Research Notes

Encouraging Research through Electronic Mentoring: A Case Study

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In 1991 the Association of College and Research Libraries (ACRL) Research Committee established an experiment using electronic mail to create mentoring relationships focusing on library and information science research. This article reports on that experiment's progress to date and includes first-hand accounts of participants' experiences.

An innovative experiment in electronic mentoring that utilizes the Internet and listserv software is entering its fourth year. A small group of librarians is using these relatively new technologies to extend the traditional boundaries of mentoring and the recent paradigm of network communication in the field of library and information science (LIS). The project, sponsored by the ACRL Research Committee with technical support from New Mexico State University, aims to get more professionals involved in LIS research by engaging them in discussions with mentors and fellow protégés on a variety of research topics and issues.

Project goals include: introducing mentoring activities to the network environment, expanding the scope of network/listserv forms of communication, getting more LIS professionals involved in research, encouraging improvements and diversification in the research skills of LIS professionals, and expanding communication within the LIS research community.

GENESIS OF THE PROJECT

The project began with a conference program titled "Mentoring and Academic

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Research: Using Bitnet Conferencing to Encourage Research," which took place at the 1991 American Library Association (ALA) Annual Conference in Atlanta. Helen Spalding from the University of Missouri-Kansas City spoke about the one-on-one, face-to-face mentoring tradition, and Vicki Gregory from the Division of Library and Information Science at the University of South Florida discussed the possibilities for electronic mentoring. Program participants received a handbook containing program abstracts; guidelines; technical information; a network directory; and a selective bibliography on mentoring, LIS research, and electronic networks. Mentors and protégés were given the opportunity to get to know one another, exchange ideas, and discuss the potential for this program. After the Annual Conference, program participants returned to their locations to begin this unique experiment in electronic mentoring.

PROJECT DESIGN

The Research Committee divided the participants into six groups centered around broad topics within the field of library and information science research: bibliographic control, collection management, expert systems, library effectiveness, scholarly communication, and understanding the user. Each group was composed of one or more mentors, a group of protégés, and a member of the committee who functioned as liaison and facilitator. A listserv discussion group list was reserved for the use of each group. Mentors and protégés used the electronic mail facilities at their institutions to send messages to their list. The listserv software redistributed all incoming messages to everyone in the group.

EXTENDING THE BOUNDARIES OF MENTORING AND NETWORK COMMUNICATION

The electronic mentoring project has attempted to extend the traditional practice of mentoring by creating small groups of mentors and protégés and a nationwide network of people interested in the same area of research in library and information science. Realizing that the local pool of active researchers in LIS research is small, the committee hoped that nationwide communication among beginning researchers would encourage more professionals to take the research plunge.

Although a much more recent phenomenon than professional mentoring, network communication using the Listserv software and national educational communication networks also has developed "traditional" patterns and accepted norms. Traditionally, the listowner announces the subject area for discussion, in addition to technical information on how to subscribe and post messages. The listserv list then functions as a type of high-tech forum or speaker's corner. Typically, a relatively small group of people are inclined to conduct the majority of the discussions, moving from one topic to the next within the given subject area, while many more subscribers read the postings. This tendency is typical of many forms of communication, information transfer, and business inventory, and it exemplifies the so-called 80/20 rule.* In this context, the rule can be stated as follows: "Approximately 80 percent of the postings are made by 20 percent of the total potential participants." In light of the 80/20 rule, the Research Committee intentionally kept the number of members of each group between twelve and twenty-four in order to increase the likelihood that each participant would become actively involved in the discussion.

REPORT ON ACTIVITIES

During the first year of the pilot project, total message traffic for all groups averaged slightly over one message per day. The LIS Research Understanding the User (LISRUU) group was the most active, and

* For an example of the application of the 80/20 rule to a library setting, see Richard Trueswell, "Some Behavioral Patterns of Library Users: The 80/20 Rule," Wilson Library Bulletin 43 (Jan. 1969): 458–61.

the general consensus was that it also was the most rewarding for the participants. Unfortunately, it was the only group to continue after the first two years, for reasons that will be discussed later, and, therefore, most of the remainder of this article focuses on the experiences of the LISRUU group.

Surprisingly, the number of individuals who contacted the listowner with technical questions was small, although a few problems did occur during the early stages of the project. Two months into the project's first year, the listowner changed institutional affiliations and network nodes. This not only created confusion with individual messages to and from the listowner, but it also necessitated reconstructing all of the lists. Once the technical glitches were fixed, concerns and complaints expressed about the project were human-based.

In essence, it is possible that electronic communication puts all the communicants on an equal footing—and, while it allows them to respond spontaneously, it also enables them to take time composing messages when more thought-out responses are desired.

Participants found that the project affected them in a variety of ways that could not be achieved in more traditional mentoring relationships. Few of the former or continuing participants are from the same institution. This allows protégés the freedom to explore topics without the interference that local political concerns might cause. The role of the mentor is also less likely to be as pivotal to the protégés' progress, especially in tenure-track situations. While mentors' opinions particularly were solicited in several cases, protégés also offered insights by relating similar experiences, concerns, and suggestions for the research topics discussed. In essence, it is possible that electronic communication puts all the communicants on an equal footing—and, while it allows them to respond spontaneously, it also enables them to take time composing messages when more-thought-out responses are desired.

Participants are also limited to the written word in expressing their ideas, intent, and criticism. Restating a posting is not uncommon after responses are received, which demonstrates how an intended meaning can be misconstrued. Composing clear and careful postings about a research project is good practice for writing up the results of that project when completed. The dynamic interactions of any group of people brought together for a common purpose also add to the group process in accomplishing a task. As well as the participants getting to know each other through posted messages and statements of research interests, the asides about personal situations create a trusting, supportive atmosphere in which even the most hesitant researchers can bounce ideas off each other. In just over a year, various members of the LISRUU group experienced a severe budget crisis, a tragic death, a marriage, and a birth. While these happenings were not explored at length (and in fact, were mentioned only briefly, usually to explain long absences or temporary unavailability), they are a part of life and can interrupt research endeavors. In a group setting, other members can be relied on to "carry the ball" until the group as a whole can be reestablished.

The patterns and discoveries discussed in the foregoing summary of activities will be explored further in the words of the LISRUU participants in a later section of this report. Unfortunately, not all of the groups could overcome the hurdles of electronic mentoring; only one group survived. The researchers offer several speculations to explain the failure of the other groups.

When the ACRL Research Committee began setting up the electronic mentoring project, the primary focus of attention was on the listserv software as a new communication device, rather than on the history of mentoring in the LIS profession and the possibility for future developments. The technical feasibility of

the project drove its development, with an assumption that the human element would take care of itself. The electronic mentors were not briefed adequately on the anticipated duties and responsibilities offered by this new experiment. Some of the mentors may not have realized that for this project, unlike in other forms of communication via listservs, they would need to elicit participation delicately from a majority of the protégés. The protégés, in turn, may not have understood their responsibilities. Further, the need to minimize the number of protégés per mentor had to be balanced with the need to have enough people in each group to sustain a discussion group. Finally, the introductory program's crowded and noisy environment was not conducive perhaps to the birth of lasting mentor-protégé relationships.

Once the groups formed, several factors and events may have worked against the continuation of most of them. The technical problems encountered early in the project have been mentioned. Another factor may have been poor matches between mentors and the groups of protégés. Although we have no evidence to support this hypothesis, some of the mentors and protégés may have forsaken the electronic group projects in favor of a more traditional mentoring relationship. Ultimately, the failure of most of the groups may have been due to the unfamiliarity and instability inherent in a national professional association overtly fostering a new kind of mentoring activity in an electronic network environment.

THE EXPERIENCES OF LISRUU

In the early stages of establishing the pilot project, the LISRUU group encountered various difficulties. Once the aforementioned technical problems were ironed out, the group struggled for an identity and an understanding of the respective roles of the mentor and protégés. There was uncertainty as to whether the mentor should prepare the equivalent of lessons and lectures or simply respond to protégé inquiries about how to go about doing research. After much discussion, as well as long periods of silence, participants decided in the fall of 1991 that a simulated research project for the group would be the most useful way to proceed since all members would learn from each other's thoughts, and the work of the simulated project could be spread out among several people. The group discussed various research projects, but one member (who shall be referred to hereafter as the principal investigator) indicated she wanted to survey the patrons of her library to compare their evaluations of two types of interlibrary loan service offered at that library. Thus the simulated project addressed a real-life issue involving patron satisfaction levels.

The mentor made it clear early on that he intended the protégés to do the work so that they would get as much first-hand experience as possible. The mentor would help answer difficult questions, guide the group away from pitfalls, and suggest areas that should be addressed or investigated. The principal investigator provided background information about her institution, library services, and patrons, and specifics about the two types of interlibrary loan service offered—traditional ILL and a method for patrons to send their own ILL requests electronically to other libraries within the state. The group then discussed hypotheses and methods for testing those hypotheses. The principal investigator prepared a draft of questionnaires to be given to the users of the two ILL services, and the group critiqued the drafts. Program participants performed a pretest of the instrument in order to identify any necessary refinements before conducting the actual survey.

Thus, the LISRUU project grew out of the several protégés' comments that their biggest research problem was simply getting started. In early discussions, it became apparent that the idea of conceptualizing and implementing an entire research project was daunting. The spontaneous and informal style of daily electronic communication helped group members get to know each other, and together they began to break a research

project into its less formidable components.

Responsibility for developing the framework for the study and the first draft of the survey instrument fell largely on the principal investigator, but the group's contributions were substantial and thoughtful and had a great impact on the direction of the project. Designing and pretesting of the questionnaire, determining the population to be surveyed and the method for distributing the questionnaire, selecting the time frame in which the survey was to be carried out, and deciding how to encourage people to complete the questionnaire were discussed enthusiastically by the participants. One protégé contributed the literature review, and another adapted the survey for use in her own institution.

The LISRUU participants recorded the following evaluations of and responses to their experiences in the project:

Member A

> In the beginning I volunteered to participate in this project because I'm in a library in a major research institution where research is an expectation of librarians who want to advance. Even after two master's degrees, I have not learned how to do original research and have no one in my library with time and willingness to mentor me. I want to learn to do this properly, I have electronic access, and I thought this might be a way to learn.
>
> But I had no idea of how electronic mentoring was supposed to work or what I was supposed to do. The set up of a listserv was entirely new to me, and I thought I was doing something wrong because the messages I sent to the list were returned to me as undeliverable. As I read postings, I realized there were some problems outside of my immediate electronic environment that someone with technical expertise would straighten out.
>
> When those problems were ironed out, the next challenge began. The postings to the list seemed to be indicating that we had research projects individually under way and yet I had no clue how or where to start. I was really lost and disappointed, but too ashamed to admit that I was so ignorant.
>
> The breakthrough occurred when the mentor took the initiative to suggest working together on a learning project. To my relief I realized that I wasn't the only one out there who knew very little of how to approach this challenge. The brainstorming resulted in several ideas for research projects that were simple enough for beginners, and I was happy to think that I would really learn.
>
> The decision to begin with an ILL survey gave us a direction. Others on the list with some experience at this began to contribute citations to resources on how to develop a questionnaire, perform the survey, and analyze it statistically. Others read the citations and summarized them faster than I was able to get my hands on them. I kept a file of all the citations, thinking that if I ever got time, I could go back and read and learn more. I know I would never have known these resources on my own.
>
> Then we began to write the questionnaire. I contributed comments on the layout and content along with others. Then the ACRL Conference in Salt Lake City came along, and it presented an opportunity for two of the protégés and the mentor to meet in person. At that meeting we discussed the questionnaire further, and I could see I was among colleagues more experienced than I at this. My contribution was small by comparison to theirs, but it was not undervalued. The best part of that meeting for me was that these people became real persons with faces and personalities, and, thereafter, electronic communications with them were more enjoyable for me.
>
> The questionnaire took on life after that and, after a couple of more revisions, was in its final form. At the next ALA Annual Conference we met again, and I met both the listowner and the project member who had initiated the idea of the survey. At that meeting we realized that the original group of

realized that the original group of nineteen who had been on the list had shrunk and that we were the only listserv that had maintained activity since the start. I feel lucky to have been with this group, where real mentoring and learning have been taking place for me. I'm looking forward to continuing this experience and am hopeful that I will eventually learn to do meaningful research that can contribute to the profession.

Member B

I was excited when I read the announcement about the formation of the ACRL electronic research mentoring groups. I immediately responded. Just choosing which group to join made me focus on what really interests me in our profession. I have come to realize that we probably all think we understand our users better than we do. I [am glad] I picked the "Understanding the User" group because it has met my needs.

Our mentor does a fine job of leading the group. He lets the group decide what concepts members want to learn and what projects to tackle. He prods us to keep moving, notes problems that we may encounter in research, and spreads out the alternatives for us to study in order to reach a solution. He has taught us a great deal about doing research. In addition, he has suggested sources to read and articles to discuss and given me professional development advice.

Being in this group has given us experiences that go far beyond learning to do survey research. Being associated with LISRUU has affected my attitude toward the library profession, my role in my library, the needs of our patrons, and my desire to learn more about them. Many aspects of my life have been changed by my membership in this group.

Being part of this research group motivated me to take a class on survey research from the sociology department. I also plan to take another one taught by the business department with a marketing emphasis. Between this list and the class I took, I feel I have the basic tools and understanding to design a survey.

My interest in users and their needs prompted me to participate in a week-long total quality management (TQM) workshop. This led to more opportunities for networking. I contributed the bibliography for the class and made a presentation on TQM in Higher Education. It was a good experience for me to get acquainted with the professors who team-taught the class. Their expert teaching methods made them role models for me.

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The contacts I have made are just as important as the knowledge I have gained. Both the group mentor and the professor of the class would likely be willing to critique a research proposal, look over a survey, etc. I recall that someone who is good with statistics is on the list, and I could possibly ask him or her for help too. I have found that I really enjoy networking with colleagues from around the country. The members of the group are supportive and willing to share their ideas. An electronic research group is a good way to network with other academic librarians who are also feeling the pressure to publish and get help from someone who knows the ropes.

I still feel a bit threatened by the idea of writing an article and submitting it on my own, but I feel comfortable contributing to LISRUU and getting feedback from the group. I have plans to write an article on our library's liaison program and try to get it published. I plan to send it out to the group for critique. I am also thinking of doing a poster session on this program at ALA and will ask colleagues in the group

who have done poster sessions in the past for advice.

This summer I transferred from the cataloging department to the reference department, and this decision to change course was motivated by being part of LISRUU. I realized that the environment in the cataloging department wasn't conducive to doing research, and I eagerly sought contact with library users. Being a part of LISRUU has had a strong influence on what I have read, what I have thought, and where I find myself today.

Principal Investigator

When I first joined the ACRL electronic mentoring project, I had a research topic in mind that I wanted to investigate. I believe that expert systems have the potential to greatly impact interlibrary loan and document delivery. Unfortunately, I knew little about the capabilities, types, and possibilities for expert systems. I also realized that end-users as self-determining consumers might have different expectations than traditional ILL patrons for whom library staff mediate. While I needed some technical education about expert systems, I also wanted to explore user behavior in an automated resource sharing environment.

The owner of the listservs agreed that my research interests were interdisciplinary, and he allowed me to join both the Expert Systems and the Understanding the User groups. The technical expertise in the Expert Systems group was pretty daunting, but the members seemed willing to educate the uninitiated. When I later sat down with the Understanding the User group, I found them to be very congenial and to have a wide variety of research experience.

There was a fair amount of activity on the Expert Systems group's list in the beginning. Several people, including me, asked some fairly low-level questions and were referred to basic texts. Several people on the list who were beginners were encouraged to purchase a basic ES software package. At this time, there was simply no budget for me to buy this software, and it was highly doubtful that I had enough memory in my computer to run it.

Right from the beginning, I felt pretty "at home" on the LISRUU list. I never knew who the mentor was until I had been on the LISRUU for a few months, and he happened to mention it. I did, however, notice right away that he was a natural leader and that he tended to focus the group. There have been times when he has sat back and let us contribute and help each other, and I think that has been an effective technique. After all, we are librarians. We can usually find appropriate citations about any given aspect of research, as well as the evaluative materials that support its being one of the best citations. Although I believe that studying research techniques and recognizing good research are the keys to setting the standard that your own research must meet, the most dynamic part of this project has been sharing our individual ideas and insights with the group.

It was gratifying when my project became the group project, but I have also felt selfish, wanting to be the decision-maker and maintain control of it. But this turned out not to be a problem after all. I am certainly free to reject advice offered, but I find that if I really consider it, it is very good (and I cannot think of anything I have rejected so far). The ideas and help have contributed greatly to guiding and shaping the project. I found it a little off-putting that some people were not enthused about doing a survey involving ILL patrons. I do not have a problem recognizing that it is not everyone's cup of tea, but then I feel that I am doing it, and it should be okay if everyone on the list is not. I am afraid maybe some people dropped off or lost interest in the list at the point we decided on the ILL project. Because the automated environment for which the survey is designed is unique, the survey is not replicable,

with constructive criticism and a good place to bounce around ideas. For example, there is no better double-check for jargon than showing the surveys to someone who does not work in ILL every day. It really helped me decide what to clarify and what to omit.

Within the last year I developed a lot of guilt over this project. For a variety of reasons I was not able to give it enough time, and I was afraid I was causing the group to lose momentum. I am grateful that another protégé has begun sharing the development of a survey project in which the group is interested. I have been able to follow her research project with the rest of the group for the last few months while my own efforts simmer on the back burner. It is best for others to have projects as well, so that the forward motion of the group does not depend on one person.

Mentor

One of the sources that the ACRL Research Committee suggested we consult was Jennifer Cargill's article "Developing Library Leaders: The Role of Mentorship," which appeared in the Winter 1989 issue of *Library Administration & Management*. Cargill describes a mentor's responsibilities when guiding a protégé within a typical library or professional association. The responsibilities of a mentor in an electronic environment are much the same, but naturally the lack of face-to-face communication creates challenges that are not often found when the relationship exists within the same institution.

Cargill says that a mentor should be a developer of skills and of careers, a promoter of professional activities, and a counselor. I have found that much of an electronic mentor's efforts in those directions tends to be general and only sometimes specific to individuals because of the public nature of listserv communication. As in a traditional classroom, communication is shared among all participants for the purpose of learning together. While this approach has obvious advantages, the biggest drawback is that it can inhibit honest and critical examination of individual protégés' research background and experience. Such discussion may need to be moved off of the list and handled privately.

The development of a true mentor-protégé relationship can also be hindered by the fact that e-mail is less personal than direct communication. The lack of nonverbal cues and lack of tonal inflections are examples of what is lost in electronic communication. But what is a problem for some can be liberating for others: some people find that the lack of face-to-face contact in electronic communication makes it easier for them to confess ignorance or ask questions they fear are naive.

The greatest frustration I have encountered has been the difficulty of gauging whether my messages are being understood. In face-to-face discussions, a blank expression can be an indication that the listener does not understand the point being made. In the electronic environment, silence in response to a posting may mean any number of things: people are mystified, people have not read their e-mail in several days, people are uninterested, etc. It is very important that electronic mentoring participants agree on certain protocols, so people know whether their postings are making their desired point. Acknowledgment of messages, even when no substantive response is made, goes a long way toward eliminating frustration and uncertainty.

Originally I expected that we would spend much time examining specific research questions and ideas raised by the protégés. However, the protégés were reluctant to express what others might regard as naive questions, and they were more interested in pursuing the group research project as a means of gaining some familiarity with all aspects of one type of research. Nevertheless, some of the most interesting and informative interactions have been separate from the group

have been separate from the group project. The LISRUU group has engaged in philosophical discussions inspired by research articles or queries about particular research methods. Readings have been suggested and topics introduced from time to time to generate participation, and such efforts have not always been initiated by the mentor. Protégés are taking an active role in furthering the direction of the group and stimulating discussion. Some of the topics that have been discussed by the LISRUU group have been differences between pure and applied research, campus policies relating to human subjects research, techniques for generating ideas, the process of writing and applying for grants, and making time for research in the midst of busy schedules.

All of the foregoing leads to the question of whether the LISRUU experience represents a true mentor-protégé arrangement. We believe it does qualify as a special kind of mentoring because we have done what Cargill describes in her account of the classic mentoring model. Nevertheless, some may think that the lack of regular face-to-face contact precludes mentoring in the classic, full sense of the term. It is also true that my original expectation of playing a largely reactive role (which has proven to not be the case anyway) may not be entirely consistent with what is typically expected of a true mentor. However, even if our experience does not appear to qualify as true mentoring to some, the LISRUU participants continue to use the mentor-protégé terminology. Why?

While granting that electronic communication among remotely–located participants is inherently more limited than the communication between a mentor and protégé who work in the same physical location, the LISRUU participants do not believe that alternative descriptions of their experience (e.g., electronic research tutorial) are adequate—as one participant put it, the perception that the so-called mentor was a mentor influenced the way in which the others asked questions and sought advice about many professional and personal matters, many of which were unrelated to research. In short, the lack of an adequate alternative description led the LISRUU participants to honor their founders by continuing to use the electronic mentoring model that the Research Committee envisioned. If we have not achieved the goal yet, we will keep trying. I think our group has made creditable progress, and I have enjoyed working with stimulating and fun colleagues. I hope others will get involved in electronic mentor-protégé relationships. However, I offer a final word of caution to those who do. Electronic mentoring can be sporadic and is effective only when the protégé makes time to report activities fully, not selectively. Thus, more than anything else the electronic mentor should have patience and perseverance.

CONCLUSION

As the electronic mentoring project enters its fourth year, it is making the transition from experiment to establishment. The project's first two goals largely have been accomplished: a special kind of mentoring has been introduced to the electronic network, and the scope of network forms of communication has been expanded. Retaining the terminology of the ACRL Research Committee and the experimental nature of this project led to flexibility in redefining *mentor* and *protégé* in the context of network/listserv forms of communication. Electronic mentoring developed somewhat differently than the classic concept of face-to-face mentoring.

Originally, it was expected that mentors would respond to specific questions related to research interests and projects. Then the mentors and other participants would offer suggestions, ideas, and questions that would generate discussions about research in general, as well as guide the original inquirer with his or her project. Instead, group members were unfamiliar with the venue, research techniques, and terminology so that most

participants had difficulty articulating their interests and research ideas.

We discovered that electronic mentors need to be prepared to spend time initially establishing trust among participants and ground rules for participation. Participants should be encouraged to develop a pattern of regular posting. The mentor will need to break long silences by reviewing what the group was doing and discussing, and proposing provocative ideas, suggestions, and questions to kick start the group into renewed participation. The nurturing and attention that this mentor gave to the group, combined with the group members' desire to interact, contributed to the survival of this group. With time and patience, the mentor found that the other participants gained a sense of ownership in the group and felt equally responsible for its success.

As that occurred, this group continued beyond the original experiment, and individuals began to try basic research projects of their own. One of the group members surveyed all 1989–1994 participants in a program that recruits minority undergraduates to the LIS field. The investigation inquired into their progress and the influence of the program on their career choices. It is being analyzed with the intention of contributing the results to the LIS literature. This group has assisted and coached that group member, and succeeded in improving and expanding that individual's research skills.

Modest progress has been made toward getting more LIS professionals involved in research and toward improving and diversifying their research skills. Finally, as the project continues to refine itself and become an established fixture in the electronic network, it is time to address more directly the goal of expanding and accelerating communication within the LIS research community. New mentors and protégés should be sought and new groups created to accommodate the many areas of research interest. Anyone interested in participating should contact W. Bede Mitchell, the mentor, or Thomas A. Peters, the list-owner.

SUGGESTED FURTHER READING

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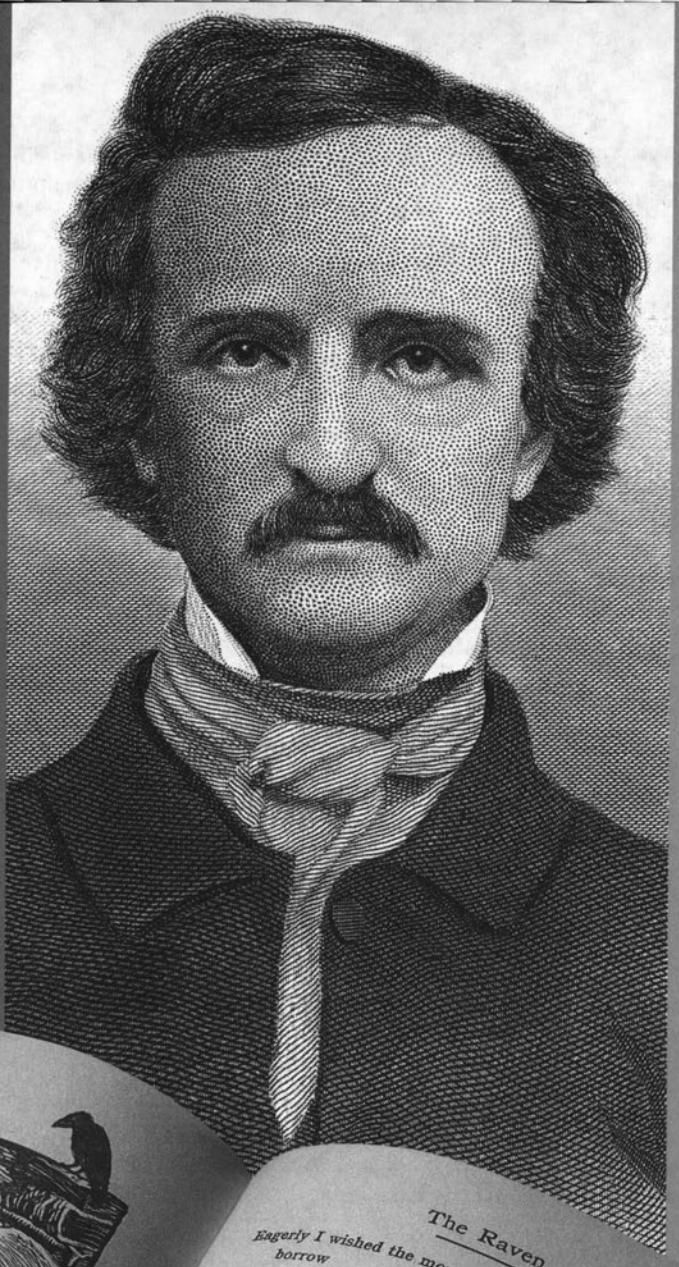

The Raven

WCE upon a midnight dreary, while I pon-
dered, weak and weary,
ver many a quaint and curious volume of
lore,
nearly napping, suddenly there came
ly rapping, rapping at my cham-
muttered, "tapping at my
y this and nothing more."
as in the bleak Decem-
ught its ghos

The Raven

Eagerly I wished the morrow; vainly I had sought to
borrow
From my books surcease of sorrow—sorrow for the
lost Lenore,
For the rare and radiant maiden whom the angels
name Lenore,
Nameless here for evermore.

And the silken sad uncertain rustling of each purple
curtain
Thrilled me, filled me with fantastic terrors never
felt before;
So that now, to still the beating of my heart, I stood
repeating:
"'T is some visitor entreating entrance at my cham-
ber door—
Some late visitor entreating entrance at my
door;

This it is and

Presently my soul grew st
longer,
"Sir," said

"Only Minolta has a copying system that damages books nevermore!"

–EDGAR ALLAN POE

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Color Sensors

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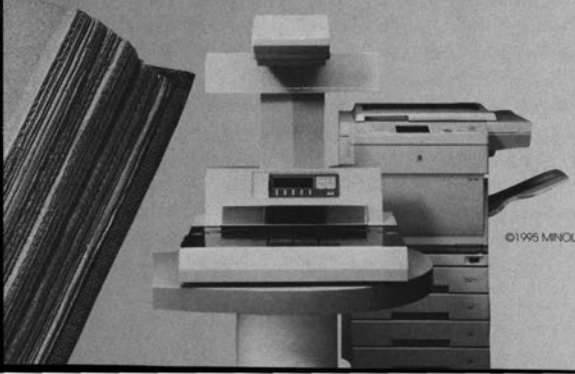

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