2008-5435/14/63-137-142
INTERNATIONAL JOURNAL OF OCCUPATIONAL HYGIENE

IJOH 6: 137-142, 2014

ORIGINAL ARTICLE

Author Role in Online Submission and Peer Review Systems of Iranian Medical Journals

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Received May 18, 2014; Revised June 7, 2014; Accepted June 26, 2014

This paper is available on-line at *http://ijoh.tums.ac.ir*

ABSTRACT

Since the late 1990s, different web-based submission and peer review systems have emerged, and significant numbers of journals have shifted from their old paper-based systems to the web-based ones. Exploring the main features of these online systems might lead to better understand this flow. This study was performed to examine the features and capabilities of online submissions and peer review systems, with focus on the author role, which have been currently using by Iranian, approved medical and biomedical journals. This descriptive study was conducted during 2011-2012. The population of the study was peer review systems of approved medical and biomedical journals by Ministry of Health and Medical Education, Iran. In this term, 199 journals were identified. Data were gathered by a standardized, researcher made checklist. The data were analyzed using SPSS 18 and Microsoft Excel 2007. 27 out of 199 journals were using no systems. 21 out of 199 were using 12 systems with inaccessible information or unknown status (which were removed from this study), and 151 journals were using 6 systems which were examined in this study. Evaluated systems were more than 80% in compliance with the research checklist. Due to rapid changes in information technology and information systems` designs, it is required for such systems to be constantly evaluated. It is of high value to investigate new demands of beneficiary groups like authors and researchers, editorial boards, and reviewers in this regard.

Keywords: *Online Submission, Manuscript, Peer Review Systems, Journal Management Systems*

INTRODUCTION

Online submission and peer review systems allow authors, and reviewers and editorial staff to manage the submission of articles, and the subsequent peer-review processes electronically in a web-based environment with all communication with the stakeholders taking place online [1]. These systems begun to emerge since the late 1990s, and significant numbers of journals, especially in science and biomedical sciences, have shifted from their old paper-based systems to the web-based ones [2]. Moreover, there has been an increase (20-40%) in the number of papers submitted electronically via those web-based submission and peer review systems in recent years [1]. There are a number of advantages from authors' perspectives regarding using web-based submission and peer review systems including faster responses, shorter refereeing times, greater transparency and convenience [3]. As more authors and reviewers practice electronically in a web-

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based environment, and get familiar with the benefits of online submissions, they will begin to expect of other paper-based journals to shift toward the web-based submission systems. Those journals resist against this technological shift will face challenges bringing them a distinct disadvantage however they might find it a challenging job to choose the right system to meet their editorial tasks [2]. An extensive international survey on online submission and peer review system was conducted for the Association of Learned and Professional Society Publishers (ALPSP) in early 2005 to address this issue. ALPSP sought to determine editors, authors, reviewers and publishers experiences and to establish the end users reactions and effects on journals [4]. Factors found to be influencing the easy use of the system have been explored by ALPSP. They have reported that providing planning before implementing, training, and support for publishers and editors make it convenient to use the system [1, 4]. This survey simply indicates some main features of an online submission and peer review system.

Another research with the purpose of studying the peer-review process in articles and its necessity for controlling of published scientific work quality was performed in 2013 by Abooyee et al. [5]. It considered the types of refereeing currently practiced, the decision-making methods and the criteria for acceptance of articles, the major decision makers, editor in chief problems, and the current norms in the peer-review process in Iranian scientific journals [5].

Two hundred and forty five scientific journals were covered through survey methodology. They found out that the predominant type of refereeing for articles submitted to these journals is 'double blind' and the prevailing method of informing authors about the results of manuscript evaluation is commenting on the manuscript. The results also indicated that of the five main parties cooperating in the peer review process, the editorial board plays the most fundamental role [5]. Understanding this could help system designers to better develop online submission and peer review systems in order to meet the editorial needs.

Features of such systems could be alike [6]. Such features were described in a study by Willinsky in 2005. Open Journal System (OJS), from the Public Knowledge Project was an open source solution to manage and publish scholarly journals online, which could reduce publishing costs compared to print and other traditional publishing processes. OJS was a highly flexible editor-operated journal management and publishing system that could be downloaded for free and installed on a local web server [7].

AllenTrack, Bench Press, EdiKitSM, ESPERE, Journal Assistant, Manuscript Central, and Rapid Review are among the established and recent web-based systems, which were evaluated in 2002 by McKiernan [8]. An outline of the features and functionalities of the system/service, contact information, web site, and vendor, listings of select journals published using a respective software/system were listed within each profile [8].

In Iran, other similar studies have been conducted [5-6]. In a comprehensive research, for investigating the essential features, online submission and peer review software designed and produced domestically were analyzed and presented in tabular format by Sheikh Shoaie [6]. A similar study on content management systems of journals was performed by Salimian in Iran [9]. At that study some Iranian peer review systems as well as the open source, open access system, OJS were evaluated.

Several articles on online submission and peer review system note both success stories [10-13] as well as challenges [4, 14]. These articles are informative, but none of them thoroughly describes the critical features of each of 3 main roles (author, reviewer, and editorial). The functionality checklist provided in this study, will detail and discuss these features in author role.

Thus, the purpose of this study was to examine the author role in online submission and peer review systems of Iranian medical journals.

METHODS

The research was a descriptive study, conducted during 2011-2012 in Iran while 199 medical and biomedical journals approved by the Ministry of Health, and Medical Education of Iran were examined to explore what submission system is used. Data were gathered by a standardized, researcher made checklist. The checklist was validated by a panel of five experts in the field of library and information sciences in two rounds. The reliability test was also conducted and the Cronbach's Alpha was calculated 0.907.

Data were collected and analyzed using the Microsoft Excel 7 and SPSS 18. For the author role in the functionality checklist, 5 main processes were defined. These processes included 1- author registration process 2- manuscript submission process 3- tracking manuscript process 4- dealing with expenses (including required fees and deposits), and 5- providing instruction and guidelines. Each of these processes included a series of actions. The actions along with their related process are categorized at Table 1.

RESULTS

Twenty seven out of 199 journals were using no system. Out of 199 journals, twenty first were using systems with inaccessible information or unknown status and 151 out of 199 journals were using 6 online systems. Thus, 48 (27+21=48) out of 199 journals (24% of the target group) were eliminated from the study and 156 out of 199 journals (76% of the target group) were examined. Evaluated systems were 1. Yekta web 2. Niloofar 3. Manuscript Online 4. Customized system of

Published online: July 9, 2014

Table 1. Action and process in author role

Process	Author registration	Manuscript submission	Tracking manuscript	Expenses	Instructions
Action	Selecting desirable username and password	Submitting a new manuscript	Access to manuscript correspondence history	Processing publication fees through the internet	Author guide
	Sending username and password to author email address	Selecting article type	Receiving editor decision letter by email	Receiving the confirmation note of processed fees by email or through the system	Downloadable instructional files
	Changing username	Adding co-authors with their academic affiliations and contact email addresses	Getting informed of decision made after the review process and through the system	Receiving the receipt of processed fees by email or through the system	Online chat
	Changing password	Designating "First author" and "Corresponding author" separately	Submitting a letter to editor and viewing the editor`s response		Support center
	Receiving new password in case of forgetting the password	Re-sequencing list of co-authors	Responding to reviewers (responses are recorded in the system)		
	Author personal information form	Secondary fields for international author information	Access to prior revisions of the submission		
	Supportive organization form	directing a copy of all manuscript correspondences to author`s email address	Author`s previous manuscript		
	Specifying alternate email address and contact information	Suggesting or opposing a reviewer	Author`s submitted manuscript for reviewing		
	Indicating unavailability dates	Uploading supplementary materials	Reviewed manuscript		
	Specifying an alternate contact person at unavailability dates	Converting a variety of file formats in to a PDF file	Author`s submitted manuscript for proof reading		
	Selecting author`s own keywords describing the submission	Indicating an item will be submitted offline	Author`s denied manuscript		
	Selecting author`s own keywords describing their area of expertise	Entering metadata for figure files	Author`s submitted manuscript for editing		
	Selecting form a publication-defined list of keywords describing the submission	Requiring authors to confirm the PDF file before final submission			
	Selecting form a publication-defined list of keywords describing author`s area of expertise	Editing the manuscript prior to submission			
	Editing personal information	Auto-save submission for later completion			
	Access to author`s databank	Revised manuscript folder			
		Confirmed manuscript			
		Denied manuscript			

the Tehran University of Medical Sciences 5. Kowsar and 6. the open source, open access system called OJS. Four systems were designed and produced in Iran by four different companies, except the open source, open access system, which is OJS and is a project by the Public Knowledge Project from Canada and the Kowsar system which is designed and produced in Netherlands. Domestically based companies, are Yekta web Afzaare Shargh Company (Yekta web system) 2- IT Promotion Company of Iran (Niloofar system) 3- Health Researchers R&D Institute (Manuscript online system) and 4- Tehran University of Medical Sciences (a customized system). The checklist was sent to the 6 companies to fill.

A Brief Profile of Systems

Yekta web

Producer Company: Yekta web Afzaare Shargh
Country: Iran
Website: http: //www.yektaweb.com/
System Supported languages: English and Persian

Published online: July 9, 2014

Table 2. System scores in each process

Author role	OJS	Manuscript online	TUMS	Kowsar	Niloofar	Yektaweb	Total	Ideal	Comparison index (%)
Total	99	65	83	104	98	99	548	109	83.79
Registration	30	21	27	38	35	30	181	40	75.41
Submission	36	20	34	36	33	36	195	36	90.27
Tracking	18	18	16	18	18	18	106	18	98.14
Expenses	3	0	0	3	0	3	9	3	50
Instructions	12	6	6	9	12	12	57	12	79.16

Table 3. Average and standard deviation of the 6 examined systems

Role	Number of systems	Minimum	Maximum	Average	Standard deviation	Ideal system
Author	6	65	104	91.33	14.733	109

Niloofar

Producer Company: IT Promotion Company
Country: Iran
Website: http://www.itpco.net/
System Supported languages: English and Persian

Manuscript Online

Producer Company: Health Researchers R&D Institute
Country: Iran
Website: http://www.manuscriptonline.com/
System Supported languages: English and Persian

Customized system of the Tehran University of Medical Sciences

Producer Company: Tehran University of Medical Sciences
Country: Iran
Website: http://www.tums.ac.ir/
System Supported languages: English and Persian

OJS

Producer Company: Public Knowledge Project
Country: Canada
Website: http://pkp.sfu.ca/
System Supported languages: Multi language

Kowsar

Producer Company: Kowsar Publishing Corporation
Country: Netherlands
Website: http://www.kowsarcorp.com/
System Supported languages: English and Persian

1. System Scores in Each Action and Process

The scores of evaluated systems in each process (registration, submission, tracking, dealing with expenses, and providing instructions) are displayed in Table 2. A system called Ideal was considered hypothetically by the author to better understand the differences among examined systems. The ideal system is a system, which gained the most possible attainable scores in each process and each series of actions. In each group of processes, systems gained the highest scores, are displayed as bold. Total scores of examined systems are more than 80% in compliance with the ideal system (see Table 2).

Comparing total scores of each system, Kowsar is placed at the 1st place and Yektaweb and the OJS together are placed at the 2nd place. Niloofar is another system placed at the 3rd place (See Table 2).

2. Compatibility of Systems Using Standard Deviation and Average

In order to investigate the compliance of examined systems with the research checklist and explore the rate of dispersion in system activity scores, standard deviation and average of features of systems in author role were calculated. It means that all capabilities and features of systems were integrated, and viewed as a whole system and was compared with the control group's (ideal system) score as an index of evaluation. This integrated system in fact could be a delegate of examined systems available in Iran in this field. According to Table 3, for the author role, the average of 91.33 and the standard deviation of 14.733 were calculated which was more than the half of the total score of the ideal system. Comparing with the ideal system as the control group, the dispersion is not high so it is perceived that all 6 systems in author role had similar capabilities to do proposed processes.

In order to make data more congener, the system making large differences in scattering data was removed (Manuscript Online) and the standard deviation and the average was calculated for 5 systems. By removing the

Table 4. Average and Standard Deviation after Discarding the Outlier

Role	Number	Minimum	Maximum	Average	Standard Deviation	Control
Author	5	83	104	96.60	7.956	109

Table 5. Zero Points of Systems in Author Role

	Author Role	
Row	**Process**	**Action**
1	Author Registration	Specifying alternate email address and contact information
2		Selecting desirable username and password
3		Indicating unavailability dates
4		Changing username and password
5		Supportive organization form
6		Selecting author`s own keywords describing the submission
7		Selecting author`s own keywords describing their area of expertise
8		Selecting form a publication-defined list of keywords describing the submission
9		Selecting form a publication-defined list of keywords describing author`s area of expertise
10		Access to author`s databank
11	Manuscript Submission	directing a copy of all manuscript correspondences to author`s email address
12		Suggesting or opposing a reviewer
13		Requiring authors to confirm the PDF file before final submission
14		Converting a variety of file formats in to a PDF file
15		Selecting article type
16		Entering metadata for figure files
17		Indicating an item will be submitted offline
18		Editing the manuscript prior to submission
19	Tracking Manuscript	Responding to reviewers (responses are recorded in the system)
20	Expenses	Processing publication fees through the internet
21		Receiving the confirmation note of processed fees by email or through the system
22		Receiving the receipt of processed fees by email or through the system
23	Instructions	System help
24		Downloadable instructional files

outlier, the system changes were reduced significantly and data became more homogeneous. As demonstrated below, the standard deviation calculated 7.95, which were almost half of the previous value. The new table of calculated average and standard deviation with presence of 5 systems and discarding the outlier is presented below at Table 4. By discarding the outlier point, the integrated system (all 5 examined systems) got closer to the ideal.

3. Systematically and Non Systematically Performed Actions

In order to find out which and to what extent actions and processes are performed systematically, the percent ratio of total system scores of 6 systems to total ideal system score were calculated. This ratio, called comparison index at Table 2, for the author role was calculated 84%, which means 84% of the expected tasks of the systems were performed systematically. In other words, 16% of the expected actions are not performed within the systems. To investigate non-systematically performed actions, the report of zero points was generated using Microsoft Excel 7. The Table 5 shows a series of different actions not supported by all or some of these 6 systems overall. In order to improve and strengthen the systems, the developers of each system were informed of their own specific zero points through a formal letter enclosing a summary report of the study.

DISCUSSION

Online submission and peer review systems reviewed in this study had most of the (84%) features at the author role. In this research, Kowsar was the system gained the most scores and placed at the 1st rank. Yektaweb and OJS both placed at the 2nd rank. A similar study which reviewed almost the same systems in Iran demonstrated different results [9]. At that research by Salimian, Yektaweb was evaluated and it was the system with the highest scores. Salimian did not evaluate the Kowsar system. It could be one of the reasons for the difference in results.

In terms of evaluation criteria for the standard checklist, there is consistency among the results of the researches by Abooyee Ardakan [5] and Sheikh Shoaie [6]. In terms of methodology, at Sheikh Shoaie's

research which is very similar to the current research regarding the study population, a questionnaire was developed and submitted to a panel composed of 15 referees, editor in chief, software designers and researchers. The essential features for the software were divided into three groups with populations of 10-15, 5-10 and 0-5 respectively. The majority of peer review process software features, in view of panelists, fell into a group of features with a population of 10-15. According to the research results, the features represented by the first group must be taken into account when designing or purchasing a peer review software. The second tier features (with population of 5-10] were recommended given journal's status and capabilities. The third tier features were altogether discounted due to low population [6]. However, in the present study essential features were not prioritized.

The present practical research would benefit a variety of stakeholders including system designers, researchers, editorial boards of journals, and journal publishers. System developers and designers may use the research checklist to evaluate themselves and standardize their system features. For those 14% journals who have not established an online system yet, this checklist would help in recognizing required features in author role, and evaluating and identifying the right system to apply.

This was an in-depth research and entailed all submission and peer review systems of medical and biomedical journals published in Iran and approved by the Ministry of Health and Medical Education of Iran and this broad range of population had not been studied before in previous studies. Another significant aspect of this study was creating a functionality checklist with Cronbach`s Alpha of 0.907 which could be as a primary base for identifying required tasks of online submission and peer review systems in author role.

CONCLUSION

The score differences of each system demonstrate at different systems some features were applied and some were not (examined systems were more than 80% in compliance with the research checklist). To meet required features at the author role it is important to apply all required criteria.

ACKNOWLEDGMENT

The authors would like to thank the companies (Yekta web Afzaare Shargh, IT Promotion Company of Iran, Health Researchers R&D Institute, Tehran University of Medical Sciences, Kowsar Publishing Company, and the open source, open access system called of the Public Knowledge Project) for their kind participation in this study. The authors declare that there is no conflict of interests.

REFERENCES

1. Ware M. Online submission and peer-review systems. *Learned Publishing* 2005, 18 (4): 245–250.
2. Hames I. *Peer review and manuscript management in scientific journals: guidelines for good practice*. Blackwell Publishing Ltd., United Kingdom, 2007.
3. Ware M. Authors say that they prefer online submission. *Nature* 2005, 434: 559.
4. Ware M. *Online Submission and Peer Review Systems: A review of currently available systems and the experiences of authors, referees, editors and publishers.* ALPSP, 2005
5. Abooyee Ardakan M, Mirzaie SA, Sheikhshoaei F. The Peer-Review Process for Articles in Iran's Scientific Journals. *Inf Process Manag* 2013, 28 (2): 305-46.
6. Sheikh Shoaie F, Husseini M. Essential Features for a Scholarly Journal Content Management and Peer Review Software. *Inf Process Manag* 2010, 25(2):289-315.
7. Willinsky J. Open Journal Systems: an exapmle of open source software for journal management. *Lib Hi Tech*. 2005, 23(4): 504-519.
8. McKiernan G. Web-Based Journal Manuscript Management and Peer-Review Software and Systems. *LHT News* 2002, 19(7):31-43.
9. Salimian F. *Identifying and Evaluating Capabilities of National and International Journal Content Management Systems. M.Sc. thesis*, University of Isfahan, Isfahan, Iran, 2010.
10. Blake M. Emerald introduces online article submission and peer review system. *Elec Lib* 2004, 22 (2): 208.
11. Pleyer U, Orlic N. Ophthalmic Research Moves Online for Submission and Peer Review. *Ophthalmic Res* 2005, 37(1):57-8.
12. Edelstein R. Online article submission and peer-review for The Journal of Gene Medicine. *J Gene Med* 2003, 5(6):449.
13. D'Ambrosia R, Kilpatrick JABAELS Orthopedics and Online Manuscript Submission. *Orthopedics* 2004, 27(1):10-1.
14. Ho RC-M, Mak K-K, Tao R, Lu Y, Day JR, Pan F. Views on the peer review system of biomedical journals: an online survey of academics from high-ranking universities. *BMC Med Res Methodol* 2013, 13(1):74.

Published online: July 9, 2014