Electronic Chemistry Conferences: 7 Years of CONFCHEM

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Received August 14, 2001

Between the summer of 1993 and August 2001, members of the ACS Division of Chemical Education's Committee on Computers in Chemical Education (CCCE) managed the online facilities for 17 online conferences. One more conference will occur during fall 2001, and several additional conferences are planned for the future. This article describes the history and the nature of these online conferences, including the advantages and disadvantages of the online format.

INTRODUCTION

During the summer of 1993 Tom O'Haver organized the first CHEMCONF online conference sponsored by The American Chemical Society Division of Chemical Education's Committee on Computers in Chemical Education (CCCE).[1] Four hundred participants used Listserv e-mail to discuss 15 papers, which were available on FTP and Gopher servers. Since then, members of the ACS Division of Chemical Education's Committee on Computers in Chemical Education (CCCE) have managed the online facilities for 16 subsequent conferences. The conferences have varied in topics and formats but have usually focused on topics concerning chemical education or scholarly issues. CCCE members or other volunteers have organized or chaired the conferences, selected a topic or focus, recruited authors, set a schedule, publicized the conference, and stimulated discussion.

Participation has varied between 500 and 900, and the frequency of the online conferences, now called CONFCHEM, has expanded to several per year. The name of these online conferences changed from CHEMCONF to CONFCHEM (Conferences on Chemistry) in 1998 when the Listserv administration changed from the University of Maryland to Clarkson University. Although papers are now delivered via the Web, discussion continues via a Majordomo e-mail list so that the conferences are accessible to the largest possible number of participants.

NATURE OF THE ONLINE CONFERENCES

The papers and other information are available on the CONFCHEM Website (http://www.ched-ccce.org/confchem/). Discussion occurs on the CONFCHEM Majordomo list. To participate in the discussion it is necessary to register on the CONFCHEM Majordomo discussion list. No registration fees are charged. A typical conference has registrants from over 40 countries. The conference organizers set a schedule for the conference, and papers are posted on the conference Web page before the beginning of the conference. Papers may consist of text, figures, references, links to other Web-based materials, multimedia animations, video audio clips, and Java applets. In the past, several authors corrected or added to their paper during the conference discussion. The papers are not modified after the conference ends, except for minor corrections such as removing broken links, and the authors retain the copyright of their papers. A survey of the Web server access logs show that archived papers will be accessed from 0 to approximately 30 times per week. Unlike abstracts of papers presented at National ACS meetings, neither the abstracts nor papers are indexed by the ISI citation database.[2]

Table 1. Number of Messages for Several Recent CONFCHEM Conferences

CONFCHEM	week or paper	number of messages[a]
Summer 2000	week 1 (3 papers)	94
	week 2 (2 papers)	52
	week 3 (3 papers)	53
	week 4 (general discussion)	56
Fall 2000	paper 1	11
	paper 2	14
	paper 3	42
	general discussion	15
Spring 2001	paper 1	37
	paper 2	10
	paper 3	4
	paper 4	32
	paper 5	16
	general discussion	19

[a] Administrative announcements are not included.

Papers are discussed individually or in groups via the Majordomo CONFCHEM Discussion List. Participants are expected to have read each paper prior to the beginning of discussion of that paper. Participants are often given the opportunity to ask short questions of the author(s) or other conference participants prior to the beginning of the discussion of the paper. Similarly, authors may ask questions of the conference participants either in their papers or during the discussion. Any message sent to the list is distributed to all registrants via e-mail, usually within 20 min. Discussion of each paper may occur over a few days or a week. Table 1 lists some discussion activity for several recent online conferences. The Fall 2000 conference scheduled Friday for submission of short questions for the author and the following Monday through Thursday was reserved for the author's

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10.1021/ci010082q CCC: $22.00
Published on Web 12/14/2001

Table 2. Past CHEMCONF and CONFCHEM Online Conferences[a]

June 14−Aug 20, 1993	Applications of Technology in Teaching Chemistry. Organized by Tom O'Haver
Oct 11−27, 1995	Faculty Rewards: Can We Implement the Scholarship of Teaching? Organized by Arlene Russell and Michael Pavelich
June 3−July 19, 1996	New Initiatives in Chemical Education. Organized by Donald Rosenthal and Tom O'Haver
June 1−Aug 1, 1997	Online Chemistry Education Conference. Organized by Donald Rosenthal and Tom O'Haver
Jan 16−May 1, 1998	Online Conference on Chemical Education. Organized by Donald Rosenthal and Tom O'Haver
Sept 1−Oct 31, 1998	Switching Students on to Science. Organized by Hugh Cartwright
Feb 15−March 2 1999	Chemical Demonstrations Trial Session. Organized by Oliver Seely and George Wiger
Mar 29−April 10, 1999	Proposals For Change in the Introductory Chemistry Course. Organized by James Spencer
May 28−July 1, 1999	General Papers in Chemical Education. Organized by Don Rosenthal
July 2−Aug 19, 1999	Distance and Collaborative Education Using the Internet. Organized by Brian Tissue
Sept 7−Oct 15, 1999	What Should Students Know When They Leave General Chemistry? Organized by Paul Kelter
Oct 31−Dec 3, 1999	Teaching Spectroscopy. Organized by Scott Van Bramer
April 3−May 5, 2000	The Role and Nature of Research by Undergraduates in Chemistry. Organized by Tim Champion and Willis Weigand
May 12−June 6, 2000	The Use of Computer Simulations in General Chemistry. Organized by Denis Bussières
Oct 6−Nov 3, 2000	Assessment of Model Creation and Use by Chemistry Students. Organized by John Oversby
Mar 28−April 20, 2001	Lecture Demonstrations in Chemistry on the World Wide Web. Organized by Oliver Seely and George Wiger
July 6−July 31, 2001	Environmental and Risk/Benefit Issues in the K-12 Science Classroom. Organized by Elizabeth Kleppinger

[a] The archives page of the CONFCHEM Website (http://www.ched-ccce.org/confchem/past.html) provides links to the individual conference Web pages, which contain the links to the papers and discussion archives.

Table 3. Future CONFCHEM Conferences[a]

Fall 2001	Online Teaching Methods. Organizer: John H. Penn
April 2002	Undergraduate Research. Organizers: George Long and Pam Mabrouk
June 2002	Problem Solving in Chemistry. Organizers: Doug Cameron and Peter Lykos
Oct−Nov 2002	Teaching Safety in High Schools, Colleges, and Universities. Organizer: George Wahl
Spring 2003	Non-Traditional Methods: Teaching methods other than lecture and assessment of these methods. Organizers: George Shalhoub and Gabriela Weaver

[a] The schedule page on the CONFCHEM Website (http://www.ched-ccce.org/confchem/schedule.html) provides a list of future conferences and calls for papers.

replies and discussion. The Spring 2001 conference was similar but scheduled 1 day for submission of short questions and 2 days for subsequent discussion.

The variety of topics and formats has expanded since the first CHEMCONF. A particular conference may have a specific theme like "What Should Students Know When They Leave General Chemistry" (Fall 1999) or consist of "General Papers in Chemical Education" (Summer 1999). Recent CONFCHEM conferences have altered the traditional "paper" presentation and include Web-based multimedia demonstrations[3] and a discussion of proposals from the DivCHED Task Force on the General Chemistry Curriculum.[4] The exact format depends on the chair and organizer of the particular conference and upon the authors of papers. Tables 2 and 3 illustrate the variety of conference topics and the duration of past conferences.

Registrants may opt to receive individual messages as they are sent to the CONFCHEM Majordomo or digests of the messages. Digests are sent once per day during the conference and contain all messages received during the previous 24-h period. Since May 2000, the e-mail discussions have been archived by the Majordomo system, which makes it much easier to search or browse the discussion.[5] The e-mail discussions were previously archived as text files. With the Majordomo archives, the discussion may also be monitored without registering for CONFCHEM.

Frequently, time is scheduled at the end of a conference for general discussion. This may involve further discussion of the conference theme, or it may be wide-ranging. Generally, 5−10% of the participants fill out and return an information and evaluation form at the end of the Conference. Two main results from past assessments have been to keep the conference discussion based on e-mail and to encourage authors to keep the main body of their papers readable with only a Web browser. These policies maintain the widest accessibility and availability.

SIMILAR CONFERENCES

This paper does not attempt to contrast the CONFCHEM conferences with all types of Internet resources. Information about the broader history of Internet usage and a survey of different types of online resources is available from various sources.[6−9] We do note several other online conferences. The Electronic Computational Chemistry Conference was first held in November 1994 and had its seventh conference during April 2001.[10] Similar conference series include four occurrences of the Electronic Conferences on Trends in Organic Chemistry between 1995 and 1998[11,12] and The International Electronic Conference on Synthetic Organic Chemistry, which has occurred each September since 1997.[13] These online conferences take a different approach compared to CONFCHEM. They are structured like traditional conferences or poster sessions. And contain one to several broad sessions with a number of submissions in each session. Participants may read the papers and then may submit questions to the author using an e-mail based discussion board. This format allows for a larger number of papers, but it does not appear to stimulate as much discussion as the CONFCHEM format. These conferences have addressed the archiving and abstracting by making the proceedings available on CD-ROM or through a publisher. A related online venue is the VEI Virtual Lecture on the ChemWeb

Website.[14] The purpose of this site "...is to present a series of virtual lectures and product demonstrations". The events include a whiteboard and online forum and are subsequently archived.

ADVANTAGES AND DISADVANTAGES

Online conferences are different from one-site conferences. The CONFCHEM structure has advantages and disadvantages when compared to the conventional conference.

Advantages. 1. Papers are usually longer and more detailed than at regular conferences. The suggested minimum length is the equivalent of 10 typewritten pages. Papers may contain supporting documents, hyperlinks, and multimedia materials. The papers are also available shortly after preparation without administrative delay.

2. Authors have an opportunity to present their papers to an audience of between 500 and 900 registrants from over 40 countries.

3. Discussion extends over a number of days and can be much more extensive than at one-site conferences. Discussion occurs between participants as well as between author and participants and can be either public via the list or private via e-mail.

4. The quality of discussion can be better because authors and participants have time to carefully consider, prepare, and research their messages and to provide citations.

5. Registrants and authors can participate from work, home, or elsewhere.

6. The time and expense of travel and other costs are avoided.

7. Because travel is not required, conferences can be scheduled at times which otherwise would not be feasible.

8. Authors have an opportunity to obtain substantial feedback before submitting papers to a journal.

9. Discussion is asynchronous; authors and registrants do not have to be present at a particular time.

10. This is a good way of exchanging ideas nationally and internationally at very little cost to the participants.

11. People with physical handicaps can more easily participate.

12. Papers and discussion are archived on the conference Website and can be accessed at a later date.

Disadvantages. 1. It takes a lot of time to read a paper and all the messages.

2. Conferences may last from a few weeks to 3 or 4 months. Some participants object to the length of some conferences and the large number of papers presented.

3. In the current format, messages are not monitored before they are distributed to registrants. Participants and/or authors do not always respond appropriately to questions from authors and other participants.

4. Following the different conversation threads can be confusing, and some discussion messages are too long, repetitive, and irrelevant.

5. Some participants do not have the necessary software or hardware to view multimedia materials.

6. In the current format, no simultaneous sessions are scheduled, and fewer papers are available to choose from than at most one-site conferences.

7. Some participants prefer to travel and speak in person to authors and other participants.

8. Since papers are not abstracted, they are not incorporated into the traditional scientific literature. This may be a disadvantage for some authors since traditional search methods will not find the conference papers.

SOME CONCLUSIONS

We anticipate that CONFCHEM will continue in its current form. We believe that CONFCHEM fills a valuable niche in the chemical education community, providing in-depth discussion of papers or issues, without the need to travel to a regional or national conference. The online conferences are different from one-site conferences with unique advantages and disadvantages. The variety of schedules seem to work equally well in terms of discussion activity, the quality of the papers, and the stimulation of discussion by the organizer(s). Five conferences were held during 1999. This resulted in less discussion by the end of the year, suggesting that this number of conferences was too many. The success of a CONFCHEM conference depends very much on the topic, the quality of the papers and discussion, and the conference organizer.

We wish to solicit comments and suggestions from readers of this article. To suggest topics for conferences or papers or to volunteer to organize and chair a session please contact any of the authors of this paper or the CONFCHEM organizers as listed on the home page.

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CI010082Q