Wikipedia in Academia

a cura di
Valentina Gallo e Corrado Petrucco

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Prefazione

La rivoluzione digitale prima, la pandemia dopo, hanno stravolto la comunicazione della scienza e dei saperi. La nicchia eco-culturale della rete, in cui tutti in un modo o nell'altro viviamo, mostra oggi tutte le sue radicali ambivalenze in quanto luogo di libera e universale fruizione e diffusione di informazioni e, al contempo, terreno di proliferazione per fake news, pregiudizi, violenza verbale.

Da tempo la comunicazione scientifica, per esempio, stava abbandonando modalità paternalistiche e unilaterali di "divulgazione" delle conoscenze, per aderire a modelli più partecipativi, coinvolgenti, capaci di mescolare nuovi linguaggi, *in primis* quelli del web e dei social network. In una parola, più democratici e aperti. Ma forse non basta, se guardiamo al disastro comunicativo in cui è incorsa la comunità scientifica durante la pandemia. Dobbiamo trovare nuove modalità per unire la rapidità del web e l'autorevolezza.

Quanto alle fake news, sappiamo che smentirle nei loro contenuti falsi e fuorvianti, una per una, è necessario, ma non sufficiente. Quando lo si fa, spesso una parte del pubblico si arrocca in difesa dei suoi preconcetti. Bisogna smontare le fake news anche sul piano metodologico, mostrandone i trucchi, le fallacie logiche e le tecniche di comunicazione, spesso per nulla banali purtroppo. Gli spacciatori di fake news non sono somari ignoranti, sono professionisti. Il miglior antidoto per disarmarli è spiegare al pubblico la bellezza e la libertà della scienza, che resta la migliore palestra contro i fanatismi, le false certezze consolanti e i dogmatismi che facilmente colonizzano le nostre menti.

Dunque il progetto *Wikipedia in Academia* è più che mai urgente e tempestivo, perché ci aiuta a decifrare questa transizione critica in un modo originale. La conoscenza collaborativa, in quanto costruzione sociale della conoscenza, è in linea di principio una palestra di democrazia. Nella sua dinamica, infatti, si basa sulla continua auto-correzione attraverso la discussione critica e antagonistica tra pari, vige la libertà di critica (purché argomentata), bisogna sempre considerare il dissenso di chi è in minoranza (purché lo sfidante si assuma l'onere della prova ed esibisca nuovi dati o spiegazioni migliori), non esistono gerarchie di autorità precostituite. Soprattutto, vale l'etica della trasparenza

e bisogna costantemente ammettere incertezze sulle fonti e ignoranza. Proprio come nella scienza, un'impresa collettiva che a forza di critiche e revisioni aumenta irreversibilmente l'affidabilità e l'estensione delle nostre conoscenze.

Se a questo ormai ventennale modello wikipediano di partecipazione regolata associamo la competenza delle Università, favorendo inoltre il passaggio degli studenti da fruitori passivi, e magari acritici, ad autori delle voci, l'oliato meccanismo di auto-revisione fa un salto di qualità, insieme all'affidabilità media della immensa enciclopedia online. Unire la velocità (Wiki) agli esperti (ricordiamo che la scienza è lenta per definizione) suona come un ossimoro, ma dai saggi che seguono sembra che la contraddizione possa essere superata con le metodologie didattiche giuste e i contesti adatti. Se miglioriamo infatti il senso critico e le capacità di filtraggio delle notizie inserite nelle voci, i ben noti limiti del controllo collettivo - già evidenziati tra gli altri da Umberto Eco, che si confessava utente compulsivo di Wikipedia - si assottigliano.

Questo tentativo di alleanza tra la fluidità incontenibile dell'enciclopedia digitale e la precisione dello specialista è senz'altro una delle sperimentazioni più interessanti per rendere il web un luogo più civile dove trascorrere per svago e lavoro alcune ore delle nostre giornate. Abbiamo bisogno di una nuova ecologia del digitale che parta dal rispetto delle fonti e dalla responsabilità verso il pubblico, e questo libro è un ottimo contributo in questa direzione.

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Wikipedia in teaching "Pharmacology and Pharmacotherapy" to Pharmacy students

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Abstract. Wikipedia is a very popular website on the Internet, free of any charge and written by spontaneous editors; each voice is checked and continuously modified by anyone who has the skills to do it. To increase the motivation in learning Pharmacology of fourth year students of Pharmacy degree, it has been proposed to them to participate in drafting several Wikipedia entries regarding selected drugs among those treated during frontal teaching lessons. The Wiki groups started their work at the end of October and finished it in January 2019. Overall, students learned to reformulate knowledge on the drugs, to work in group, to consult various types of sources (databases, articles, texts) and to use a language suitable for inexperienced readers.

Introduction

Wikipedia is used as a source of information about any type of knowledge requested and even about health care and drugs (Heilman & West, 2015; Selwyn & Gorard, 2016). Wikipedia is open to the public and may be edited at any time by anyone. Moreover, Wikipedia has been shown to be widely used by undergraduate medical students (Allahwala, Nadkarni, & Sebaratnam, 2013). Most voices are edited in English, but several items are also available in many different languages. Among these, medicinal Wikipedia content is made up of

more than 150.000 articles in 255 languages (Heilman & West, 2015). Up to date, Wikipedia contains more than 13.000 pharmacology and medicines-related articles (https://en.wikipedia.org/wiki/Wikipedia:WikiProject_Pharmacology). Wikipedia is generally accurate and easy to use, but its entries can be incomplete and have omissions (Kupferberg & Protus, 2011).

The pilot Wikipedia project of the University of Padova envisaged voluntary enrolment of teaching staff during two meetings with managers of the Digital Learning University project. Supporting materials and tutorials were given to teachers and, in a second step, to students on the Moodle platform. The reason why I joined this project was because I considered it an opportunity to stimulate students' interest in the field of Pharmacology and to learn more about Wikipedia. Further, I also positively evaluated the contribution that students could have given to develop specific entries in Wikipedia. Overall, I hoped that the Wikipedia project could represent an opportunity for students to put their acquired knowledge into practice through the creation of new Italian Wikipedia entries about drugs used in therapy and distributed in pharmacies.

Field of teaching

The Pharmacology and Pharmacotherapy course consists in 72 hours of frontal teaching, number of ECTS credits allocated 9. It is for students of the fourth year of the Degree in Pharmacy (Department of Pharmaceutical Sciences, University of Padova). These students have already acquired advanced knowledge in chemistry, biology, human anatomy, physiology and pharmaceutical chemistry.

Project steps

The idea to involve students in the Wikipedia project was born from the observation that sometimes students of the course believe that they already know enough about drugs and thus their motivation to learn is poor. That is why, I invited students to take part in the project through voluntary adhesion as an opportunity to test themselves and, at the same time, to contribute actively to increase the number and the quality of items in Wikipedia. I asked them: "Who among you uses Wikipedia?" Obviously, a lot of them answered positively.

The project was planned in seven steps:
1. Presentation of the Wiki project,
2. Type of assessment in the final exam,

3. Timing of the project,

4. Enrolment of students and division in groups,

5. Definition of the entries to develop in Wikipedia (list of drugs),

6. Redaction of entries by students and final revision in sandbox,

7. Publication of items in Wikipedia.

Presentation, assessment in the final exam and timing of the project

Most of students use Wikipedia, and professors too! When people run a search in internet the Wikipedia link always appears. It is a free, quick reference tool that can contribute to greater knowledge on every topic, mainly for those not expert in that field. With these assumptions, I introduced the project during the first lecture of the class, and then it was presented in detail at the end of October 2018 (Figure 1) with the participation of Dr Ferranti and Wikipedian Mr Chemello.

Figure 1 Opening of the Wiki project (24 October 2018, Pharmacology and Pharmacotherapy course).

In order to increase the attendance and to endorse the work done, the engagement in the Wiki project entailed the acquisition of two points to add to the mark obtained in the oral exam taken by each student at the end of the course. Regarding the project execution times, Wiki groups started their work at the beginning of November 2018 and concluded it in January 2019. Even if the groups' schedule was sometimes influenced by other obligations of students, the timing of the project was respected by almost all participants.

Enrolment of students and division in groups

The Pharmacology and Pharmacotherapy course was attended by 159 students (data from Moodle platform), many of whom commute because residing in nearby cities (Verona, Treviso, etc.). Of these, 67 joined to the Wiki project (Figure 2). Female participants (61) were significantly more than males.

In a second time, the participating students were subdivided into small groups of two or three members. The composition of each group was made based on students' choice.

Figure 2 Students engaged in the Wikipedia project have been 42% of those attending the Pharmacology and Pharmacotherapy course (A.Y. 2018 - 2019). The attendance rate was satisfactory also considering the high share of commuting students.
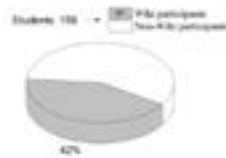
Definition of entries to develop in Wikipedia (list of drugs)

After the formation of students' groups, a list of the drugs that could be created or expanded was provided to participants (Table 1), based on the *syllabus* of the course and considering the items of drugs already present in Wikipedia (Italian version).

Table 1 The Wiki groups and drugs which were implemented in Wikipedia.

Groups	Participants	Drugs
1	Diletta, Angela, Giorgia	Tiotropio
2	Anna, Arianna, Matteo	Eplerenone
3	Silvia, Micol, Laura	Triazolam
4	Martina, Roberta	Bumetanide
5	Gabriela, Ylenia, Anna	Bisoprololo
6	Tatiana, Giulia	Omalizumab
7	Maria, Nicole	Labetalolo
8	Lara, Diletta	Ipratropio
9	Erika, Sonia	Tiocolchicoside
10	Samantha, Alessia, Eni	Acarbosio
11	Alessandra, Gaia	Vildagliptin
12	Giulia, Federica, Marisa	Rabeprazolo
13	Silvia, Beatrice	Ticagrelor
14	Lucia, Irene, Andrea Gaia	Tirofiban
15	Martina, Giulia, Sara	Tamoxifene
16	Giovanni, Camilla, Irene	Liraglutide
17	Paola, Linda, Blerta	Torasemide
18	Elisa, Marco	Sotalolo
19	Federica, Chiara, Katia	Iloprost
20	Ambra, Elena	Nortriptilina
21	Giulio, Elisa	Sucralfato
22	Sabrina, Anna	Isosorbide mononitrato
23	Tullia, Silvia, Ilenia	Isosorbide dinitrato
24	Laura, Laura, Veronica	Procainamide
25	Ludovica, Tommaso, Nicolò	Acido glicirretico

Each group chose a drug of the list and edited both its pharmacodynamic and pharmacokinetic characteristics. In order to do that, within each group a manager was defined, and he/she made available to the group a sandbox in which each member had to insert its part of the item, in agreement with the editorial rules of Wikipedia. The drugs implemented were improved with pharmacodynamic and pharmacokinetic profiles. Further, Adverse Drug Reactions (ADR) and potential drug-drug interactions were included. Particular attention was payed to the editing of notes and bibliography. In general, several pharmacology texts and the RCP (Riassunto delle Caratteristiche del Prodotto) of the drug were consulted, the last was obtained from the AIFA website (Agenzia Italiana del Farmaco, https://www.aifa.gov.it/trova-farmaco). During the draft of the item related to each drug, I have checked the progress and the effective participation of each student in the sandbox, also through the view history link.

Publication of the items in Wikipedia

Thanks to this project 26 entries of drugs sold in pharmacies and of general use in therapy were improved by students during the course, contributing to the development of Italian Wikipedia. Further, the motivation of students grew, and their self-estimation incremented. Overall, most participants enjoyed their commitment to the Wiki project.

Conclusions

The online resource Wikipedia is increasingly used by students for knowledge acquisition and learning. However, the lack of a formal editorial review and the heterogeneous expertise of contributors often result in educators' skepticism on whether or not Wikipedia should be recommended to students as an information source. Recently, authors suggested that Wikipedia is an accurate and comprehensive source of drug-related information for undergraduate medical education (Kräenbring et al., 2014). Efforts are beginning to be made to build Wikipedia authorship (Selwyn & Gorard, 2016). Pharmacists, as medicines experts, should take a leading role in contributing to health information dissemination in these user-friendly virtual environments, to reach not only other health care professionals but also health consumers (Benetoli, Chen, Schaefer, Chaar, & Aslani, 2016).

The Wiki project was completed by all engaged groups for a total of 67 students of the Pharmacology course. The main goals achieved are a) increased opportunity of teacher-students relationship, b) increased students' motivation to

study pharmacology, and c) increased academic outcomes, in fact all participants passed the exam at the first try, with an excellent performance. Considering this educational experience, it could be observed that the possibility to actively participate in editing Wikipedia items about drugs met the expectations of the engaged students of the Pharmacology course in Pharmacy degree.

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"I sometimes think that general and popular treatises are almost as important for the progress of science as original work."

Charles Darwin, 1865.

Da icona di un'informazione semplificata e inaffidabile a raffinato e importante strumento di critica e costruzione collettiva di conoscenza: nel suo ventennale, Wikipedia entra nelle aule e negli studi universitari, offrendo occasione di dibattito, di negoziazione tra pari, di ridefinizione della gerarchia dei saperi, di accertamento delle fonti e scrittura collaborativa.

Il volume presenta un ampio insieme di esperienze sulla didattica universitaria con Wikipedia, mettendo a confronto molteplici pratiche disciplinari in Italia e all'estero.