republic. It can be said that the data are representative of LIS students in the Czech Republic. However, the broader representativeness of the research would need to be verified by research in other countries, either in the central European region or worldwide.

The sample of 132 statements analysed is not large. For greater validity, further investigations would be needed, for example, at other sites or over a more extended time. Nevertheless, we believe that it provides a reasonable basis for further research.

The educational background of the students may also be a limitation. In our research, we sampled undergraduate students at the beginning of their studies (most in the second semester of their studies) but who are already influenced by the field somehow. Although they are not familiar with the particular discourses drawn from the literature, they are influenced by their study of LIS. Thus, our sample is not representative of the general population of students. At the same time, students from different LIS disciplines might have different understandings of what information literacy is.

The students were informed that their responses could be used in the research and agreed to this use. The results were processed entirely anonymous. At the time of data coding, the research author was not made aware of the originator beyond information about the year of data collection. Secondary anonymisation was achieved through translation from Czech and Slovak into English, which prevents the possible identification of specific lexical or stylistic variations.

In this study, we analysed 23 documents from the Web of Science database to identify four fundamental discourses currently found in the field of information literacy. The small sample size of the documents analysed represents one of the major limitations of this study. Future research could focus on a wider set of documents and shift the focus a qualitative to a quantitative approach. Similarly, the fact that we are working with a relatively small number of students from a single discipline could also be considered a limitation. The topic unquestionably deserves more extensive research, which would deepen the understanding of the construction of discourses by the students themselves or other target groups.

Open access is related to methodological transparency (studies are freely available to all) and the ethical dimension of research. In this study, we used only texts accessible to all students and researchers and reflected in further research work. We must emphasize that selecting only open access journals is a strongly limiting factor of this study. It is possible that in our study, we did detect some approaches or discourses because they are not present in open access journals. The reduction of 44 papers for analysis is significant. Nevertheless, we perceive the promotion of open access as a declared value at the national and EU level, and we want to make a value statement in this way (Maddi et al. 2021; Mazur 2021).

The linguistic limitations may lead to specific emphases, directions, or approaches not included in this research or to an accentuation of one (Occadian or Anglo-Saxon) style of thinking, practice, or research approach. It would be worth considering another research team to compare findings with studies written, for example, in Spanish or Portuguese.

Haider and Bawden (2007) stated that information literacy is an essential prerequisite for combating and preventing information poverty. The sustainability of the increasingly complex society in which we live depends on how we can work with it (Haider and Bawden 2007). Bauman (2013) works with the concept of rigid and fluid modernity. This study tries to show that it is impossible to create a "rigid" definition, as such attempts lead to aporias, overly general or additively unsustainable definitions. Instead, we present a fluid—postmodern—view of information literacy as an instrument for a sustainable democratic society.

The theme of information literacy as a pathway to social justice, one of the core values of the Western cultural circuit, is significant. From the respondents' point of view, information literacy is a way to succeed in a complex, interconnected, and, in some ways, disrupted world. Success is relevant from the social commons' perspective, which means success is not experienced just from the individual view.

However, there is a debate about who defines information literacy and its goals and why. There is a tendency to interpret information literacy, on the one hand, as a tool for illiberally understood successful competition in the information society, whether in the economic or educational sphere. Information literacy is seen as a tool available to the individual for self-actualisation and self-assertion. Additionally, a group of authors evidently emphasises the possibility of repairing the world through critical, engaged reflection.

In addition to this firmly ideologically anchored discourse, there are two pragmatically constructed discourses. The first emphasises the need to update the understanding of information literacy as technology changes its content and the tools available for working with information. The second seeks to identify tools and practices for better and more successful education and improvement in the concrete conditions of human society.

Students also understand all these discourses. Their statements also talk about tool literacy as a tool for working with the world they have to navigate. They see tools and applications as enabling them to be successful in this world. As the world changes, it should be emphasised that so do the tools, their versions, functions, and capabilities. This discourse is therefore adaptive to the process of change.

In students, we also see a discourse associated with information literacy as a tool against the disintegration of the social cohesion of the world. It is no longer a tool for empowering the world but rather a kind of defence. Information literacy serves to sustain the world in the complexity and freedom they know. Students see technological change as an opportunity to improve people's position in a complex information environment. Technological changes make the world more globalised and complex and make it easier to solve specific difficulties. Technology is an instrument of positive change, of optimistic prospects. What individuals lack in information literacy can perhaps be overcome by new technological possibilities.

Instead of a shared definition and a unified discourse, a value structure emerges from the students' statements. Information literacy is not a set of specific skills and knowledge. Information literacy is an essential attitude towards a globalised world where they want to know, survive, and experience a socially cohesive community with others. It is not a filler but a shared value that highlights the fluidity of modernity, its globalising and connectivist dimensions, and, at the same time, gives hope that it can be managed. The world is sustainable through this literacy.

A common denominator across all discourses is the unquestionable role and importance of information literacy. It is put in the spotlight, and its importance for practical education is emphasised. However, in parallel with this, there is a growing conviction that no definition of information literacy is possible, that partial definitions for study or research are possible, but that the whole concept will have to undergo a paradigmatic transformation towards an understanding of itself without a sharp and permanent definition.

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Appendix A

Table A1 provides an overview of the studies used in the construction of the discourses. It includes a brief summary of the key idea in the text, an indication of the methods of the work, and the IF of the journal in which the study was published and the subject area. The table shows that the majority of studies come from the field of LIS and education.

Table A1. Overview of the analysed studies.

Author and Date	Emphasis	Summary	Method of Introducing the Definition	Area	IF
(Stonebraker et al. 2017)	Social justice	The authors work with the concept of critical business information literacy, emphasising that it is possible to conduct socially just and ethical business and disrupt the dominant discourse with their integral approach to particular areas of business and commerce.	Through examples of good practice	Economy, librarianship	N/A
(Irving 2020)	Social justice	The author draws attention to the fact that the goal of information literacy is critical thinking about the information and its evaluation. However, this occurs within the unified neoliberal framework of libraries, which leads to a distorted picture of what information literacy should look like.	Reflection on the literature and ideas of feminist and critical pedagogy	Education	N/A
(Bury 2016)	The need for higher quality	Libraries and faculties should be partners in the development of information literacy. The absence of functional frameworks leads to creating different curriculum levels, which is not practical for students. There is a need to move away from the library IL curriculum and focus more on students' educational and academic needs.	Analysis of research data with representatives of 20 faculties.	LIS	0.831
(Mackey and Jacobson 2011)	Technological changes	Information literacy is not separate from other literacies—media, digital, visual, etc.—but it is an overarching concept. At the same time, this meta-literacy extends in its understanding from the individual's work to the dimension of working with social media in a socially structured environment. The engine of these changes is technology, which forces us to rethink the whole issue.	Literacy analysis	Education	2.381
(Calzada Prado and Marzal 2013)	Technological changes	Technology is enabling more and more data-intensive work. Without data literacy, it is not possible to understand or participate in the creation of contemporary information. The study shows that people should talk about a kind of double data and information literacy. It then defines the data part of it and calls for its development in the library environment.	Analysis of documents focused on data and information literacy	LIS	0.521
(Khlaisang and Koraneekij 2019)	Societal changes	The study highlights a fundamental problem with the fragmentation of the terms—information literacy, media literacy, and ICT literacy. At the same time, it points out that there are no standardised tests for their measurement, which makes their actual evaluation difficult. Using data from MOOCs, the study attempts to standardise such measurement.	Quantitative research	Education	N/A
(Feerrar 2019)	Technological changes	The study sought to identify students' perspectives on digital competence education. In the interviews, there was a strong emphasis on the ability to use technology in a specific context and the need and the problem of the young researcher at university. There is a clear shift from the framework of the abstract information literate person to the concrete person of the student with their needs and life choices.	Qualitative research	LIS	0.831

Table A1. *Cont.*

Author and Date	Emphasis	Summary	Method of Introducing the Definition	Area	IF
(Lane et al. 2019)	Societal changes	The study discusses a broader portfolio of competencies that people need to include in the literacy model, perhaps even information literacy. It specifically focuses on working with visual and spatial data, which is essential for information literacy in some areas of information work. It highlights the problematic relationship between literacy development and curriculum and the overly conservative nature of the education system.	Analysis of the literacy relationship, theoretical research, TIMSS analysis	Education, engineering	2.177
(Veenker and Paans 2016)	Social Justice	The study focuses on health literacy and its relationship to information literacy. It emphasises that literacy is tied to the ability to make autonomous decisions for oneself, whereas the prevailing model of medical communication is that of a receiver–transmitter. This reduces the possibility of individual autonomy. They need to find models that support an interactional conception of communication and the whole approach to information literacy. To be literate is to take charge of one's car in a dynamically constituted information interaction. There is a big difference between understanding information and using it to change one's behaviour or attitude.	Analysis of the health literacy curriculum	Education	2.463
(Marcella and Chowdhury 2020)	Social justice	People do not realise that they are information illiterate, which leads to an endemic of information poverty. Information-poor people then make bad decisions without realising the roots of their problem. At the same time, this situation cannot be addressed by a single curriculum but by a complex and primarily targeted and individualised approach to specific individuals and groups.	Academic discussion, qualitative research	LIS	1.992
(Ridley and Pawlick-Potts 2021)	Technological changes	Information literacy and algorithmic literacy need to be integrated into the library environment. Education must broaden the perspectives of classically understood IL to include the complex ability to use algorithms to solve problems and understand them. The study explicitly works with the need to understand the principles of AI at the level of algorithms.	Literacy analysis	LIS	1.160
(Flewitt and Clark 2020)	Societal changes	The study argues that children's environments (up to the age of three) need to be conceptualised as permeable, allowing children to effectively negotiate intense relationships and express themselves across different domains and media, both in the online and offline worlds and to use technology for this self-actualisation.	Qualitative research	Education	2.769

Table A1. *Cont.*

Author and Date	Emphasis	Summary	Method of Introducing the Definition	Area	IF
(Marzal 2020)	Societal changes	The study draws attention to the fact that talking about isolated compendia makes no sense. The aim was to identify a concept of multiliteracy that can be subdivided taxonomically, emphasising that it is one concept that serves to cope with the society and environment in which people find themselves. This environment is increasingly complex and technologically interconnected, leading to increasingly porous boundaries between concepts.	Literacy analysis	LIS	2.253
(Pinto et al. 2018)	Societal changes	The study explores the IL field of information dissemination and shows that even in the social sciences, there are significant differences within the field. Crucially, not all aspects of IL are given equal attention in the academic curriculum, leading to highly uneven development of these competencies. From the perspective of both curriculum and research, it can be said that certain aspects of the ACRL model are more critical (information retrieval, evaluation, and production) than others (information sharing or dissemination), which opens up a debate about the extent to which this is a functional competency framework.	Quantitative research	Informatics, LIS	1.903
(Martzoukou et al. 2020)	The need for higher quality	Information literacy is part of digital literacy. Prior experience with technology is essential for basic information literacy in a university setting. Universities assume literacies, usually without naming them but taking them for granted, making it difficult to transition to university education.	Quantitative research	Informatics, LIS	1.819
(Hauck 2017)	The need for higher quality	The case study demonstrates the possibilities of combining digital humanities and information literacy as a common catalyst for active learning. It shows that this connection can lead to students' academic skills, which naturally implies a higher quality of education. Working on a specific product can be crucial for developing information literacy in particular university courses, allowing one to follow the subneeds of each discipline.	Quantitative research	LIS	N/A
(Satija and Martínez-Ávila 2019)	Societal changes	The study points out that although definitions of information literacy often work with specific terms, their meaning may not be rigid and unchanging. They demonstrate this by analysing the concept of plagiarism and related concepts—it is a traditional area of IL, but its content is constantly changing. Therefore, even the formal immutability of definitions contains a dynamic transformation of the actual content of competence.	Literacy analysis	LIS	N/A

Table A1. *Cont.*

Author and Date	Emphasis	Summary	Method of Introducing the Definition	Area	IF
(Glaze 2018)	The need for higher quality	The study points out that one of the concepts framing university education may be the development of scientific literacy, which is closely linked to information literacy. Its careful consideration can lead to greater student activation, reduced transmissive methods, and a deeper understanding of the whole subject. At the same time, it is clear that IL and scientific literacy are concepts that complement and presuppose each other, as demonstrated by their respective frameworks.	Literacy analysis	Education	N/A
(Kirschner and Stoyanov 2020)	Societal changes	The document highlights the fact that information literacy is currently the only competence that students need. However, how to develop it, what it comprises, and why is not clear. The study's authors conclude that the importance of developing metacognitive aspects, self-management and motivation, creativity, collaboration, communication, critical thinking, and problem solving come to the fore. These form a kind of thought base for information literacy in linking specific skills and lived practice of particular students.	Quantitative research	Education	2.893
(Teixeira Lopes et al. 2017)	The need for higher quality	The study shows that the ability of a user to work with information is greatly influenced by the language structure of the resource they are working on. Suppose the user is to be able to use the information for their needs. In that case, they must also understand the words they use to search for information and the information provided by a particular information system. Improving user information can thus be achieved by developing information literacy and better designing knowledge systems that work more with user literacy.	Quantitative research	Informatics, LIS	2.687
(Little et al. 2016)	The need for higher quality	The study links reading and information literacy. Through reading comprehension, the student gains the opportunity to become literate.	Quantitative research	Education, rehabilitation	2.859
(Wendell et al. 2017)	The need for higher quality	The study focuses on the process of reflective decision making. It shows that one of the components of this process is information literacy, expressly understood as the ability to evaluate and communicate information in a team. Without information literacy in this specific sense, it is impossible to consider an effective design process for any object.	Qualitative research	Education, engineering	3.146
(Brady et al. 2016)	Social justice	Definitions of information literacy focus primarily on people without disabilities. However, people need to broaden the focus on information literacy to include persons with specific needs and create, communicate, share, and make information accessible so that these persons can work with it. They must also be information literate, which requires specific educational and methodological practices.	Description of the specifics of communication with people with multiple disadvantages	Education, rehabilitation	2.500

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