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ELECTRONIC SEMINAR

The structure of electronic scientific seminar, which provides high-quality and unbiased evaluation of research papers, including thesis research, has been described. Conditions for the implementation of electronic scientific seminar have been considered.

Keywords: electronic scientific seminar, evaluation of scientific papers, Research Council, plagiarism in science, problems of science, and scientometrics.

Any research or scientific work submitted for defense is known to be evaluated at the workshops and seminars, with not only the research itself, but also their authors, and worthiness of awarding a scientific degree thereto taken into consideration. Moreover, the seminars and workshops dealing with defense of thesis research are deemed the venue to determine the future composition of scientific and research staff, even more, the future of the science. However, it should be noted that the existing systems of seminars and workshops have many shortcomings and disadvantages that do not enable addressing the required level of unbiasedness and quality of assessment of thesis research. Therefore, the electronic seminar system has been proposed to be implemented for the procedure of thesis research defense and for other research and scientific events where the research works are evaluated (award of grants, patents, etc.).

In researches [1, 2], the electronic research seminar system has been offered. It is based on Internet technologies, the electronic forum. The proposed system is easy to be implemented and has many advantages as compared with the conventional seminars, including improving quality, convenience, and unbiasedness of assessment of the works.

Among the principal capabilities of this system there are the following ones:

1. Computerized appointment of scientific board members having required qualifications for discussing research works, by creating a database of all researchers within the forum framework with their qualifications and scope of their activities indicated and by searching against this database according to the diagram on Fig.1. This option is computerized on the basis programs and algorithms for identifying similar files (see [3]), i.e. the text of research work to be evaluated and the texts of works included in the database. Upon the results, on the basis of optimal coefficients of similarity of the archived works and the work to be presented at the seminar the composition of scientific board is formed automatically: it will consist of researchers registered in the database and mostly experienced in the field of discussed research work. This computerized approach ensures an unbiased and independent selection of seminar scientific board composition, on the one hand, and simplifies the selection of the members, especially, in the case of extended database and numerous candidates.

2. Fast, flexible, and cheap way to involve foreign experts into discussing and voting via Internet. Hence, the database can include foreign researchers as well (Fig. 1) that is especially impor-

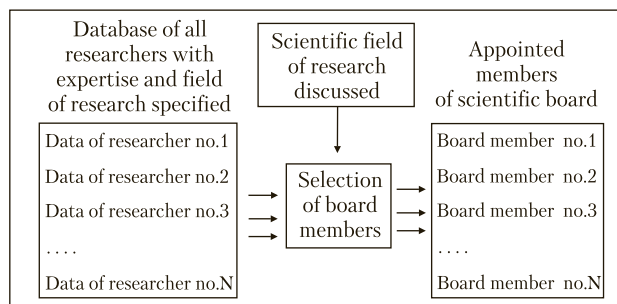


Fig. 1. Computerized composition of scientific board

Title of seminar, date, section	
Voting	
Worthy ● Unworthy ○ Abstain ○	
List of voting results with anonymous names To be filled in interactive mode in the course of voting	List of all board members with real names in the alphabetical order. To be displayed after completion of discussion and voting
Anonymoius name of board member no.5 – AYE Anonymoius name of board member no.3 – NAY Anonymoius name of board member no.1 – NAY Anonymoius name of board member no.7 – abstain	First and last name, other data of board member no.1 First and last name, other data of board member no.2 First and last name, other data of board member no.3 First and last name, other data of board member no.4
VOTING RESULTS OF THE SEMINAR	

Fig. 2. Page of results of anonymous voting

Title of the seminar/workshop, date, section	
Author	Title of research, subject, required materials (texts, photo, audio, etc.)
Reviewers	Peer reviews
Name of board member no.1	Opinion and questions of board member no.1
Name of board member no.2	Opinion and questions of board member no.2
....
Name of board member no.N	Opinion and questions of board member no.N
Author	Answers, comments
....
Voting	

Fig. 3. Discussion of research work

Electronic scientific workshop

Search

Categories

PHYSICS

MATHEMATICS

ASTRONOMY

BIOLOGY

MEDICAL SCIENCE

....

a

Physics

Search

Seminars

Seminar 1, title, date

Seminar 2, title, date

Seminar 3, title, date

Seminar 4, title, date

Seminar 5, title, date

....

b

Fig. 4. Classification of electronic workshop by categories (a); storage of all seminars in the single workshop library of the forum (b)

tant if in the country or region, there is a lack of experts in the field of research discussed.

3. Anonymity of discussion and voting of scientific board members is realized by assigning anonymous names to each board member who can have several such names (separately for discussion and for voting). In order to prevent any possibility of falsifying the results of voting the assigned name of each member who has voted is displayed on the screen randomized, immediately after the voting. In addition, at the final stage, after counting and announcing the voting results,

the list of real names and titles of board members is displayed on the screen that does not correspond to that of the anonymous names (for example, in alphabetical order, Fig. 2).

4. Clear and comprehensive presentation of the research work. Since the research seminar is held on Internet it is accessible in every site of the world where access to Internet is available, this enables extending the discussion for decision making. In addition, in the course of discussion, the answers, questions, and opinions of board members are kept in text format on the forum page (Fig. 3). Due to these two factors, the board members can better comprehend the essence and value of research work.

5. Transparency of discussion and voting results is ensured by realization of seminar on Internet.

6. Accurate recording of seminar minutes, since all answers and questions are consequently stored on the page of discussion (Fig. 3).

7. Creation of seminar library for all seminars and workshops within one forum system for quick and convenient access to seminar materials, since they are filed there (Fig. 4, *b*).

8. Prevention of similar thesis research within given system due to quick search against the seminar database. As a result, the plagiary works will be rejected. Algorithms for search of plagiary works against all Internet database can be added. This problems can be also addressed by centralized hierarchy and transparency of the system and by availability of large number of board members having expertise in the field of research discussed.

This system can be implemented for all scientific disciplines in one electronic forum divided by categories (physics, mathematics, biology, etc. Fig. 4, *a*). This unified system of scientific workshop allows the researchers of various spheres to get a quick and convenient access to the researches in different fields of science, which consequently will create additional favorable conditions for the development of multidisciplinary studies and surveys.

For ensuring unbiasedness and independence of electronic scientific workshop it is necessary to

create a system administered from the single independent center with unified standard implemented for all research institutions where the member organizations communicate with the center through Internet.

This system has been presented to the Center for Strategic Research of Azerbaijan that gave a positive feedback and recommendations on the implementation of the system. For ensuring the effective operation in the course of its creation all above mentioned options should be realized. The electronic scientific workshop system can be implemented both as substitute for and in addition to the conventional seminars. For example, the electronic workshop system can be used for preliminary defense, while the final defense can be realized in conventional way. In this case, the level and quality of thesis research submitted for the final defense will improve significantly.

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ЕЛЕКТРОННИЙ НАУКОВИЙ СЕМІНАР

Наведено структуру й схему організації електронного наукового семінару, що дозволяє забезпечити високий рівень якості та об'єктивності роботи семінару при оцінці наукових праць, зокрема дисертацій. Розглянуто також умови реалізації системи електронного наукового семінару.

Ключові слова: електронний науковий семінар, оцінка наукових праць, наукова рада, плагіат у науці, проблеми науки, наукометрія.

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ЭЛЕКТРОННЫЙ НАУЧНЫЙ СЕМИНАР

Приведены структура и схема организации электронного научного семинара, позволяющего обеспечить высокий уровень качества объективности при оценке научных работ, в частности диссертаций. Рассмотрены также условия реализации системы электронного научного семинара.

Ключевые слова: электронный научный семинар, оценка научных работ, научный совет, плагат в науке, проблемы науки, наукометрия.

Received 02.06.15