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Evaluating information on the internet

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Contents

Internet search engines

Commonly used search engines offer search results with links to websites, the content of which is of varying quality, because these search engines look de facto across the whole internet. Therefore, it may happen that among the first links to websites or documents there are those of low quality, and also websites whose owners have paid for making their website appear high in the rankings.

Search engines for expert information, on the contrary, search only through research articles, expert books, websites of research institutions, etc. Therefore, in this case you can expect to find information of high quality. That is the reason why we recommend using these search engines when you are looking for expert information.

The URL

The URL itself can already reveal some information about the publisher (owner) of the website and this may indicate what the quality of its content will be. I am referring here to the top-level domain in the URL.

This helps you identify which country the computer network of the website's publisher is located in. However, these national domains (.cz, .sk, .pl etc.) do not guarantee a high quality of information.

You can consider only websites with one of the following top-level domains trustworthy:

- **.gov** – only government institutions in the USA,

- **.edu** – educational institutions in the USA,

- **.ac.uk, ac.in . . .** – educational institutions in the British Commonwealth contain the abbreviation .ac in front of the national domain.

It can be assumed that the aim of publishers of government and educational websites is education, and moreover, only authorised people can publish information on such websites.

In contrast, domains such as **.com**, **.org** or national domains should always be checked for other indications that can reveal the interests of the website's creator and as a result determine the level of expertise of its content (see below).

An overview of top-level domains is available at http://www.iana.org/domains/root/db/

Publisher of a website

An important clue to whether the information is trustworthy is the publisher, or rather the owner of the website. Details about the owner can usually be found in the section called *About us*, *Background* etc., if they are not already shown on the introductory page. If you doubt the quality of the information found, verify from other sources whether the information is correct.

In this example, the website reports on leukaemia and its subpage *About WebMD* states that the mission of the portal is to inform the public about various issues related to medicine and the healthcare system. Its primary aim is therefore not to provide expert information.

When we compare this website with the preceding example, this one also deals with leukaemia, but the details in the *About Us* section are more transparent. You can find there information about the financing of the centre, related legislation etc. It follows from both these details and the .gov domain that the National Cancer Institute (NCI) is an institution subject to the US authorities. Therefore, it can be assumed that NCI is subject to various checks regarding whether American legislation is observed and in this respect NCI can be considered to be a trustworthy publisher.

Always ask yourself the following questions: Who is the publisher/owner of the website? What is their aim? If you find that the owner of the website is not a research institution and its target group is the lay public, you cannot reasonably expect to find expert information there. If need be, pay attention to other attributes of the website you found.

- https://www.webmd.com/cancer/lymphoma/acute-myeloid-leukemia-treat#1

- https://blood-cancer.com/treatment/all-leukemia/

- https://www.cancer.gov/types/leukemia/patient/adult-aml-treatment-pdq

The author

Another indicator of a source's credibility is information about the author, who guarantees the quality of the work with his or her name. In the case of a website you should ask yourself the following questions:

- **Is the name of the author provided?**

- **Is the author an expert in the respective field?**

- **If the author's name is not provided, is a trustworthy institution responsible for the quality of the information?**

High-quality information resources are provided along with the author's name (either an individual or an institution). In academic resources information about the author's home institution is given (university, research centre) together with contact details at their workplace (e.g. the address of the institution instead of gmail.com or seznam.cz).

In the case of governmental websites, news websites, etc., the author is not always specified and therefore you can infer the credibility of the website from its publisher. On the whole, you should always be able to verify whether the text was really written by a qualified person who can easily be contacted should questions arise.

If we continue with the preceding example of the WebMD website, we learn that the author's name is found neither at the beginning nor at the end of the contribution. Merely at the end is the reader informed that the contribution was reviewed, or rather checked, by a medical expert. This of course speaks in favour of the article, but on the other hand, the authorship should be clear. In this respect, the requirement of transparency is fulfilled only partially.

In the case of the contribution on the website of the National Cancer Institute (NCI), the author is not given, which is of course problematic. Similarly to the other example, even here transparency is partly fulfilled because as we stated earlier, the domain .gov means the website of an institution under the supervision of the US authorities. Such websites commonly do not provide the name of the author because the text is considered to be the collective work of the employees. Moreover, in both texts it is obvious that the authors of the texts were aware of the need to prepare their contributions in two versions, i.e. one for the lay public and the other one for specialists. That means that everybody has access to full information.

Characteristics of expert information on the internet

In the case of websites with expert information, it is vital that their authors follow basic rules of publication and citation ethics. Therefore, determine carefully whether the text complies with the following requirements:

The text is written in an academic style

Determine whether the text is really written in an academic style and if the phrasing used therein is common for texts intended for experts and not for the lay public.

If we compare the text from WebMD with the text from the NCI website, you can see that although both texts are intended for the lay public, the text from WebMD inclines towards spoken language, for example, it addresses the reader. The NCI text on the other hand is strictly factual like academic texts.

The author bases his or her thoughts and conclusions on concrete, verifiable data and cites information resources properly

In an academic text it is vital to document the sources of information that you have taken from elsewhere. We usually do so by means of citations, which refer to bibliographic references containing basic information about the respective information resource, so that others can find these sources and verify the information. You can also formulate sentences in the text in such a way that it is clear what source the details were taken from. Academic texts also include a bibliography. Authors cite properly within the text, i.e. they place quotations within quotation marks and use a different font face, such as italics, for paraphrases. Paraphrases, i.e. an original thought summarized in your own words, must also be supplied with a link (citation) to the bibliographic reference in the bibliography. You should also note what type of resources are used (scientific journals, monographs, popular science literature), because the quality of the literature used can indicate the quality of the text. If the author refers to related websites ("related links", "additional links", etc.), always verify what type of resource it is.

The text of the contribution on WebMD does not contain links to resources. Moreover, the section Sources at the end does not include the usual bibliographic references according to which the resources can be identified unambiguously, rather it features only the names of professional institutions and some other names where is not clear whether these are books, journal articles or handbooks. One cannot simply and unambiguously identify information sources.

The patients' version of the contribution on NCI website also contains neither citations in the text nor bibliographic references to show the sources which the authors of the text have drawn on. On the other hand, this version provides a direct link to the version for professionals where both citations in the text and a bibliography are included. In addition, the bibliography contains direct links to the records of cited publications in the database MEDLINE PubMed. In this respect, it is understandable that the patients' version does not contain links to the resources when everyone has the possibility to verify everything in the professional version.

Is it up to date?

The date when a piece of information was published or updated tells us whether the document can contribute in terms of representing the latest findings. Because information on the internet becomes outdated quickly, a date on websites is indispensable. In addition, this detail helps us find out how the author/publisher cares for whether the published information is up to date. Therefore, you should always look at how current the information displayed is (this is usually introduced by phrases such as "last updated. . .", "posted. . .", "published. . .", etc., and can be found in the header/ footer of the website, see the example).

The contribution on WebMD does not contain any information about when the text was published, rather it shows only the date of the review at the end. The age of the contribution cannot be determined and therefore it can only be guessed.

Which internet search engine should I use?

You can already improve the quality of information you will work with simply by choosing the right search engine. Common search engines (Google, Seznam.cz, Yahoo, etc.) offer in the search results links to websites with content of varying quality. The number of results may be so high that finding quality information can be difficult. Google Scholar (http://scholar.google.com/) on the other hand searches through research articles, academic books and websites of research institutions. This gives you a higher certainty of finding websites with high-quality information.

process.

As serious as we are about credibility, we also know that at times, health information can and should be engaging, exciting, and entertaining.

We pride ourselves in knowing our audience's needs and delivering the most appropriate experience. We know that there is a difference between using a health site for health "performance" issues (e.g., flat abs) vs. health research needs (e.g., "What is type 2 diabetes?") vs. community support (e.g., "Does anyone else feel like me?") vs. e-commerce. Our mission is to fulfill all these needs in the most appropriate ways possible.

We are committed to improving our site. We will continue to publish even more content, communities, and services to help make your life better, to help you find your way when faced with healthcare decisions, and to help you feel better about your health and that of your family.

Last updated on April 29, 2014

Why not Wikipedia?

It is no secret that Wikipedia is a favourite information resource among students, and students often ask themselves why their teachers forbid using such a source. The answer is simple: untrustworthiness.

Here we will list some very essential reasons why Wikipedia cannot be used as a trustworthy source of information.

Information does not have to be objective

That is because anyone who knows how to edit articles in Wikipedia at least a bit, may contribute to this encyclopaedia. Therefore, there is a real risk that the information published there will be skewed. As an exemplary case we may consider the 2010 oil spill in the Gulf of Mexico by the infamous oil company British Petroleum (BP). In 2013, it was found that this company had modified almost 44% of information about themselves on Wikipedia, including information connected with the oil spill.

In 2013, Dr. DiStaso from Pennsylvania State University published the results of his study of approximately 1,500 respondents from marketing and advertising companies. 74% of them stated that their company or their clients wrote articles about them on Wikipedia.

Numerous factual mistakes

Dr. DiStaso also discovered during his research that the respondents found in 59–60% of cases one or more factual mistakes in the Wikipedia article about their companies or their clients.

Not all information can be verified

Especially Wikipedia versions other than the English-language one lack links to sources for the information mentioned therein and thus readers do not have any possibility to verify the correctness of that information.

Information is not updated

Another fundamental problem of Wikipedia is that information published there may not be up to date. Nevertheless, for example the English version of Wikipedia backs its information up with sources much more thoroughly when compared to other language versions. With regard to the amount of information stored on Wikipedia and the information boom, it is impossible to keep everything up to date.

For example, this passage on Wikipedia about cancer lists smoking as one of its causes, this piece of information is supported by research articles published more than ten years ago. Over this time the statistical data on deaths may have changed due to newer methods of cancer treatment, more effective anti-smoking campaigns, or even due to tobacco industry efforts to reduce the harmful effects of cigarettes.

https://en.wikipedia.org/wiki/Cancer

Chemicals

Further information: Alcohol and cancer and Smoking and cancer

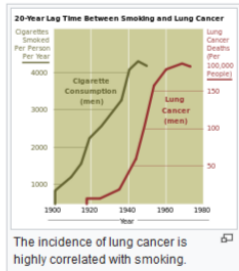Exposure to particular substances have been linked to specific types of cancer. These substances are called *carcinogens*.

Tobacco smoke, for example, causes 90% of lung cancer.[34] It also causes cancer in the larynx, head, neck, stomach, bladder, kidney, esophagus and pancreas.[35] Tobacco smoke contains over fifty known carcinogens, including nitrosamines and polycyclic aromatic hydrocarbons.[36]

Tobacco is responsible for about one in five cancer deaths worldwide[36] and about one in three in the developed world.[37] Lung cancer death rates in the United States have mirrored smoking patterns, with increases in smoking followed by dramatic increases in lung cancer death rates and, more recently, decreases in smoking rates since the 1950s followed by decreases in lung cancer death rates in men since 1990.[38][39]

In Western Europe, 10% of cancers in males and 3% of cancers in females are attributed to alcohol exposure, especially liver and digestive tract cancers.[40] Cancer from work-related substance exposures may cause between 2 and 20% of cases,[41] causing at least 200,000 deaths.[42] Cancers such as lung cancer and mesothelioma can come from inhaling tobacco smoke or asbestos fibers, or leukemia from exposure to benzene.[42]

The incidence of lung cancer is highly correlated with smoking.

https://en.wikipedia.org/wiki/Cancer

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As follows from the above-mentioned facts, Wikipedia can justly be criticized as a suitable source of expert information. Wikipedia is, without doubt, a very useful tool for obtaining a basic orientation in a specific field, but readers should always adopt a critical approach and assess the relevancy of information from this encyclopaedia in the context of other information sources.

Bottom line

Anyone can publish information on the internet and therefore you should always assess the quality of a website. When assessing a website, note especially the following:

- Can you identify the author/publisher of the website safely and determine whether they are experts in their field?

- Is the website up-to-date or is it regularly brought up to date?

- In the event that you are searching for expert information, is the text written in a professional style and are the basic rules of citation complied with?

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