How not to drown in the flood of information?
Selected aspects of the information culture of adolescents

Introduction

Observed during the last decades the development of the information society is inextricably linked to the expansion of modern information technologies. Spreading digital information and communication technologies have become the basis of many structures and organizations functioning in the modern world, as it influences the lifestyle of each individual. Civilizational changes, visible mainly in the technical sphere of human existence, have contributed to changes in the way of human life, work, education or entertainment. The development of modern technologies has caused significant social, economic, cultural and political changes resulting in a perceptible decrease in the importance of material goods for the increase of intangible assets, i.e. information and knowledge. The observation of the transformations around us and the perceived rate of changes imposed by the development of modern technologies is so great that the literature proposes the term “digital revolution”, which concerns both: ways of communicating, accessing information and its processing, as well as the language of communication itself.

1 The following article has been written on the basis of the results of the author’s original research project, published in a book entitled: K. Borawska-Kalbarczyk (2015). Kompetencje informacyjne młodzieży w perspektywie zmian szkolnego środowiska uczenia się. Warszawa: Wydawnictwo Akademickie Żak.
Modern forms of communication – available due to the development of technologies and eliminating barriers of distance between its participants – have made information one of the most important goods of the information society. As Bulik points out, “properly processed and used information guarantees or at least facilitates users’ success and satisfaction in many areas of their lives” (Bulik, 2011, p. 3). The author presents a specific vision of the stratification of society in the digital era, distinguishing three classes: the new “proletariat, cognitariat and digitariat or netocracy” (Bulik, 2011, p. 10–11). The difference between them are competences that allow you to access and process information. In the author’s opinion, the new proletariat is characterized by passive approach towards the developing technology, resulting in blocking of information evaluation processes with the appearance of its uncritical reception. Meanwhile, according to Bulik, the members of the cognitariat class have a certain range of skills related to information processing or even programming, but not at a sufficiently high level, which means that they would not be able to provide themselves with access to the most desirable and up-to-date information. The highest class of the information society – netocracy, according to the author, is focused on “imploactive consumption” of information. Its members are convinced that relevant information contributes to their own development and facilitates success in many areas. Furthermore, in addition to the efficiency in reaching the desired information, representatives of netocracy are particularly allergic to unnecessary information (information noise) (Bulik, 2011, p. 11).

Therefore, the skills in the efficient processing of information are essential for the human effective functioning in the information society. The dynamism of expanding the scope of activities related to information cause the increase in the importance of knowledge and skills that allow to effectively operate information for the implementation of accepted tasks. In the subject literature and empirical practice, those skills are defined as information literacy.

Referring to the definition created in 1989 by the American Library Association, the Association of College and Research Libraries (ACRL) recognized information literacy as a set of skills, which includes: determining the nature and scope of the information needed; obtaining the necessary information in an effective and efficient manner; critical assessment of information and its sources and inclusion of selected information to the knowledge base and value system; effective use of information to achieve a specific goal, both individually and in a group; understanding of economic, legal and social
problems related to the use of information, and the acquisition and use of information ethically and legally (Information Literacy Competency Standards for Higher Education, doc. elektr., 2000). “A competent citizen, no matter if he or she is a student or a specialist in a given field, can recognize his/her information needs, and is able to locate, search, obtain, evaluate, organize and use information. A person with information literacy knows how to use the world of knowledge and how to transfer the experience of others to their own ground “(Lau, 2011, p. 16).

Such competencies become a canon of general education, they determine professional and social activity, they facilitate interpersonal communication. Their high level stimulates a much faster growth of knowledge, continuous updating of qualifications and competencies, both professional and those general. They favour the development of “information culture”, understood as “the system of attitudes of man towards the role of information and information technology in the development of modernity” (Furmanek, 2002, p. 64). It is perceived in two ways: as a philosophy of functioning in the information society and as a set of skills in the use of IT tools. It can be interpreted as a way of understanding the meaning of information and information technology in human life, and at the same time, it is a certain standard of attitudes, norms and procedures of functioning in a new social dimension (Aftański, 2011, p. 67).

Recent years have markedly increased the need to have the skills in efficient, quick and effective searching for information. This is due to the dynamic and often uncontrolled increase in information resulting from the development of digital techniques of its production, transmission and reception. In the analyzed area of multiple domination of digital technologies, it is impossible to omit the existence and domination of information, which is gaining “metaphysical status: it becomes both a means and a goal of human creativity” (Postman, 2004, p. 79). The contemporary society has created a new type of communication based on different than in the previous epochs ways of circulation of information. In the modern world of Western civilization, the availability, scope and speed of information transfer, especially the digital one, cannot be compared with anything that has so far appeared in the history of mankind.

According to Mayer-Schönberger and Cukier, every day Google processes over 24 petabytes of data. Twitter from year to year increases its volume almost three times. Every second on YouTube, 800 million users add an hour
of new videos. On Facebook, nearly 10 million new photos are sent every hour, and every day its users perform nearly 3 billion various activities: from comments to share and click “I like it”. By providing such a staggering for an average network user information, the authors indicate that having well-developed knowledge and effective tools enabling analysis and selection of data is the condition necessary for facilitating the use of cyberspace. In such a processed form, they can help in the creation and transformation of the world (Cukier & Mayer-Schönberger, 2014).

Methodological assumptions of the author’s own research

The predominant group of recipients of the currently experienced information overload – the flood of information, especially a digital one, is contemporary youth. Being immersed in the cyber world, modern adolescents have access to a huge information offer basically on every topic. In reference to the above considerations, the important cognitive attribute of young people, forced by current information changes, is the ability to work with information, the flood of which is experienced by every human being. Therefore, it is important to shape the competencies needed to select, receive, interpret and verify information, as well as to process information and transform it into useful knowledge. These assumptions have become the basis for creating research, the objective of which is to learn about the level of one of the important aspects of information literacy, which is arrangement and selection of information in the youth self-assessment.

The skill in information selection understood as “the ability to deal with redundancy in order to eliminate unnecessary information (untrue, repetitive, outdated, those that do not concern the subject, etc.)” (Batorowska, 2012, p. 12) come to the foreground. It involves the process of structuring the selected content and therefore requires a certain level of maturity of the information user’s cognitive processes. The effect of mature information behaviours in the selection and arrangement of information is high-quality information. The choice and arrangement of information is decisive for the user, who is required to have a high level of both information and cognitive responsibility and maturity (Morbitzer, 2003, p. 311). The huge amount of information provided by today’s world means that the user can experience problems with reading, memorizing, understanding, processing and deciding which of them are the most useful and valuable. The process of skilful selection of
available information is therefore of great significance, as the mere possession of information gives little benefit. In this context, it is worth emphasizing that in the developing society of learners it is important to be able to navigate in the stream of the flood of information, as well as to develop associated with it cognitive skills and critical thinking. An uncritical approach to the process of working with information raises serious consequences, the manifestation of which may be the submission to the myth that everything that is on the web is true and reliable. Summing up, the process of searching for valuable information must be combined with a critical analysis of the content and structured reflection on the formal construction of knowledge.

The research was based on the method of the grading scale, while the measurement tool was the author’s own “Scale of the level of students’ information literacy” (abbreviated to S.LSIL). The type of the used scale was the numerical scale – while making the estimations the surveyed students received a list of behaviours concerning information with a various level of detail, to which there were assigned appropriate weights according to the key: from 1 – definitely not; to 5 – definitely yes. The content of scale statements covered three components of the information literacy structure: knowledge about the process of working with information, skills and attitudes.

The research was participated by 1362 first-grade students from 35 post-secondary schools of the Podlasie Province, representing various types of schools, both general high schools (19 institutions) and technical post-secondary schools (16 institutions), located in both the urban and rural environment.

Research results

In the context of the above remarks, the author checked the level of selective and critical selection of information manifested by students and their structuring. The abovementioned aspect of information literacy was described with the use of seven scale statements, appearing under the title: “Arrangement and selection of information”:

1. KI_1. In the process of searching for information, I compare information from various sources in order to check their reliability and integrity.
2. KI_2. I have no problems with extracting the most important information from the found information.
3. **KI_3.** I know which information is valuable to me and will be useful to me.
4. **KI_4.** I arrange (sort) the found information according to various criteria.
5. **KI_5.** Comparing information from various sources to assess their validity is of little use and takes too much time.
6. **KI_6.** I prefer to work with pre-arranged and segregated information.
7. **KI_7.** To better assess the credibility and reliability of the found information, I discuss it with other people.

Table 1

*Distribution of the frequency of the selection of the scale items in relation to the variable “ARRANGEMENT AND SELECTION OF INFORMATION”*

<table>
<thead>
<tr>
<th>Statement No.</th>
<th>The Scale of Statement Consistency</th>
<th>Total</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Definitely not</td>
<td>Rather not</td>
</tr>
<tr>
<td>N %</td>
<td>N %</td>
<td>N %</td>
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<tr>
<td><strong>KI_1</strong></td>
<td>131 9.6</td>
<td>253 18.6</td>
</tr>
<tr>
<td><strong>KI_2</strong></td>
<td>53 3.9</td>
<td>167 12.3</td>
</tr>
<tr>
<td><strong>KI_3</strong></td>
<td>32 2.4</td>
<td>54 4.0</td>
</tr>
<tr>
<td><strong>KI_4</strong></td>
<td>185 13.6</td>
<td>357 26.2</td>
</tr>
<tr>
<td><strong>KI_5</strong></td>
<td>226 16.6</td>
<td>338 24.8</td>
</tr>
<tr>
<td><strong>KI_6</strong></td>
<td>91 6.7</td>
<td>196 14.4</td>
</tr>
<tr>
<td><strong>KI_7</strong></td>
<td>90 6.6</td>
<td>218 16.0</td>
</tr>
</tbody>
</table>

Source: the author’s own research material.

One of the elements of this style of information behaviour is the sense of the necessity to compare information from various sources. It is highly important in light of widely discussed uncritical trust of young people to data found on the Internet. An illustration of such behaviours was the statement **KI_1:** *In the process of searching for information, I compare information from various sources in order to check their reliability and integrity.* The analysis of the frequency of selection of the scale items shows that not much more than half of the surveyed adolescents are characterized by the assessment of a high and very high level of implementation of such behaviours (53.1%). Nearly one-third of students (28.2%) admit that they do not compare the credibility of...
information they search for (of which 10% say that such information-related behaviours do not have their place in their case). The remaining percentage of the respondents (18.7%) locate themselves in the middle position of the scale (“hard to say”).

In the process of transforming information into personal knowledge, the most important role is performed by the ability to extract the essence of information, to reach the nub of things, which involves the competence of critical text reception. All these were the content of the statement \( \text{KI}_2: \text{I have no problems with extracting the most important information from the found information} \). According to the analysis, the ability to find the most important message brought by the information is common for 39.6% of the surveyed adolescents (the “rather yes” category). Fewer respondents feature the highest level of self-assessment of such activities (the “definitely yes” answer was chosen by 18.7%). These two groups of students (in total 58.3%) are characterized by well-developed efficiency of distinguishing significant information. The other students – 16.2% – declare that they are experiencing difficulties in the process of extracting the main ideas from the information sought.

Another aspect of the process of selecting and arranging information is their valuation (understood here as the assessment of the usefulness of information in the further activities of working with them). The quality of information is described here by the attribute of relevance – the information responds to the recipient’s needs and is of significant importance to them. The statement \( \text{KI}_3 \ I \ know \ which \ information \ is \ valuable \ to \ me \ and \ will \ be \ useful \ to \ me \) served that purpose. In this case, the surveyed students showed a higher than previously assessment of the level of information literacy, as 79.7% of the respondents declared that they are able to extract information focusing on its further usefulness (this group was dominated by the students choosing the “rather yes” answer – 48.5 % and one third were convinced of possessing the said skill in a categorical way). In the minority, there are the respondents with uncertain skills in information valuation, while the students with a low level of selection of information aiming at the assessment of its suitability constitute only 6.4%. For the majority of the students, the information they come across is characterized by the usefulness dimension (they know which one is of value) and they see the possibility of using them to achieve specific goals.

The ability to properly store the found information was reflected in the statement: \( \text{KI}_4. \ I \ arrange \ (sort) \ the \ found \ information \ according \ to \ various \ criteria. \) The tendency of the studied youth to segregate information is more
or less distributed in equal proportions: 39.8% of the young respondents do not attach importance to the segregation of information (among them, 14% have an attitude indicating a complete lack of need to organize information in private stocks), simultaneously a very similar group of the students (38.2%) admits to performing such activities. About one-fifth of students (22.0%) have difficulty in choosing one of the poles of the sense of information literacy in this area.

The research authors asked students to evaluate the value of the process of comparing information from different sources (statement KI_5. Comparing information from various sources to assess their validity is of little use and takes too much time). As it turns out, the majority of the students (41.4%) have a positive attitude towards the process of compiling information found in various sources: 16.6% of them strongly reject the idea that such activity is not useful in the process of seeking information, while 24.8% of them do not tend to incline towards such an idea. Ignorance of the obligation to assess the credibility and reliability of information is, however, manifested by a large part of the surveyed students – more precisely one-third of the respondents (28.3%)

Continuing the topic of selecting and organizing information, it may be stated that despite previous, not always positive, declarations, the majority of the students (58.8%) appreciate the value of working with structured and segregated information: KI_6. I prefer to work with pre-arranged and segregated information. This state of things proves the maturity of information-related behaviour of young information users. On the other hand, however, every fifth respondent does not pay much attention to this (we observed 21.1% of the young people choosing the “rather not” and “definitely not” options). It turns out, that a quite big number of students in their information activities are “groping around” and do not see positive aspects of working with pre-arranged information. Such an attitude may result in the purely incidental selection of information, being in contradiction with objective criteria and, consequently, in a lower quality of processing information into knowledge. It should also be emphasized that although the process of segregating information requires both time and cognitive effort, it results in a qualitatively better and faster process of further work with information. It is obvious that negligence at the stage of information segregation entails many negative consequences connected with the need to cope with the problem of information credibility in more advanced cognitive information behaviours. The more
surprising is the fact that such a large group of students (one fifth) represents the discussed negative characteristics of information behaviours.

Other people who are competent in a given field may play an important role in the process of searching and selecting information. An individual manifesting mature information behaviours appreciates the value of asking questions, participating in a discussion, seeking answers to disperse their doubts, using the knowledge of people with experience in a given field. When confronted with the statement *KI_7: To better assess the credibility and reliability of the found information, I discuss it with other people*, it appears that more than half of the students (56.4%) display information behaviours that demonstrate a good level of information literacy in this area. As many as 38.5% of the surveyed students admitted to displaying such behaviours, and 17.9% were convinced of this in a decisive way. Including other people’s opinions in the process of evaluating the information sought is a good method to increase the effectiveness of this process, as it allows to gain additional judgment, control and evaluation of information. At the same time, it allows avoiding the trap of subjectivism and unilaterality of assessments. In this section of the characteristics of information literacy there did not lack students who in the process of selecting and organizing information rely only on themselves: 6.6% strongly reject the possibility of discussing information with other people, and 16.0% tend to such approach (a total of 22.6%, which means that every fifth student is not convinced of the benefits of discussing the reliability of information). The group of students who have difficulties with choosing one of the categories (no – yes) is represented by a similar number of the respondents.

The analysis ends with the statement: *I do not feel the need to check the truth and reliability of information (KI_8)*. While analyzing this point, the author of the study observed that the majority of the surveyed students declare that in the course of their information behaviours they undertake activities aiming to verify whether the found information is true and reliable (38.3%). A slightly smaller group – 33.0% situates on the opposite pole of the scale, standing in the position that their information activities do not require checking the reliability of information. Moreover, there are slightly fewer students who tend to be more inclined towards a given choice than those who were convinced in an undecided way (23.6% – “rather yes”, 21.2% – “rather not”).
Conclusions

In the analyzed case, the efficiency of information selection (taking into account the criterion of truthfulness, reliability and credibility) and the issue of organizing information due to different criteria has been considered the ability which is necessary to achieve the desired information maturity. Formation of information skills is an active process requiring the involvement of many complex cognitive activities. The process of searching for valuable information must include critical analysis of content and orderly reflection on the construction of knowledge. Time and the area of the search that the student should learn to narrow down by choosing reliable and useful information appears to be of significant value here.

As a result of the analysis of the levels of students’ information literacy in the scope of the discussed aspect of information literacy, it turns out that the skills in organizing and selecting information were formed in the surveyed youth at the average level: 37.7%. The students displaying the highest efficiency in the analyzed category constitute 34.3%, and less than one-third of all respondents (27.9%) admit to the lowest self-esteem in this field.

Figure 1.
Distribution of the level of the information literacy in the scope of “arrangement and selection of information” in the student’s self-assessment.
Source: the author’s own research material.
The respondents who obtained the highest score in the course of the study are characterized by very well developed skills in organizing and selecting information. It can be assumed that in the course of searching for information they perform activities involving categorization, grouping, selection, association, classification, and organization of the collected information. Due to the well-developed sphere of information behaviours related to the selection and arrangement of information, they are able to navigate efficiently within the current flood of information. They are aware that obtaining the information itself does not change much, and only the selection, comparison, interpretation and combining of found information, or their confrontation with people experienced in a given matter, can result in the creation of valuable knowledge. They realize that the more information accompanies people every day, the more important are the criteria for selecting information, allowing them to choose information that is relevant to them in a given case.

However, as confirmed by the research, more and more often we can observe a situation in which we use unverified information, obtained in a highly cursory manner. Such behaviour — on the one hand — can be explained by the lack of time, but on the other hand — the lack of the need for cognitive exploration of a given topic. This is a way to create a situation in which individuals have information that is incorrect or even suffers from the deficiency of information and knowledge. The surveyed students achieving the low level of information selection skills in their self-assessment characterized by unreflective and uncritical acquisition and reproduction of information. This can lead to many negative consequences: from the lack of skills in deeper analysis and selection of information to functional illiteracy. Although they efficiently obtain various types of information, they cannot make proper use of them, which is manifested by the tendency to process them shallowly. It is particularly dangerous in contact with the most popular source of information today — the Internet.

In the reports from research and psychological analyzes, we may find a conclusion that the Internet may have a particularly negative impact on people with cognitive immaturity and a low degree of criticism of thinking. Insufficient level of instruments of information selection and critical reflection may lead to inappropriate evaluation of information, narrowing of interests and decline in cognitive skills (Morbitzer, 2004). As the authors of “Młodzi i Media” (Eng. “The Young People and the Media”) report point out, “the key problem of using the Internet for learning is the competence based on
accurate assessment of the quality of the information obtained. While traditional publications are somehow “approved” due to easily identified publisher who – at least in theory – is a guarantee of quality (by publishing texts that have been positively reviewed or at least passed through the editorial proofreading process), the Internet publications are ephemeral, anonymous or devoid of any editing (Filiciak, Danielewicz, Halawa, Mazurek & Nowotny, 2010, p. 115).

The issue of trust in the content published on the web is visible in the analysis of Wenta, who defines trust in the Internet in terms of the “phenomenon of personality in the information society” (Wenta, 2013, p. 435). Analyzing it in the educational aspect, the author notes that in the current era of liquid modernity, Internet users are not people who are looking for and want knowledge, but people oriented towards communication and interpersonal self-creation. Such an attitude, in the opinion of the researcher, entails a high level of self-awareness, which manifests itself in the expression of trust in the network – this stems from a set of features directly related to communication (Wenta, 2013).

Anxiety about the young generation’s information literacy was also a stimulus for research conducted by a team of scientists from the British Library in London. They made a universal opinion on the unique talents and abilities of the Google generation in the field of handling modern information and communication technologies their point of reference (Spitzer, 2013). As a result of these analyses, it turned out that when searching for information, young people have problems with assessing the quality of knowledge sources, they do not distinguish reliable data (e.g. scientific publications) from less reliable information (e.g. views expressed by someone else). Their research has shown that much of the impact of ICT on young people has been overstated. Although young people display the ease and knowledge of new media, those are often competencies apparent powers. People from the generation of digital natives rely heavily on search engines to look through rather than read and do not have critical and analytical skills necessary to evaluate information found on the Internet (Spitzer, 2013).

Therefore, it is not the excess of information that is a problem, but the way in which we seek it, value it and assimilate it. Every day, we receive enormous amounts of informational content, often of little value, incomplete or false. Gaps in the scope of the information selection skills entail the risk of the low level of being well-informed and aware of the world around us. In the process
of information education, it is important to develop the skills in selection of valuable information, which then serves to build one’s own knowledge structures. This postulate forms a part of a constructivist education strategy which aim “should become an action aimed at supporting the student in shaping an autonomous attitude towards learning. In this perspective, the learner acquires sequentially the ability to analytically perceive content and learning goals, as well as reflect on ways to optimize the learning process” (Maciąg, 2018, p. 30).

Furthermore, it is also essential to build an individual axiological construct, which is a kind of signpost designating the proper direction of navigating the “information sea”. Developing their own information filtering system based on axiology will allow the Internet user to choose what is valuable in the digital info-sphere, separating the wheat from the metaphorical informative chaff. Emphasizing the importance of developing information literacy, one can refer to the opinion of Batorowska, according to whom it should be placed in the process of:

preparation for rational functioning in the information society based on information education and upbringing of individuals and striving to develop their information culture. Information literacy contributes to stimulating people’s social activity, understanding the idea of lifelong learning, learning to know, fighting against information exclusion, information overload, information smog, etc. (Batorowska, 2013, p. 62)

References


How not to drown in the flood of information? Selected aspects of the information culture of adolescents

Summary: The following article is a research report, the object of which was to determine the level of one of the manifestations of information literacy. It presents the characteristics of the ability to organize and select information. Furthermore, the author proves that the ability to correctly select information is a prerequisite for the proper functioning in the digital information world. The analysis draws attention to one of the main aspects of the information culture of a human being who has the ability to cope with the flood of information.

Keywords: flood of information, information overload, information culture, information literacy, selection of information
Jak nie utonąć w informacyjnym zalewie? Wybrane aspekty kultury informacyjnej młodzieży

Streszczenie: Artykuł opisuje rezultat badań, których przedmiotem uczyniono określenie poziomu jednego z przejawów kompetencji informacyjnych. Przedstawia charakterystykę umiejętności porządkowania i wyboru informacji. Autorka udowadnia, że umiejętność właściwej selekcji informacji jest warunkiem poprawnego funkcjonowania w świecie informacji cyfrowych. Dokonana analiza zwraca uwagę na jeden z aspektów kultury informacyjnej człowieka, posiadającego umiejętności radzenia sobie z informacyjnym zalewem.

Słowa kluczowe: zalew informacyjny, kultura informacyjna, kompetencje informacyjne, selekcja informacji