

NEWS - GROUPS AND TEACHING STATISTICS. ARE THEY USEFUL?

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This paper considers the potential of the “news-group”, as a Web-based tool, to enhance learning about the nature of statistics, and statistics learning and teaching. This Web-based tool has to be used as an information conduit, as a place where alternative viewpoints are accessed, and as a way of promoting communication within an international statistics education community. In particular, the pedagogical potential of “news-groups” for exploring alternative viewpoints, writing for a Web community, and promoting collaborative learning will be discussed.

INTRODUCTION

Internet technology offers new possibilities for discussion, net news, email lists and news group lists. This kind of technology has changed the type of learning and teaching environment and made web a favorable communicative tool (Baron, 1994; Lander, 1999; Means, 1994; Oliver, 2000). It is estimated that today there are more than 20,000 news groups and this number increases every day rapidly.

The introduction of “news-groups” for statistics educators from several different countries provides a useful way to establish international links and broaden the collaboration to that of a world wide community of learners. Furthermore, the way in which both in-service teachers and statistics educators participate in the discussion, sending their responses to a list of topics and questions, points towards a process by which the division between the 'novice' and 'expert' can be broken down. However, the unreliability of the system leads to problems for statisticians and educators. So, many teachers and statisticians become disappointed by the technology, and are negative to the use of “news-groups”. Many of the reasons for the negative trend in statisticians’ attitudes towards the technology are due to a feeling of lack of control and frustration when the system does not operate reliably (Pange, 2000).

The new generation of statisticians has incorporated this web-technology into its learning cycle combining traditional teaching and learning with web technology. Obviously, distance is vanishing between statisticians and there is an attractive opportunity for them to collaborate. According to Lander (1999) and McMurray et al. (2000) collaboration in a distance learning environment, using e-mails and course room chat sessions leads to richer learning experiences. Of course, in these environments, necessary materials for learning, like PC's and Internet connections, have to be provided to the learner. Amongst other news-groups, the news-group in statistics are very promising because most statisticians know how to use learning technologies and they can combine self-directed education with collaborative learning and web-based technology.

This paper examines the potential of the news-group, as a Web-based tool, to promote learning about the nature of statistics, and statistics learning and teaching. This Web-based tool has to be used as an information conduit, as a place where alternative viewpoints are accessed. In particular, the pedagogical potential of “news-groups” for exploring alternative viewpoints, writing for a Web statistical community and promoting collaborative learning will be discussed.

METHODS OF DISTRIBUTING NEWS IN THE INTERNET:

Amongst the methods of distributing news in the Internet two of them are the most popular: The method of direct mailing and the USENET system. In the first method the news is sent to subscribers’ mailboxes. But very often the number of the subscribers in the mailing list expands rapidly and this implies that it is impossible for someone to maintain the list of the subscribers. Moreover, other people join and others leave the mailing list so, the list has to be updated almost every day. These mailing lists need also a large amount of CPU resources and disk storage at the destination host, and that creates problems to the system maintenance.

In the USENET news system the articles are not stored in the subscribers' mailbox but in a central database in the receiving host. In this central database there is a sorting mechanism which allows the subscriber to read only the articles he likes. This method requires an NNTP (Network News Transfer Protocol), which is responsible for the connections between hosts and provides a simple interface to the news database. This protocol has the advantage of choosing which articles are to be transmitted from one host to the other. In this process, when a client demands an article or list of articles from its host, typically the host checks its list and then contacts its neighboring hosts using NNTP to get the articles. NNTP also uses an interactive mechanism which indicates which articles are to be transmitted. This way, we save time in the whole process, space in the server and get accurate information. In the Usenet, which is a worldwide system of discussion groups, millions of people can participate. We know that there are many different Usenet groups, and it is free for anyone to participate. Usenet groups are referred to as "news-groups", "the News" or "Netnews" and they are used as public forums for discussions.

OBJECTIVES OF NEWS-GROUP IN STATISTICS ARE TO:

The main objectives of a 'news-group' are to:

- create 'Internet discussion groups'
- find a way of promoting communication within an international statistics education community
- find 'what is up-to-date'
- explore alternative viewpoints
- create an effective tool for learning
- be used as an information conduit
- write statistical articles for a Web community
- promote collaborative learning

Although sometimes we do not need to know how to create and maintain a web-based system, I consider it very important for statisticians to know where they can address their problems, find solutions and discuss their views in statistics.

STATISTICS RELATED LISTS AND NEWS GROUPS

The list below contains information for some statistics related news-groups as they appear in the Internet.

- ASA has a link to list server of news <http://www.amstat.org/profession/list.html>
- Teaching-statistics@mailbase.ac.uk has a mailbase and recently has done a survey concerning the topics of discussion groups, the statistical resources used, etc by the members of this list. The results from this survey are published online in 'teaching statistics' May 1999.
- There are also statistical discussion groups like:
 - EDSTAT-L or sci.stat.edu.b
 - STAT-L or sci.stat.consult
 - Sci.stat.math.d
 - ALLSTAT
 - APSTAT-L
 - ASSUME
 - MEANS
 - STEPS
 - etc
- On-line resources in educational statistics are also in a PME discussion group, <http://www.ukc.ac.uk/nophp/nophp.html>

OBSTACLES IN CREATING A NEWS-GROUP

Although it seems easy to find a news-group either from the Internet or from other statistical resources, many times it is not so easy to go through all these mail messages or find the

articles you want to read from a news-group or communicate with other statisticians and exchange ideas because, there are some problems like:

1. statisticians have to know an NNTP (Network News Transfer Protocol) in order to have:
 - access to net-news article database and
 - interactive server to server article transfer via Internet

Of course there is some information on NNTP in sites like: <http://www.ietf.org/internet-drafts/draft-ietf-nntpext-base-15.txt> and <http://www.nsoftware.com/showdesc.asp?ctl=NNTP> in

2. Cooperation in between members of these news-groups it is not easy sometimes because members of the news-groups do not know each other well, in order to have extra 'chat' sessions when they consider it appropriate and freely exchange their views.

3. Another problem in using news-groups is that progressively the students, who are involved in this kind of learning process, will not learn the wisdom of how to use and get information in statistics by themselves because much of it will be provided by other colleagues in the news-groups.

4. Moreover, the unreliability of the system and lack of clarity of aspects of the Web-based tool are the main reasons for the negative trend in statisticians' attitudes towards the technology and lead to frustration for statisticians and educators.

THE RELATIONSHIP BETWEEN PEDAGOGY AND NEWS-GROUPS IN STATISTICS

Through the use of news-groups in statistics, it is expected that learning will be enriched and extended in many statistical topics, and it will also help in-service teachers, young statisticians and undergraduate students acquire confidence and pleasure in using the web resources in order to solve any statistical problems. According to Watson's (2001) review of the barriers of using computers at schools, emphasizes that many teachers are not able yet to use information technologies in their classrooms for teaching because '...curricular integration is complex; many educators feel isolated and alone; ...administrative support is essential'

The web technology, I think, will help statisticians to communicate, collaborate, develop common projects and solve real data problems, because they are quite familiar with learning and information technologies.

Moreover, in order to have an educational change in teaching statistics using the news-groups, we need to have some teachers in these groups, the 'innovators', who will eventually become the majority of the teachers or educators. These teachers must know very well how to use computers, web, news-groups and also they have to know how to apply web technology in their classroom. Eventually, they will create a new learning environment, where the 'innovators' will be supported by other teachers, members of the news-groups and at the same time their students will be able to exchange views on specific topic with other teachers using the web. According to Greiffenhagen (2000), Keil-Slawik (1992) 'the development of new software and new technology must be regarded as a collaborative learning process'. From this process, it is expected that we will create an interactive and communicative environment that will provide new resources for teaching and learning statistics.

Apart from all that, the news-groups in statistics may become a database which will improve statistical teaching, covering almost all statistical topics and narrowing the gap in between the knowledge we get in the classroom, the information we get from the Internet and the knowledge we need to have in order to solve real data problems.

WEB-BASED EXPERIMENT

During the fall semester in 2000, in the Department of Education in the University of Ioannina, a group of five undergraduate students who attended a course in 'statistics in social sciences' deliberately decided not only to attend some lectures from their teacher in statistics but also to get relevant information from a news-group in statistics from the web. In this pilot study, news-groups were seen as collaborative learning. As it was found quite difficult for the students to attend a news-group in statistics immediately, they started using the teaching-statistics mailbase first. They attended the discussions in this mailbase on ANOVA, variance and regression. Later they decided to enter in one of the news-groups in statistics. The aim of this

pilot study was to find out how useful the news-groups are in the teaching of statistics, according to a socially oriented theory of learning. In this learning process students did not only download information from the internet but they 'learnt to know' statistics. They attended lectures, acquired information from the web, communicated with other statisticians and students and they cooperate in order to take a test on a statistical topic.

Although we had some problems at the beginning either with the computers and how to get information from the web or how to deal with all information we get from the web or the time students had to spend searching the web, the gains were promising. The benefits of this cooperation in between teachers-students and other researchers in the web, were mainly based on the fact that every student transformed the course as 'student oriented' and not 'teaching of subject matter'. Mainly, it was observed an individualized student-oriented teaching, an integration of computer technology 'with traditional' classroom procedure, a computer supported collaborative learning which incorporated perspectives of social constructivism and distance-teaching and learning. Students used the books only in some cases, because they found them as static material with unfiltered or unsuitable information.

Overall, all students were satisfied using the news-groups except only one who was confused on the way to use the web technology to retrieve information about statistics and the news-groups. These four students had also a communication with other students of other Universities studying the same topic, which was very positive. According to Gena (2000), 'Globally, online projects allow students to look into the lives of students their own age and of varying life situations. This broadens their world of understanding and opens up natural and symbolic lines of communication.' In the end, our students made also an evaluation of the web-sites and news-groups they found useful for the topics in statistics we discussed in this semester. This list will be given to another group of students and they will refer to it as a starting point for their studying. I think that we only need now to develop a guide for determining the validity and usefulness of web news-group for statistics in order to save time to our next group of students.

CONCLUSIONS

It is obvious that perceptions of knowledge for statisticians have to be changed from the past schooling and learning system to a new teaching and learning environment using technology. The concept of non-fixed and non-static knowledge will eventually change the learning process where students and teachers have to deal with the unexpected and uncertain events. If there are in the Web lists of discussion topics that will be included more widely in the delivery of all statistical subjects, then we expect more and more statisticians to enter to these "news-groups" and express their opinions. The content of these topics can always be either technical or educational, focused either on hardware or software issues; or on concerns with the use of statistics in teaching and learning. Moreover, home access to the Web is likely to give in-service teachers a greater advantage of the use of the technology to study statistics. So, clearly, reliable and easily accessible hardware and software is essential if the promise of Web-based "news-groups" is to be realized. The alternative is frustration and resentment in the statisticians who are meant to benefit from this technology.

In conclusion, the answer for me to our basic hypothesis 'whether could news-groups contribute to a change in statistical teaching', is that the rapid changes in learning technologies and news-groups can re-shape our knowledge in statistics which in turn will change the whole teaching process. But the new philosophy which would emerge and allow teachers and students to cooperate in a variety of formats, will produce many models where educators will be able to choose which one to apply in their situation according to the special demands of their settings.

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