



The University of Sydney

Communicating to Learn to Write: unraveling the learning process in online discussions on scientific report writing

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Testing water quality prior to writing a technical report

Using the seminar

The number of students using the online seminar increased each year during 1999-2001. This increase was reflected in the number of students accessing the site, the number participating in discussions and in the amount of 'activity' on the site (reported as a relative measure of the total number of movements around the site by all visitors).

| YEAR | VISITORS | PARTICIPANTS | ACTIVITY |
|------|----------|--------------|----------|
| 1999 | 46 | 3 | 108 |
| 2000 | 283 | 28 | 18,000 |
| 2001 | 784 | 73 | 40,000 |

A qualitative survey of 200 students showed that the majority used the online seminar at home and were generally happy with access and with navigating the site. 95% of those visiting used information from the discussions in their reports.

There were distinct peaks of use during each 24 hour period, including a series of smaller ones associated with accessing during the day while on campus, plus an increase in use as the evening progressed. Students commonly logged on late in the evening, while they were working on their report, and a subset remained active between 12am until 3am.

Approximately 10% of the students accessing the site participated in the discussions, a figure which compares very favourably with other studies, particularly since participation was not obligatory.

Reasons for participating included: "Getting personal attention for my question", "helped me get started", "Can ask questions and get answers any time", "Read the answers while I'm writing my report".

Introduction

The *Writing in Biology* program in first year biology at Sydney University involves a learning cycle which includes explanation of academic writing and its importance, creating criteria for assessing writing, practising and giving feedback, plus a component encouraging reflection on the writing process.

One of the limitations in this cycle is the fact that students are usually working alone during the key period of preparation of draft and final reports. At this point they frequently need individual help – a challenge for academic staff working with a student cohort of 1200!

Aims

To identify the ways in which students can engage in learning about writing while participating in an online discussion seminar.

Methodology

A computer conferencing seminar has been conducted, using the *Webteach* program (Hughes and Hewson, UNSW) which provides an asynchronous mediated forum for discussion and questions.

The program provides:

- > Access to a 'seminar room' where a series of discussions are initiated by the moderator, based on suggestions sent in by students.
- > Access to the seminar for all students enrolled in the course for a 3 week period, during which they will prepare a draft report, submit the draft to staff for feedback, and make revisions before submitting a final report.
- > Opportunity for students to participate in the discussions and ask questions using their name, or an alias if they prefer.
- > No obligation to access the program, or participate in discussions, as part of course assessment.
- > The moderator with a detailed log of visitors, participants, and movements around the site, plus a permanent record of all discussions, for analysis of learning activities.

Advantages and Disadvantages

- Easy to access and navigate for students and moderator
- Design of the discussion mode makes students read through, and engage with, each discussion as it develops
- Students become aware that other students have the same problems
- Develops a permanent "question pool" for the cohort of students – not transitory as in tutorials
- Useful for those who are shy – can still be part of the process
- "Helps me to understand through discussing"
- Moderator can help individuals while being accessible to all students, providing equal access to all students

BUT

- Time consuming to moderate, since it runs in addition to face-to-face teaching
- Not enough participants to generate questions and ongoing discussion?
- Answers not available quickly enough
- All staff, who are marking etc, are not necessarily involved

References

- Hughes C and Hewson L (1998) *Online Interactions: Developing a neglected aspect of the Virtual Classroom* Educational Technology 48-55
 Lea MR (2001) *Computer conferencing and assessment: new ways of writing in higher education* Studies in Higher Education 26(2) 163-181
 Pearson J (2000) *Lurking, anonymity and participation in computer conferencing* In: Communications and Networking in Education, International Federation for Information Processing (1999, Aulanko, Finland)

Learning Outcomes

| ACTIVITY IN THE SEMINAR | LEARNING DEMONSTRATED |
|---|--|
| Direct question and answer | Basic level 'rote' learning, but all students get access to the same definitive answers |
| Explaining the problem to the moderator and to other students | Some students have problems here, but the explaining and discussing helps understanding |
| Thinking and arguing together to work through a problem (See Emily's example below) | Students often discussed amongst themselves if moderator doesn't respond immediately. Explaining to different people extends understanding of the topic |
| Working out the problem through the process of asking questions and reviewing them (See Meredith's example below) | The process of asking the question stimulated some students to work on the answer independently. Students appreciate that they can apply their own knowledge to new situations |
| Not getting an immediate, or acceptable, answer (See Annoyed example below) | Students, and the moderator, learnt that not all questions/problems can be discussed online – communicating, and working with, this limitation needs a different approach |

Emily says: I'm having problems with this sign test, I don't understand where the 'p' value came from or how to work this out. Actually in general I don't understand the sign test, because to me it's obvious you don't drink the water!
Charlotte says: Annie tell me which lab you're in and we can go over your results together.
Danielle says: I'm having problems too, especially with 'p'.
Emily says: Hi Charlotte, my class is wed pm lab 302. I went through it again last night and realised the 'p' value is from n=7 and k=7 therefore p=0.008, so from there I accept or reject the null. Now though how do I get the range?
Emily says: I think I've got it finally, so in our case p<0.05 median being 100CFUs per ml. Thanks.

Meredith says: I understand that the median is the middle value for a set of results and that the sign test will give me an indication of how far it differs
 Do we put that in instead of the mean or do we use both mean and median?
 Thanks to anyone who can reply to this.
Meredith says: Well, I think I've got that sorted now, but I'd still appreciate anyone else's comments because I think I could understand it better.

Annoyed says: Charlotte, don't you think that you always repeat what you say and go round the bush instead of telling directly what I need?
Someone says: sorry didn't mean to be rude. Just confused and I don't get anything from what you're saying.
Charlotte says: Hi Someone annoyed, I know what you're saying and I know others are saying the same thing. It's difficult for me to answer some questions without writing the report for you all, and then I find some of my 'sayings' coming up in reports word for word – which doesn't help any of us. So, I end up sounding as if I'm trying to avoid answering.