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## Social media in communication and mediation of socio-scientific problems on the example of AIDS

### Introduction

Generation C lives in the digital realm and is brought up in the Internet age. Digital natives are not only interested in searching for information, but, in the first place, in creating their own content and changing the reality they find. This has been made possible for them by the new media which support the use and creation of data and processing it into knowledge, also the one of the same medium (McLuhan, 2004).

User activity of Web 2.0. in educational contexts has been the subject of general interest to educators, including, among others, information architecture textbooks hypertext (Peel, 2002), the use of ICT skills in everyday life of students (Kaminska-Czubała, 2006), and the need to take into account the evolution of didactic media from the distribution of knowledge for communication and collective information processing systems, and the production of knowledge (Tapscott, Williams, 2007). This space, so far, has been the subject of exploration of Polish educators (Potyrała, Jancarz-Łanczkowska, 2014) in connection with models of learning specific contents regarding nature. The main aim of the current study was to investigate the activity of users of Web 2.0 during individual searching for information related to the selected topics of biology and environment of varying difficulty.

When considering the issue of socio-scientific problems we can say that they are made in a social context, they are multi-dimensional, open and contain links to conceptual learning. Subject has taken very specific, definite character. Negotiated problems are difficult to solve, but at the same time create the perfect backdrop for the transformation of education content and widening the perspective of cognitive students. The integration of current research results in the field of natural sciences with an innovative practice and regular monitoring of teaching science in the context of socio-scientific and public community network, deepen the understanding of the functioning model of social communication of scientific problems and the role of the new media. Creating or substitution of reality by the media becomes an impulse to development of conscious attitudes of senders and receivers of information. The

multiplicity of sources of information, the ability to use a variety of educational space provides an opportunity to experience the reality of nature. Allowing students to ask questions, arranging situations to promote open dialogue, debate, arguing and confronting different points of view becomes the driving force behind the development of creative activities. Contemporary media are focused largely on environmental issues, the diagnosis of the state of the environment, progress in the life sciences and their impact on the environment and human health. One of the most common questions are health issues related to HIV/AIDS, cancer, infections, mental and civilization illnesses.

In modern education the aspect of search for opportunities to update and deepen their knowledge has become very important. Creating a space of creative activity opens up new possibilities for the study of links and connections. Enrichment of already acquired knowledge gives you a chance to prevent attitudes of ignorance to the problems of the modern world, as well as preventing risks for human life and health behaviors. Lack of knowledge often influences malfunction, or failure response when it would be desirable to demonstrate initiative. All this creates a denominator of modern education.

## Research aims

The aim of the research was to establish whether new media support social communication of socio-scientific problems and acquisition of social competencies by social networks including information processing and reasoning and questioning, as well as creating a model to learn science through social networks (connectivistic theory).

The study was performed by document analysis and content analysis of online resources with a help of a guide to copyright content analysis/documents.

## Results

### **1. The substantive scope and methodical implementation issues of lifestyle diseases on the example of AIDS due to the requirements of the core curriculum of general education**

Issues relating to civilization diseases are reflected in the core curriculum of general education of December 23<sup>rd</sup> 2008 in the form of a list of topics necessary for the implementation of the content and the competence of the students acquired at a given stage of education. In addition, the form of the general and specific requirements of the curriculum shows the teachers how to select teaching methods and techniques. At each stage of instruction is assumed to implement the content related to lifestyle diseases, including AIDS. A detailed list of the issues is contained in Table 1. Health education takes place not only in the nature and biology lessons, but also during the daily presence of students in the school, which should manifest

itself in appropriate behavior and school activities to promote the idea of caring for health.

**Tab. 1.** List of the issues concerning AIDS in the curriculum for general education

<b>Educational stage</b>	<b>Issue</b>
<b>1<sup>st</sup> – grades I–III</b>	The necessity of controlling one's health and following doctor's recommendations
	Attention of health and safety – one's own as well as other people's
<b>2<sup>nd</sup> – grades IV–VI</b> <b>subject: science</b>	Life and health threatening situations. Taking actions improving one's own and other people's safety. Conscious activity supporting healthcare
	Negative effect of viruses on human's health
	Behaviours and situations that can be life and health threatening
	Rules of healthy lifestyle and the necessity of implementing them
	The ways of maintaining, strengthening and preserving health
<b>3<sup>rd</sup></b> <b>subject: biology</b>	Connection between one's behaviour and maintaining health
	Situations that require medical consultation
	Traits by which viruses differ from cell-built organisms
	Functions of the elements of the immune system
	Elementary rules of prevention of sexually transmitted diseases
	Diseases caused by viruses in human; rules of prevention of those diseases
	Routes of infection with HIV; rules of prevention of AIDS; individual and social outcomes of infection
<b>4<sup>th</sup></b> <b>subject: biology, extended course</b>	Elementary traits of the structure of virion; life cycle of a virus
	Factors that influence disturbance of the homeostasis, including biological pathogenic factors
	Major viral diseases in human, including AIDS; routes of infection with viruses
	Situations in which immunodeficiency occurs, for example AIDS, and threats related to them
	Prevention of HIV infections in view of a very large amount of infections among young people conducted by promiscuity and inclination to risky behaviours
<b>4<sup>th</sup></b> <b>subject: science</b>	Diseases associated with the progress of civilization as a threat to the world. Ways of avoiding them
	Biological aspects of health; internal and external factors that influence the state of health
	Information and statistical data concerning causes and occurrence of diseases associated with the progress of civilization

## **2. Polish foundations and associations for people with AIDS**

In Poland, National Centre works, under the patronage of the Minister of Health. Its task activities are educational information and prevention of AIDS. The Centre also runs an online forum "plus and minus", for people living with HIV/AIDS, their families, and every member of the public interested in the subject. The forum has several thematic sections, which were visited by 750 to 68 500 users (most often discussed subject was living with HIV). From Centre's website you can know the details of social campaigns aimed at doctors, pregnant women and young

people making sexual contacts (one of the actions was to download electronic Valentine's Day cards with information about tests for HIV and send it by e-mail to a beloved person). Until recently, there was a web portal Pastyłka.pl which included the database on AIDS: scientific articles, educational videos and a forum comprising 86 plots, in which often also participated experts in the field of HIV/AIDS. There is also social website "zPlusem" which targets for HIV and AIDS patients, where those interested can set up their blog, publish documents and interact with each other in the created thematic groups. Among the NGOs works Foundation for Social Education. It runs educational activities using the web leczhiv.pl by enabling contact of those infected and their families with specialists in order to get answers to tough questions about HIV and AIDS. In turn, the foundation "We'll" has set itself for the purpose of educating, supporting and activating in the field of AIDS through research grants, educational programs (e.g. the board game "in hospital" was distributed among HIV-infected children) and portals for young people infected with HIV and their parents in this forum an opportunity to exchange experiences and support. Unfortunately, in the last nine months there were only 8 forum entries, and published articles on the site are occasionally commented. In Poland there is also an Association of Suffering from HIV/AIDS "Positive in the Rainbow", which aim is prevention of HIV/AIDS addressed to young people undertaking risky sexual contacts, and people who have recently learned about the infection. Health tips are granted by networking through various instant messaging, as well as events, happenings, concerts, projects and exhibitions. While the Association of Volunteers Against AIDS „Bądź z nami" ("Be with us") has the task of helping the spiritual, moral, psychological, social and material for people with HIV and AIDS and to promote tolerance in society in relation to the infected and sick. The Association runs its own helpline, trains the volunteers, updates service information, as well as distributes printed visual materials, and runs websites in the field of HIV and AIDS. On the website of the Association operates a forum, which is available only after logging in.

### 3. Resources of Polish educational portals

**Scholaris.pl** is a free portal, which resources, according to the authors, are "tailored to all stages of education, and the portal aims to support teachers in the preparation of interesting, often interactive activities by providing them with ready and proven educational materials". Scholaris.pl is to develop the skills of teachers and students in the use of information technology. It is one of the elements of the Government Human Capital Operational Programme. The portal supports a number of organizations including Central Examination Board, Białowieża National Park, Civil Development Forum, Nobody's Children Foundation. The portal Scholaris.pl placed a number of educational materials on the subject of AIDS and HIV. They are generally available to any Internet user who enters the portal page.

Analyzing the resources in category "biology – high school educational level", it can be stated that the subject matter is divided into the following sections: AIDS

and HIV, and AIDS as a social problem in Africa. Available materials were allocated into 4 categories: films and animations (8), multimedia presentations (1), materials practice (7), photos and illustrations (7). Details are included in Table 2.

**Tab. 2.** The list of topics published on the portal scholaris.pl

Topic	Number of views*
HIV and AIDS animation	1100
AIDS as a social problem – animation	1577
What do you know about HIV and AIDS? (questions)	871
Viral Odisseas of the immune system	667
Life cycle of the HIV virus	1669
Virus of acquired immunodeficiency	1007
Organism deprived of defence mechanisms	848
Pathogenic viruses	1632
Symptoms of HIV infection	933
Human Immunodeficiency Virus (HIV)	1511
How to fight HIV?	1016
<b>Subject matters assigned for lower secondary school – secondary school</b>	
Blood banks	1085
Viral hepatitis A	747
Polio carriers	649
Conversation	680
Organ donor/recipient	743
Test results and living with HIV	1026
Immunization schedule	999
Test for presence of hepatitis B virus	944
Routes of HIV infection	1064
Symptoms of viral hepatitis	1093

\* (number of views from 17.04.2016)

The analysis of the number of views showed that the greatest interest is the subject concerning: the cycle proliferation of HIV (1669 views), AIDS as a social problem (1577 views) and pathogenic viruses (1632). Using materials proposed by the authors, you can get answers to questions, such as: What is the difference between HIV and AIDS? What are the ways of HIV infection? What is the cycle of multiplication of the HIV virus? What social risks are brought with AIDS? What are the symptoms of AIDS? What to do to not get infected with HIV? Presented topics correspond to the requirements of the curriculum subject of biology for junior high schools and middle schools.

**Zadane.pl** portal aids students about various educational issues. It was created for people who want to share their knowledge and abilities with others. Zadane.pl in Poland forms the largest educational community. The portal's users are mainly young people (pupils and students) and science enthusiasts. The portal was officially launched in September 2009 and since then has developed very quickly – statistics

from April 2016 indicate 5 096 386 unique users and the total number of page views of 35 935 045. The content of the site is divided into thematic sections, distinguishing between different objects and levels of education. Only registered users may ask questions, but all users may view the contents. We analyzed the available materials and questions for issues relating to social-science problems in the field of AIDS on portal Zadane.pl. The analysis results are presented in Table 3.

**Tab. 3.** Collation of issues regarding HIV/AIDS on web portal Zadane.pl

Lemmas and issues	Number of enquiries*
HIV	9720
AIDS	23 300
What is HIV?	4340
What is AIDS?	10 300
HIV life cycle	9
HIV infection symptoms	324
Human Immunodeficiency Virus (HIV)	1511
How to fight off HIV?	1016
Ways of contracting HIV	241
Life with HIV	1030
Life with AIDS	2100
Project about HIV	864
Project about AIDS	624

\*(number of views as of 17.04.2016)

Participants have the opportunity to evaluate responses, commenting and expressing gratitude for the given answer using the button “Thank you”. Under each of the posts you can see how other community members assess the response and on this basis it is possible to assess their credibility. Due to the fact that the contents are placed without prior verification one should consider the correctness of the information available on this website.

#### **4. The analysis of blog.AIDS.gov and the profile AIDS.gov on the global social networking site – Facebook**

Since the start of AIDS.gov on the 1<sup>st</sup> of December 2006 (World AIDS Day), the interest was increased in the use of new media tools to disseminate information on HIV/AIDS in order to raise awareness about prevention, testing and treatment. Blog. AIDS.gov was created by the US government and it is a place of public discussion on the effective use of new media to describe issues related to HIV/AIDS, present the latest research and social campaigns. The addressees of the blog are individuals and organizations that use or wish to use the new media related to the topic of HIV/AIDS, including: minorities and leaders in the field of public health; members of the public and the government; health care professionals and consumers looking for news about research. Contents on the blog are placed with the weekly frequency of new

audiovisual materials, authors' blog entries, entries by invited guests, and materials prepared by government organizations. In the White House, governmental blogs are devoted to infectious diseases.

The areas of blog content are, among others, to: 1) present and explain the use of new multimedia tools in the context of their use to inform about issues related to HIV; 2) inform about the threat and the proceedings in the case of being HIV positive; 3) indicate examples of the use of new media in the community of people living with HIV, including the report on conferences on this subject; 4) provide information on government policy of the United States on HIV/AIDS, and news about research; 5) promote prevention, treatment, research programs and initiatives, particularly the use of new media.

Blog.AIDS.gov has appeal to many social networking sites, like Facebook, Twitter, YouTube, Foursquare, Flickr, Pinterest. Blog readers can express their comments, share posts on their social networks to recommend to their friends. In 2016, 128 posts were published (as of 17<sup>th</sup> of April 2016), which have repeatedly been made available on other social networks.

Currently, Facebook is the most famous and popular worldwide social network that gives the possibility of contact, exchange and development interests. According to Wikipedia.org, project Facebook was launched in February 2004. Currently it has more than 1 billion users. AIDS.gov profile belongs to the Organization of American Government. The analysis was made for the most frequently discussed topics and the resulting questions or issues communicated by the person providing information (leaving comments, likes) on the profile of the organization. The profile has 40 740 likes (as of 17<sup>th</sup> of April 2016). The authors provide information that give the opportunity to increase the knowledge of users in terms of the dangers of HIV, its prevention, and awareness of the possibility of obtaining assistance in case of being a carrier. The profile beyond fulfilling the function of information, also gives the opportunity of discussion, but those are held in a very limited extent. The films represent an additional opportunity and incentive explore of the topic. Published posts contain links to articles about everyday life and problems of infected people. The questions posed by the authors are mobilizing to reflect and seek answers. They are made available to medical reports. The posts don't have many comments, which may point to the fact that HIV and AIDS are still a difficult discussion subjects for society. When analyzing the timeline we noted that user comments do not come only from the United States, but also from other countries, e.g. India. The comments usually take the form of the affirmative sentences, supporting the subject of the post. The articles to which links are posted on the profile are made available to the private profiles of people who "like" AIDS.gov, so you can reach an even wider audience. Very popular are reports of scientific conferences – like link of 6<sup>th</sup> of April 2016. "The National Youth HIV & AIDS Awareness Day" received a number of 202 shares. The information about the chat "Youth & HIV" on Twitter, which took place in April last year, received a number of shares that generated 71 111 of likes (as of 17<sup>th</sup> of

April 2016). Home abounds in a series of links to websites of other organizations dealing with issues of AIDS and HIV. The published article included stories of people infected by the virus. Many of them entails positive messages. The reported stories of people give hope that "HIV is not a judgment". The profile AIDS.gov creates the possibility to confront stereotypes and misconceptions about HIV and AIDS with the latest research reports. Relationship with the life of people infected and sick shows the possibilities to seek help or support. It is an opportunity to exchange views and establish contact with organizations and individual supporters to get reliable information in social-scientific problems in the field of AIDS and HIV.

## Conclusions

Contemporarily, an aspect of searching for the opportunity to update the knowledge has become very meaningful in education. Enriching already gained knowledge gives a chance of avoiding attitude of ignorance to the problems of the modern world, and a chance to counteract behaviours that are risky to people's health and live. The lack of knowledge is often enough, followed by mistaken actions or not reacting when taking up the initiative would be the right thing to do.

Nowadays media often focus mainly on environmental issues, progress in life sciences and its impact on human health. One of the most often discussed questions concerning health are those concerning HIV/AIDS, tumours, infections, mental illnesses and diseases associated with the progress of civilization.

The most popular themes in educational web portals are those concerning questions of the HIV viral life cycle, AIDS as a social problem, and pathogenic viruses. The user can obtain information about the difference between AIDS and HIV, routes of infection, symptoms of AIDS and ways of avoiding infection with HIV.

The themes presented in educational web portals correspond with the demands of the core curriculum for biology in secondary schools and high schools.

The posts in social media are rarely commented, which points that AIDS and HIV are still difficult topics in our society.

Web portals support gaining reliable information relating to socio-scientific problems concerning AIDS and HIV.

Since the issues concerning AIDS emerged in the social networks, a growth of interest in using new media tools to diffuse information about the topic was observed.

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### Abstract

Educational needs of the C generation, as well as the fast growth of informational resources of the Web, are reflected in social media. Prosumerism has its outcomes – the more consumers of information become its producers or proactive consumers, the more a well operating apparatus of didactical media is needed. The attention is focused on the range of utilizing website navigation systems (sets of websites and links), tagging, searching and types of links utilized by the netizens who use the data (Rosenfeld, Morville, 2003).

The main aim of the research was to establish whether new media support social communication of socio-scientific problems and acquisition of social competencies by social networks. An analysis was made of the core curriculum of the general education in terms of a range of issues relating to AIDS, of the web pages of foundations and associations for people with AIDS and of resources of educational portals and blogs devoted to AIDS. It has been shown that modern media raise issues of health education, and social networks are increasingly used as new media tools for communication of socio-scientific problems regarding civilization diseases, including AIDS.

**Key words:** social media, scientific communication, SSI, AIDS, HIV

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