

Product Review (Medical Education)

Mendeley as an integral tool in the arsenal of modern scientist

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Abstract

This paper presents the possibilities of Mendeley – a reference manager and social network for researchers. The key aspects of using this software as an effective reference manager as well as a tool for organizing full-text archive of publications and processing scientific sources when conducting research are highlighted. The possibilities of Mendeley as a social network, namely a means of communication and collaboration between researchers, sharing of reference database and search for new scientific publications are presented as well.

In general, Mendeley, due to its functionality, is an integral part of the scientific research carried out by students, scientists or laboratory research groups. The use of Mendeley by all members of the research project will allow them to effectively search for original sources and analyze them; to quickly create the reference list according to different styles; to follow other researchers in order to view relevant papers; to greatly enhance the quality of the research; to expand the potential readership of their publications.

Keywords

Mendeley; reference manager; social network

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Introduction

The search for and analysis of scientific literature is an integral part of any research. The literature review allows the authors to define the problem, its unexplored aspects as well as to critically evaluate the existing data [1, 2]. When reviewing the scientific literature, new ideas and methods allowing the researchers to obtain totally new results concerning the issue which seems to be studied sufficiently comprehensively occur [3].

Whether it is the first scientific research of a student, a graduate assistant or an experienced scientist working in the leading laboratory or research institute is of no importance, since the search for original sources does not end with problem statement and the determination of the objective [3]. It continues when conducting research thereby helping generalize the results, interpret them and find the answers to controversial issues [4]. Any scientist will agree that searching for and processing scientific sources are not an easy task; it requires endurance, perseverance as well as the ability to analyze and compare [5]. Considering the fact that the scientific community is experiencing an information explosion [6, 7], to form a unified whole, any researcher has to review more than 100 publications.

When processing scientific sources, the researchers systematize them in the way being convenient for them. Some scientists like to write metadata on the cards, others copy or print research papers, form thematic folders. Some re-

searchers try to find the required sources on the Internet and save them on their own workstations, thereby creating the classification system which is understandable only for them. However, over time, the scientists become lost in the hundreds of copies and document files on their computers since when conducting research the libraries created by them become significantly expanded [8].

In the era of rapid development of computer technologies, powerful and necessary tools such as reference managers became available to scientists. They eliminate routine systematization of scientific sources to a large extent and allow the authors to save some time. These programs differ in the functionality, interface and cost [9, 10]. The objective of the research was to attract Your attention to one of such programs - Mendeley.

Discussion

Mendeley (<https://www.mendeley.com>) is a classical reference manager (Fig. 1) [11], the basic configuration of which is free for personal use. This software allows the authors to create their own reference database on the basis of metadata which allows identifying specific publication. Surely, the creation of such database requires a certain amount of time. The recognition of metadata of most foreign publications embedded in their pdf-galleys occurs automatically - just specifying the path to that file. Unfortunately, the quality of typography in Ukraine often does not allow the scientists

to extract these publications, thereby requiring manual correction. It should be noted that other ways to import data are realized as well: 1) by means of Web Importer which is integrated into a web-browser; 2) using a unique identifier (ID) such as a DOI or PubMed ID (Fig. 2); 3) using BibTEX, RIS, EndNote XML or Zotero Library format [10].

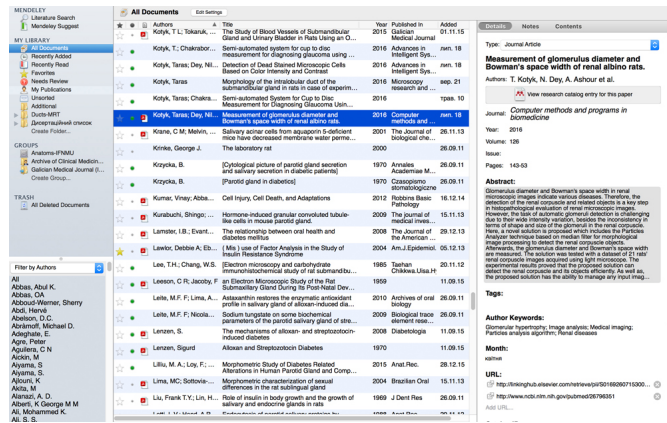


Figure 1. Main window of Mendeley.

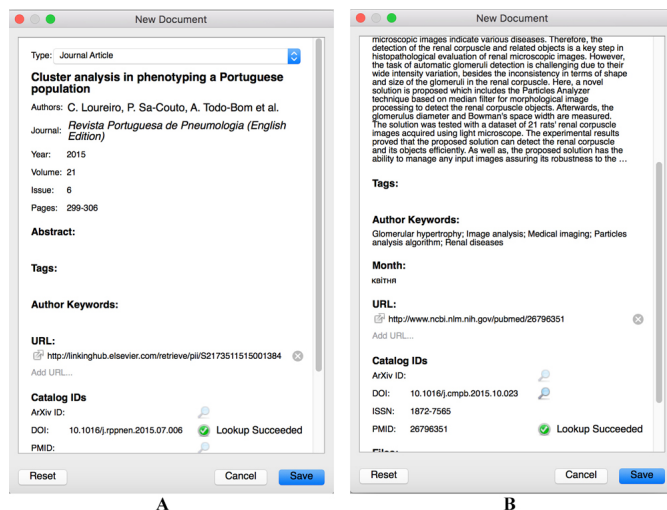


Figure 2. Search for publication metadata using a DOI (A) or PubMed ID (B).

The central part of the window contains the list of the newly added publications. In the left pane, there are library folder and search filters; in the right pane, there are metadata of an active publication.

The presence of publication metadata only is not sufficient for the processing of scientific literature. Therefore, Mendeley allows the users to attach the files containing full text to appropriate records as well as to add sticky notes and highlight the required fragments (Fig. 3) [12]. The publications which are included in their own shared database may be sorted in the directories (folders) in order to publish a specific manuscript or thematic one (Fig. 1).

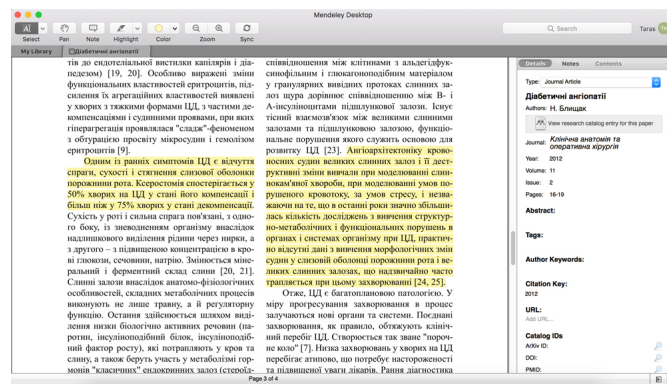


Figure 3. Work with full-text publication in Mendeley.

The important thing is that Mendeley allows the user to create the reference list according to different styles (Fig. 4). It helps scientists significantly save time when preparing research paper for publication, since it is sufficient to choose the required style only and the reference list will be automatically formatted. One of the most difficult tasks for our scientist is to present the reference list in accordance with National Standards of Ukraine (DSTU 7.1:2006). Unfortunately, none of the existing reference managers supports it out of the box. However, due to the efforts of M. Shevchuk [13], Mendeley allows the user to import this style, which, despite the necessity to check the correctness of source presentation, makes the process of creating the reference list much easier. Moreover, the integration with the word processor MS Word allows the user to place reference links within the text as well as to automatically create the reference list. It should be noted that this paper was prepared using Mendeley only.

The fact that Mendeley works on different operating systems (Windows, Mac OS, Linux) as well as via the web interface [14] is of great importance as well. It allows the researcher to access the library from any computer online. It should be noted that the aforementioned reference manager is, to a certain extent, a social network. Having filled out an academic profile, the scientist is able to join and collaborate with other like-minded researchers as well as to search for job vacancies and receive messages concerning relevant papers [15]. The researcher is able to use Mendeley search engine as well; it significantly expands the possibilities of searching for and analyzing scientific literature. In general, such features of the platform contribute to the acquisition of new knowledge and sharing of obtained knowledge with others, increase the effectiveness of the research [16]. In addition, the import of personal publications into Mendeley increases their availability to the scientific community. Creating and joining various groups which allows the user, for example, to share abstract database and full-text publications with the researchers who conduct a multicenter study [17] is a useful feature as well. It is worth mentioning that many journals including “Galician Medical Journal” and “Archive of Clinical Medicine” export published papers to their own public groups and anyone as a

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Figure 4. Presentation of the reference list according to DSTU 7.1:2006 (A) and Vancouver style (B).

member of such group has the opportunity to access the latest issues without visiting their websites.

Special feature of Mendeley is its integration with Elsevier [18] that allows the user to easily import publication metadata from ScienceDirect into his/her own library. Moreover, the authors who published their papers in the journals indexed in Scopus are able to track the dynamics of publication reviews and citations (Fig. 5). On the other hand, the scientists have the opportunity to obtain the same information concerning the manuscripts they peer-reviewed (Fig. 6). In other words, Mendeley can be considered as an instrument for obtaining scientometric information [19].

Conclusions

Thus, Mendeley, due to its functionality, is an integral part of the scientific research carried out by students, scientists or laboratory research groups. The use of Mendeley by the members of the research project will allow them to effectively search for original sources and analyze them; to quickly create the reference list according to different styles; to follow other researchers in order to view relevant papers; to greatly enhance the quality of the research; to expand the potential readership of their publications.

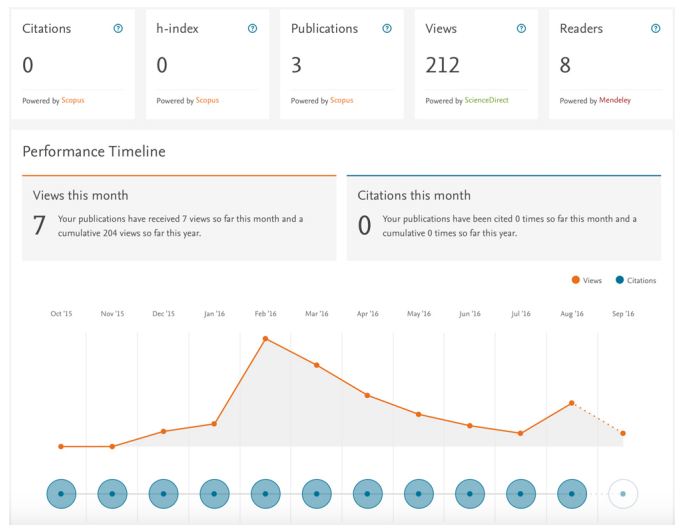


Figure 5. Reviews and citations of own publications indexed in Scopus.



Figure 6. Scientometric information concerning the paper published and indexed in Scopus which was peer-reviewed by the user.

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