

Digital education and responsible behaviour: the gold standards for improving quality of medical and health-related information on the Internet

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CARME HERNÁNDEZ-RABANAL

Ph.D. candidate in Information and Documentation in the Knowledge Society
Universitat de Barcelona
carme.hernandez@ub.edu

Abstract

Objectives: The aim of this article is to present the state of the art in the quality of health information on the Internet; to identify who the leading actors are and which the situations of the new information and communication scenario where technologies, users and information converge are; as well as pointing out the ways which contribute to the improvement of both the quality of health and medical online information and users' information literacy skills.

Methods: Literature review and analysis of the current context of information and communication regarding the quality of health and medical information on the Internet.

Results: Immersed in the so-called network society, we have identified the protagonists of the new information and communication scenario, the matters they share, and the recurrent problem resulting from the introduction of new technologies within their relationships. Health is an issue of general interest, and health and medical information is one of the most requested topics online. New technologies have led users to be more proactive in their personal health care, and social web has moved into a leadership position in the network. Users with different profiles share affinities and values in a place where the quality of information becomes the cornerstone of the framework composed by provider–user–information. The gold-standard treatments for improving the quality of health and medical information on the Internet, as well as users' literacy skills, are the responsible behaviour of all actors and the digital education.

1 Introduction

Nowadays, Internet is the most used means for searching and finding information on any field of knowledge. Disciplines such as medicine and health care are not an exception. Information about these topics grows exponentially on the Internet, and there are more and more users that access to information available online to satisfy their information needs (Iñesta-García, 2012). Nevertheless, there is a lot of health and medical information flowing through the net that is of dubious quality.

Web 2.0 has positioned itself as a leading platform for sharing affinities and values. Lay users have become proactive in their own health care and have taken the initiative to become not only users but also providers of health-related information.

Despite the undoubted advantages offered by new technologies, the overabundance of information sources and the ease of access on the net, one observes that users' information literacy skills are limited, and that the criteria they use to distinguish reliable from unreliable information are not solid enough. In general, users do not know what tools and resources can assist them in managing information properly.

Given the sensitive nature and the general interest of health matters, two paths appear as being the best way to improve the quality of online health and medical information: an ethical and responsible behaviour of all the agents, and the digital education of users.

The aim of this article is to present an overview on the topic of the quality of online health and medical information and to explore the ways that ensure its improvement. Based on a literature review and on the analysis of the most outstanding aspects of the network society, we have reflected on the changes that new information technologies have introduced in the manner we organize ourselves and we relate to each other, and on the role social web currently plays in our research strategies when seeking for health and medical information on the Internet.

We will start describing the current network society, we will then look at the inputs of the Internet and the Web in our daily lives, we will look into health and medical websites, we will observe users' behaviour, we will focus our attention on the rise of web 2.0, on the concept of quality as well, and we will finally present the conclusions that in our opinion help improve both the quality of online health information and user's literacy skills.

2 Societies and networks

The concept Information Society¹ designates the community where information and communication technologies (ICTs) play an important role in its activities. This society dates back to the second half of the 20th century. Although societies exist from the origin of humankind, and information has been present in many of its actions, the information and knowledge society differs from all other kind of societies on the fact that technological conditions (computing, telecommunications and microelectronics), lead individuals to relate with information in a different way from former times.

The ICTs have revolutionized the ability to access, process, store and distribute information. They have been introduced into all human activities and this has meant that the social structure, i.e., the way that society organizes its activities in different spatial and temporal contexts, has

changed. Technological innovations have transformed not only the way we organize ourselves as individuals but also as social beings.

Over the last years, in the communication field, we have moved from a unilateral communication to a global intercommunication. In 2006, Gillmor pointed out that news that was made by mass media experts for the mass are now made by the people for the people (Gillmor, 2006; Benavente et al., 2010). Still in 2006, Castells pointed out that the emergence of the Internet enhances the final end of "mass communication". The hegemony of mass media, in their role of emitters of information to passive receivers, is broken thanks to the fact that individuals can now choose the media they want and how they want to use them (Castells, 2006). With the irruption of the Internet and all the new media appeared in the 90s, the concept of mass gives way to the concept of user. The latter, from a participatory profile, gives his opinion, which should be taken into account while designing new media (Benavente et al., 2010).

Nowadays, the network is the new social and economic paradigm. We belong to this network, called Network Society by Manuel Castells, since the last decades of the twentieth century. It stands for a "social structure resulting from the interaction between social organization, social change and technological paradigm constituted around digital information and communication technologies" (Castells, 2006). Thus, as noted above, since the appearance of the Internet, a new organizational structure has been introduced into all aspects of our activities, and has been spread to all levels of social organization. Individuals and organizations interact at any time and from anywhere through a code, i.e., a network protocol, hence the interaction between technology and society leads us to conclude that the concept network society is more appropriate than information society.

Castells (2006) says that networks "are not specific to 21st century societies or to human organization. Networks constitute the fundamental pattern of life, of all kinds of life." Freire (2008) notes that networks are part of our biological and cultural nature. The fact of being social beings has made us create networks since the beginning of our evolution, though the networks structure has changed as our species has evolved, and as societies have developed.

What distinguishes the current network society from other societies is, essentially, the available technology. Internet, along with the application that connects information sources by means of interactive computers, the World Wide Web (WWW), has allowed information to flow at global and universal scale.² The high capacity of new technologies to connect and communicate has made possible an increase of the processing capacity. The result of combining information and processing capacity is what leads Castells to talk about a new technological paradigm, the informationalism, which constitutes the basis of the current network society.

In the previous society, the so-called Information and Knowledge Society, the value was in the production of knowledge, while the value in the network society is in the ability of managing knowledge, i.e., the ability of searching, identifying, processing relevant information and transforming it into knowledge.

3 Internet and the web

Internet, the global system of interconnected computer networks, is not only a technology but also a means of communication, interaction and an instrument for social organization (Castells, 2001). Thanks to the Internet and to the applications at the service of users, concepts such as communication, shared knowledge, collaboration, cooperation or reciprocity become intrinsic characteristics of the network society.

On the net communities are created where people set relationships and networks beyond physical boundaries. Individuals with personal interests join, in a volunteer way, virtual communities where they share similarities with other members. Internet is therefore a reflection of social organization, since users organize themselves, communicate, share information and behave flexibly.

The web (WWW) is one of the most popular applications of the Internet. It introduces a concept that makes it different from the rest: it enables the universal reading. The information that is published on the net is accessible from anywhere at any time. The web is an endless information source, where users seek for and find information on any topic. Among its main advantages are speed of access, immediacy of results and the unquantifiable volume of available information. However, one of the main disadvantages is that it provides multiple versions of the same reality. Reliable information coexists with unreliable information, and up to date information shares space with out-dated information. In sum, the web is a huge storehouse where people store information about products and services, but also a place where each individual applies the editing criteria he personally believes appropriate.

Talking about the web leads us to make a distinction between two typologies, the 1.0 and the 2.0. While web 1.0 has been considered more related to the use, web 2.0 has been linked to participation. Web 1.0 has been defined as static, in the sense that a user accesses to it just to get information. The provider publishes information that the user only consults. Web 2.0, also called social web, unlike the web 1.0, entails organization and information flows to depend on the behaviour of people accessing to it. Users are in charge of the creation and maintenance of content. Web 2.0 makes users become receivers and providers of content. In this scenario the two main leading actors of information, providers and users, consume and spread, indistinctly, information and knowledge.

The principles that Web 2.0 promotes are: sharing, reusing, and taking advantage of the collective intelligence. One of the features of web 2.0 is that it is constantly changing. Fumero (2011) pointed out "the Web is evolving fast whilst transforming the three basic dimensions of our social nature: information, relationship and communication". He said that the 2.0 phenomenon became popular from 2002-2004, and since then we inform and browse the web differently. Social networks have become the new place where we, users, mix with others: we edit, publish and share all types of contents in a social way.

Internet is right now the most used means to search and find information on any field of knowledge. Medical and healthcare fields are not an exception. A phone survey conducted in the United States by the Pew Internet & American Life Research Project between 9th August and 13th September 2010 (Fox, 2011a) revealed that 8 out of 10 users of Internet users look for online health information. According to the results, this is the third most popular online activity, preceded by email and using a search engine. The percentage presented by the survey is the same as the one obtained in 2002 (Fox, 2003). The difference between these two surveys is in who has access to the Internet. Internet use has gone from being an exceptional activity to be an ordinary one, hence when an individual has access to the net, he immediately goes into the dynamics of doing online activities, such as searching for health information.

The above-mentioned survey of 2010 finds that "not only are some demographic groups more likely than others to have internet access, but these same groups are generally more likely to seek health information once online" (Fox, 2011a). Thus, caregivers, women, adults between 18 and 49 years old, and those college-educated and with higher incomes are "more likely than other demographic groups to gather health information online". Hence it follows that having access to the Internet means having access to more information, which consequently stimulates and promotes the search for medical and health information online. But the most interesting point of the survey is that it shows the health-related aspects that are of more interest to Internet users. Their first three interests consist in looking online for information about a specific disease or medical problem, for a certain medical treatment or procedure, and for information about doctors or other health professionals.

Another study conducted by the Pew Research Center (Fox, 2011b) indicates that the Internet is, after the doctor, the second source of information to which individuals appeal when looking for medical or health information. And this is a general trend, tested over the years (Fox, 2006, 2008).

4 Medical and health websites

More and more people consult doctors, not only to ask for medical advice, but also to obtain information about a disease or a treatment. They also use the net to find a fast response to their questions. The medical field is one of the areas where new technologies have transformed the

way that users relate to these.

Thousands of websites are on the net trying to satisfy the information needs of individuals with regards to medical and health issues. The ease of access and of content publishing on the Internet reveals that much of the medical and health information that can be found on the Internet is of dubious quality (Mayer, 2001). It is important to remember that health-related information is highly sensitive because of the implications it can have on individuals (Stvilia et al., 2009). This means that both information providers and users must be highly careful and accurate when providing or consuming information.

Having more access to information sources (in our case, websites) has not meant that the number of tools and resources to manage this information have increased, on the contrary, the greater the volume of information, the more obvious how much limited the users' resources and skills to search, select and use such information are (Conesa-Fuentes, 2010, p. 89). Information editors have taken advantage of publishing information online, but have overlooked, in many cases, and even omitted, the application of quality criteria. This has meant that much of the published information that meets quality criteria passes unnoticed to the user.

In the scientific field, all research articles undergo a rigorous peer-review process, whose aim is to ensure that high quality and original scientific studies are published. Information displayed on printed materials such as books, leaflets or similar publications, follow as well protocols that grant them reliability.

When moving from printed media to electronic media, we realize that in the latter it is not possible to apply the same quality control protocols used for the first. As it occurs in many fields of knowledge, in the medical and healthcare arena, new technologies have led to the immediate publication of content and have also promoted that the user who previously was only information consumer has become also information producer and provider. This situation has caused, on the one hand, that quality of information has diminished to a lower level, and, on the other hand, the user feels disoriented when trying to identify reliable information.³

5 Users

Users have information needs and the majority of them go to Internet to satisfy them. The answer they get does not often meet their needs, firstly because they do not know how to search for information, and secondly they do not know either how to distinguish quality from non-quality information. From a health professional one expects he should provide reliable, trustworthy information. From medical and health information online one also expects reliability and confidence. Unfortunately, this is not the result obtained from many medical and health websites available on the Internet.

Internet users are often blamed for not being critical enough with the information they access. Their guiltiness, however, is relative, because they have not been technologically educated to get tools, resources and skills to be so. We pointed out earlier that the web is a great storehouse where people store information about products and services, but we should now highlight the fact that this store lacks of a consistent logistics, it lacks of an editorial methodology and standardized protocols of use that facilitates users their task of identifying quality information.

The user feels helpless in front of an overwhelming avalanche of websites requesting his attention. When someone searches for online medical or health information, he often chooses a website that he has not ever heard of, nor has he any reference of it. He does not know either if that website will meet his initial information need or the information gap will be bigger than it was before running the search. In short, the user's information needs do not go together with appropriate tools that help him distinguish quality from non-quality websites.

Mayer (2006) noted that there are users who pay attention to design, others look at the authorship of the website when choosing one website or a different one. The variety of criteria is so big, that it has not been found yet any stable and universal indicator that helps users identify quality, reliable, effective, safe information. Eysenbach and Köhler (2002) pointed out that most individuals use the most well-known search engines when looking for online health information, and select only the resources that appear at the top of the results. It follows that the critical analysis and the thoughtful assessment of the content become clearly secondary.

In 2000, the e-health Code of Ethics stated that "health information includes information for staying well, preventing and managing disease, and making other decisions related to health and health care". It added: "Anyone who uses the Internet for health-related reasons has a right to expect that organisations and individuals who provide health information, products or services online will uphold the [...] guiding principles". These guiding principles are 8 and they deal with issues such as candor, honesty, quality, informed consent, privacy, professionalism in online health care, responsible partnering and accountability.

The coexistence of reliable and unreliable information on the net, along with the concern of authorities and other sectors about how to increase the reliability of online information, have led various bodies to develop initiatives with the common goal of contributing to the improvement of the online medical and health information quality. Among the most important initiatives that have appeared over the last 15 years there are codes of conduct, quality labels and certification processes for websites.⁴

A code of conduct set out the ethical principles and standards of conduct that the information provider is committed to respect while editing and maintaining his website. Ethical principles that some providers apply to their websites are often recognized by the scientific community, which gives a bonus of credibility to websites.

The certification process consists in verifying that websites comply with a minimum of ethical principles. In case they respect all principles, the accreditation body provides them with a virtual seal that confers them a guarantee of quality. The main goal of this process is to contribute to the raise of transparency of online information and, at the same time, to provide users with an effective tool that help them identify quality information. Several studies have stressed that codes of conduct and certification processes run by independent bodies are useful indicators that help distinguish between quality and non-quality websites (Mayer, 2006).

Bodies that are in charge of assessing websites according to ethical principles take into account aspects such as authorship, the mission of the site, confidentiality, the validity of information, references, funding or advertising. The will of these agencies, that have their own code of conduct, is to guide websites' editors in the process of publishing information online and give them support during the process of content production and publication. The User is the one who obtains a higher benefit from this, as he is the one who finally consumes the information.

The web's certification process is a quality control tool. It aims to provide some guarantee to users when accessing websites. However, this mechanism does not guarantee the reliability of the content. The certification bodies that assess websites check that the site complies with the ethical principles that have to do with publishing aspects, but they do not assess its content.

6 The Web 2.0, the place where providers, information and users interact

So far we have observed that online information is heterogeneous, and so is the will of each of its providers. We have identified who the leading agents of this new communication scenario are, what matter they share, and the recurring problem resulting from the introduction of new technologies within their relationships. As a reminder, the leading actors of information are two: providers and users (who), the matter that connects them is the medical and health information (what), and the problem they face is the rift between the way editors produce online information and the way users consume it (how).

We have a scenario where, on the one hand, online information providers do not follow uniform protocols of edition and transparency, and on the other hand, users do not have tools that help them identify information of quality during their research online. This situation shows the imbalance

in the ways in which providers and users face the concept of quality. Hence, it is necessary to find or unify standards, agreed criteria that both help users identify reliable and quality medical and health information and at the same time could endow the concept of quality of online information with meaning.

Wilson (1983) pointed out that when the individual cannot assess the quality of the information in an independent way, he trusts other people's knowledge or experience as if it was a second-hand knowledge. Wilson made the difference between the administrative authority and the cognitive authority. The first one is a hierarchical authority that comes from a higher instance and must be abided. In contrast, the cognitive authority comes from closer authorities to the individual, such as friends, family or colleagues, and it differs from the administrative on the fact that it is endowed with more credibility.

The concept of cognitive authority can currently be recovered, as the increasing use of the Web 2.0 and the high participation of users in collaborative platforms confirm the widespread interest of users to find similar experiences in similar individuals. Collaborating in these platforms has become a new source of information where individuals with similar interests or problems ask, answer and give or get feedback on a knowledge that had been meant for expert professionals until recently.

This new dynamics shows that the knowledge that so far was hold by a single instance, now it has been vulgarized. Although vulgarisation allows lay users to afford that knowledge, it also fosters that knowledge be distorted or easily misinterpreted, which can have unpredictable effects on the user.

Eysenbach (2008) talks about the term medicine 2.0. This is a medical contents channelled through the Web 2.0 that, in a more understandable language, contributes to spread information and educate users. Spread means to propagate knowledge, to put something at the disposal of a general public. The web 2.0 plays the role of disseminator, of socializer. Adams (2010b) talks about "collective knowledge production and exchange of personal experiences". It is clear that the interaction between different actors makes knowledge spread, but the difficulty is how to get fair knowledge.

Some studies have shown their interest in the use and influence of web 2.0. All of them provide interesting elements that deserve attention and monitoring. Yi et al. (2012) conducted a study whose aim was to see the influence of culture on the manner that users search for high quality health information. Their findings indicate that culture influences on users' behaviour when looking for such information. These researchers also refer to the concept of cognitive authority mentioned by Wilson. They point out that users need to look for second-hand information coming from support groups or blogs, because cognitive authority helps them identify quality health information. Aspects such as experience or similarity to their own personal cases make them trust these sources.

But, regardless of cultural influences, the boom of the Web 2.0 is due to the users necessity to find support from similar users. The Web 2.0 is a clear sign that more and more priority is given to users instead of the providers or the health care body, whose leading role is more obvious in the static web (web 1.0). Professionals and healthcare institutions do no longer control information and knowledge flows. Users are both knowledge providers and consumers. They are gradually leaving their passive role, to adopt a more active one.

González-Pacanowski and Medina-Aguerrebera (2011) talk about the new role acquired by blogs, the meeting place for patients and physicians. In those blogs, patients play an active role and become full health actors. Their active attitude contributes to a significant change in their communicative relationship with health professionals. Both of them learn and share, which has a positive effect on health services offered by hospitals.

Participatory medicine, a model of health care where the patient (e-patient) is actively involved in medical decisions, is acquiring an increasing prominence. Many initiatives encourage this practice in our days. Gallant et al. (2011) point out that "the convergence of interactive media formats with web-based communication tools will likely enhance e-patient education and promote patient involvement in ways that alter traditional health care interactions, and may lead to enhanced levels of participatory medicine".

If technology is going in the direction of promoting collaborative platforms, it is also in that direction that we should find strategies and tools for improving the quality of online information. The provider is not the only character on which efforts should be focused, but also, and mainly, on the user. The fact that users take the initiative to create and maintain their own health-related websites, both 1.0 and 2.0, indicates that they are a key figure to be taken into account.

Users are gradually requesting more information and caring more about health issues. Little by little they are changing their behaviour. They are moving from being mere spectators, receivers, to taking a leading role in their own health. Without ignoring the figure of the medical professional, who guides and supports their search for information, users want to be more informed, more independent, hence they participate more actively in collaborative platforms.

Adams (2010) outlines that medical institutions should play a key role in promoting health information and educating users. These institutions should include collaborative platforms in their socialization strategies to promote health education, taking into account that the physician should not lose his prominent role since he is the only one who can give scientific advice to the patient. It is important that everyone keeps their own responsibilities. Lupiáñez-Villanueva (2009) goes further and says that as the Internet is a reflection of social organization, governments are responsible for regulating many of the aspects related to social organization, especially those related to the health system.

An important point that should be considered is that if users assume the role of information providers through collaborative platforms, they may feel more involved than anyone in the need of improving the quality of online information. In their role of editors, users become responsible for pieces of information from which one requires transparency, clarity, reliability and trust. Quality has become the key strategic factor for developing any activity, as it brings differential value to products and services.

If we have achieved that, in general terms, users developed skills to distinguish quality information in printed media (Eysenbach, Köhler, 2002; Conesa, 2010), in the digital age it is necessary to find the way to adapt and apply these skills to electronic media. Therefore, we should identify what the best path to reach this goal is.

7 Quality

We noted earlier that there is a mismatch between how providers edit information and how users select quality information. Such imbalance implies that providers do not follow standardized edition protocols, and users are not able to identify reliable information amongst the huge volume of information available online.

As it has been widely discussed throughout the last few years, the problem that arises in the network is not to find the information searched for, but to determine the quality of this information, which in practice consists in determining both the credibility of who publishes the information and the correctness of published information. Credibility has to do with the quality of being believed. Fogg (2003) stated that "credibility perception is based on two key dimensions: trustworthiness and expertise. [...] The trustworthiness dimension of credibility captures the perceived goodness or morality of the source. [...] Expertise is the perceived knowledge, skill and experience of the source".

Users assess the credibility of online information in a different way as health professionals do. The indicators they both use are also different (Stanford et al., 2002). A study conducted by Eysenbach and Köhler (2002) indicated that Internet users mainly use two indicators to assess the credibility of a website: the source and the web design. This shows us, once again, the disparity of criteria for identifying online quality information.

One of the reasons of the lack of a criteria consensus lies in the very concept of quality. Quality is an abstract concept that can be approached

from different angles. The quality of information is not perceived or interpreted in the same way depending on who the consumer is: health professionals, patients or users. A health professional, a patient, a sick person or a healthy individual do not use the same perspective or the same references, either vital or behavioural, and that is why there exist so many definitions of quality. Actually, there are as many meanings of quality as standpoints there exist.

Conesa-Fuentes and Aguinaga-Ontoso (2009) mentioned, in a bibliographic review about the quality assessment of health websites, that three problems appear when assessing the quality of health information: the diversity of interpretations of the term quality, the subjective nature of the concept, and the diversity of criteria or indicators that are applied to control quality.

Mayer points out that there is a disparity of definitions (2006), criteria and methods on all different quality control initiatives that have appeared over the years (Mayer, Leis, 2012). Therefore, it would be desirable, and various scientific bodies and government institutions agree with this, to reach a consensus in order to establish standard criteria and good practice guidelines to ensure the quality of online information.

Throughout this article we have used the word quality to refer to the notion of quality, but we have also used terms such as: accuracy, reliability, trust, transparency, truthfulness, relevance, credibility, rigor, authenticity or usefulness. All these words include nuances of quality, and behind them one makes out the behaviour of the content creator, who targets his actions to the user. The user is the target of all websites, regardless of the topics they cover.

Guaranteeing the quality of a website means that, during the process of creation or production (design, development, publication), control protocols have been applied to ensure that the final product fulfils its purpose. The application of these protocols makes us refer to the behaviour above mentioned, i.e., to the way that an editor creates a website. Taking into account these protocols, being aware of and responsible for their own behaviour, means to bear in mind aspects that have to do not only with content production but also with the way how users will consume those contents. Benavente et al. (2010) stressed that "the continuous technological progresses require constant updating of the "know how" in the management of information". Delving into the study of information quality means to decrypt "how" editors and users should manage to ensure that they all comply with it.

8 Conclusions

In view of these facts we conclude that:

- Quality is the key element within the framework provider-user-information. The publication of medical and health websites increases exponentially on the Internet, along with the concern of individuals (users) regarding the question of how to properly discern between quality and non-quality information. It seems necessary to continue working on finding mechanisms that help providers increase the quality of their websites, and users improve their critical capacity to discern good from bad. Online information is increasing quantitatively, and we should focus our efforts onto a qualitative increase.
- The quality of online information is heterogeneous and so is the term quality itself. Quality can be defined in many ways depending on different factors. For instance, a literacy skilled user does not use the same criteria as a less skilled individual or a health professional. Therefore, a balance should be found between what providers and users understand for quality, and uniform criteria of general application should also be set.
- The user appears as the figure on which researchers focus their attention. The User is the one who consults webs and also the target of online published information. The more details one knows about the user's informational behaviour and the way he uses online information, the more elements one will have to work on strategies for improving the quality of the information.
- Internet is an information and communication medium that has had an undeniable impact at all levels. Nowadays it is the most used tool to look for and find information on whatever field of knowledge. Medicine and health fields are not an exception. Within this technological context, the web 2.0 is playing a starring role, to the point that it dissociates increasingly from the web 1.0. The feature that makes this possible is that the social web enables participation, interaction, collaboration and reciprocity between individuals who share a common concern. Recent scientific studies show that the web 2.0 has changed the way the user requests information and, consequently, the way he uses it.

Quality of medical and health information has been a matter of interest since the appearance of the first websites, and it is still a hot topic. The more technological advances appear, the clearer it is that there is still a long way to go before finding effective mechanisms that help the user select higher quality online medical and health information.

We are aware that the quality of medical and health information is a complex matter that could not be solved with a unique solution. The initiatives appeared over the years in regard with quality control have contributed to the improvement of quality of online information, but their effect on the end-user has not gone at the same speed as webs and associated technology has. We agree with Castells (2009) on the point that the Internet is a free communication platform very difficult to control. However, we believe that if we keep looking for strategies and mechanisms of quality improvement, we can achieve positive results in the medium-term.

Given that medical and health information exponentially increases on the Internet, that more and more users use information online to satisfy their information needs, that the web 2.0 is positioning itself as a leading platform where users share affinities and values, that everyone, to a greater or lesser degree, is interested in the quality of online medical and health information, we consider that digital education together with responsible and conscious involvement of all agents are the most appropriate ways to achieve that, on the one hand, medical and health online information editors spread quality information, and on the other, users, also web editors, adopt a more critical attitude and identify quality medical and health information on the net.

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Notes

¹ The term Information Society was introduced by Bangemann et al. in 1994. They pointed out that "the information society has the potential to improve the quality of life of Europe's citizens, the efficiency of our social and economic organisation and to reinforce cohesion".

<<http://ec.europa.eu/archives/ISPO/infosoc/backg/bangeman.html>> (<<http://ec.europa.eu/archives/ISPO/infosoc/backg/bangeman.html>>).

² The basic idea of WWW was to combine the technology of personal computers, computers, the networking and the hypertext into a global information system, powerful and easy to use.

³ reliable adj. Consistently good in quality or performance; able to be trusted.

<<http://www.oxforddictionaries.com/definition/english/reliable>> (<<http://www.oxforddictionaries.com/definition/english/reliable>>).

⁴ According to standard ISO 1400:2004, "certification" refers to the issuing of written assurance (the certificate) by an independent external body that has audited your management system and verified that it conforms to the requirements specified in the standard".

<http://www.iso.org/iso/publicizing_iso9001_iso14001_certification_2010.pdf> (<http://www.iso.org/iso/publicizing_iso9001_iso14001_certification_2010.pdf>).

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