



Higher Education Research and Development Society of Australasia, Inc

The Student Experience

Proceedings of the

32nd HERDSA Annual Conference

6-9 July 2009

Darwin, Australia

Wettasinghe, M. & Majal, P. & Hasan, M. (2009) Exploring the affordances of online chat messaging for teaching and learning: a case study in higher education, in *The Student Experience, Proceedings of the 32nd HERDSA Annual Conference, Darwin, 6-9 July 2009: pp 574-579.*

Published 2009 by the
Higher Education Research and Development Society of Australasia, Inc
PO Box 27, Milperra, NSW 2214, Australia
www.herdsa.org.au

ISSN: 0155 6223
ISBN: 0 908557 78 7

This research paper was reviewed using a double blind peer review process that meets DEEWR requirements. Two reviewers were appointed on the basis of their independence, expertise and experience and received the full paper devoid of the authors' names and institutions in order to ensure objectivity and anonymity. Where substantial differences existed between the two reviewers, a third reviewer was appointed. Papers were evaluated on the basis of originality, quality of academic merit, relevance to the conference theme and the standard of writing/presentation. Following review, this full paper was presented at the international conference.

Copyright© 2009 HERDSA and the authors. Apart from any fair dealing for the purposes of research or private study, criticism or review, as permitted under the Copyright, Design and Patent Act, 2005, this publication may only be reproduced, stored or transmitted, in any form or by any means, with the prior permission in writing of the publishers, or in the case of reprographic reproduction in accordance with the terms and licenses issued by the copyright Licensing Agency. Enquiries concerning reproduction outside those terms should be sent to the publishers at the address above.

Exploring the affordances of online chat messaging for teaching and learning: a case study in higher education

Mazlan Hasan

National Institute of Education, Singapore
mazlan.h@nie.edu.sg

Marissa Wettasinghe

National Institute of Education, Singapore
marissa.w@nie.edu.sg

Pratima Majal

National Institute of Education, Singapore
pratima.majal@nie.edu.sg

Compared to asynchronous tools, the advantage of synchronous learning environments is that it allows for enhanced interaction amongst learners and educator. While we are aware of the advantages of this technology, more research can be done in this field of technology to add to current body of knowledge of pedagogical strategies in an effort to create engaging and meaningful learning environments for our learners. The objective of this study is to begin to examine the affordances of online chat messaging during an online video conferencing session to supplement traditional face to face classroom sessions and to consider strategies of integrating it into teaching and learning. This study utilized the Wimba Classroom tool, at the National Institute of Education, Singapore with lecturers from three different academic groups.

Keywords: synchronous learning, online chat messaging

Introduction

Synchronous learning environments can be defined as online environments in which communication between learners and the facilitator takes place in real time where those involved in the communication process are present all at the same time, but not necessarily in the same place (Jolliffe, A., Ritter, J., & Stevens, D., 2001). When more than one participant is involved in an educational interaction there is the potential to produce this social presence: the sense of being together with others and having a sense of engagement with them (Biocca, Harms, & Gregg, 2001; Hills, 2005).

We chose to focus our study on the chat feature in the video conferencing tool, as we wanted to find out how learners were utilizing the chat rooms as an add-on to what was happening in the main lesson.

Chat rooms are where a number of people have simultaneous text conversations synchronously. To an educator, there is a need to understand why these online relations work so well, especially in the classroom. They can be used to supplement asynchronous types of activities, such as threaded discussions, with social interactions to better support meaningful learning and allow students to make knowledge their own or to replace some of what was lost

by not meeting face-to-face. These discussions are opportunities for students to better understand the content by hearing others' interpretations while sharing their own.

In synchronous delivery of lessons, it is important to provide authentic social interactions that are crucial for deep meaningful learning and allow students to construct knowledge on their own (Roberson and Klotz, 2001; Vygotsky, 1978). Synchronous small group discussions can replace much of what is lost in the absence of face-to-face classroom sessions (Verba 1994). These groups act very much as student support groups as they provide opportunities for students to better understand the material by hearing others' interpretations while sharing their own. The analyses reported in this article are an effort to provide more disciplined evidence regarding these impressions.

The guiding questions for this paper are:

1. What evidence is there that the chat room promotes social interactions to support learning?
2. What evidence is there that peers engage each other and the content of the course?

For purposes of data analysis, the following guiding questions were used:

1. What statements show opportunities for students to better understand the material by hearing others' interpretations while sharing their own?
2. What statements show students getting to know their peers?
3. What statements show students requesting feedback from the instructor?
4. What statements show students' group problem-solving strategies?

Guiding principles for learning design

To ensure rigour in the construct of the online learning activities, these learning design principles were adopted for the synchronous events.

Variety: engaging and maintaining learner's attention (Lee and Boling, 1999)

Lecturers needed to present text in short paragraphs with sub-headings used as navigational cues. Questions and prompts were placed in text to encourage learners to engage actively with the content. The amount of text was limited to ensure scrolling was kept to a minimum and text was interspersed with illustrations and diagrams. These devices helped chunk the material into manageable amounts.

Action: getting learners to participate in online activities (Laurillard, 2002)

Educators must provide an environment where learners can act on, generate and receive feedback on how they are progressing. Questions and prompts can encourage learners to engage actively with the content by asking them to think critically about aspects of the subject.

Application: encouraging learners to extend content to other contexts (Boud and Feletti, 1998)

This can be done via problem-solving or problem-based learning as a way of constructing meaning and extending this new knowledge in new situations. This is excellent for enabling students to act as practitioners, engaging in authentic problems where decisions can be made.

Interaction: allowing learners to change or comment on content (Laurillard, 2002)
In the age of web 2.0 technologies, this is an excellent teaching strategy associated with dialogue and adaptation. The opportunity for interaction and adaptation is supported through online chat activities, contributing to knowledge construction (Jonassen & Land, 2000).

Scaffolding: guiding learners (Lave and Wenger, 1991)
Scaffolding, associated with Vygotsky (1978) and Bruner (1966), sees learning building on previous experiences, with support provided by educators to help students carry out tasks. Though teachers are not directly present in all online activities, they can guide students by providing a range of pedagogical components to scaffold learning processes.

Research design

The study was conducted for a period of one month with 4 lecturers and 83 teacher trainees.

Instructional context and procedure

Different lecturers used the web conferencing tool for various purposes. Presentation of PowerPoint slides, explanation of physics java applets on the web, project showcase, discussions on a photo uploaded etc were some of the activities that the classes were involved in. Some of the students were also split into break out rooms to discuss in their groups.

There was frequent interaction during the sessions. Lecturers asked questions to their students at several intervals to gauge their understanding and to relate the topic to the previous topics taught. While the lecturers were conducting the session the students communicated with each other via the chat tool.

Data collection

Data was collected in the following ways:

- Analysis of the archives of the recorded chat sessions
- Online survey conducted to gather students and lecturers feedback on the use of the tool.

The major portion of the data was collected from the chat messages that were posted by the students and the lecturers during the 4 web conferencing sessions carried out. A detailed analysis of the students chat messages allowed the authors to develop a framework for categorizing the messages and explain interaction patterns.

Data analysis

Online survey

At the end of every web conferencing session, students and teachers were surveyed to gather information about their perceptions about the tool. The quantitative data was analyzed using Microsoft Excel while the qualitative data gathered through the surveys was categorized into favorable and non favorable use of the tool.

Archives of chat messages

For the analysis of the chat messages there were no pre-set categories for grouping the messages. The data collected was thoroughly examined and interpreted and six main categories emerged from analyzing the data. The categories, with explanations and illustrative examples, are shown in Table 1.

Table 1: Examples of categories and explanations

Categories	Explanations	Illustrative Examples
Course Content	Messages posted directly relating to the content being taught	"let's take a look at a text to see what the rhetorical moves are"
Consensus-Seeking	Responses given to agree or disagree with one another. Students thanking each other or the teacher.	"yup, agree"
Socialising	Friendly messages not pertaining to the subject.	"Have fun, enjoy and don't get too stressed with all the work..."
Providing Support	Students asking for help or clarification on the topic being taught or messages pertaining to the support provided	"Do we critique the statement and offer opinion?"
Navigating the Live Classroom	Messages concerning technical matters like setting up the wizard, troubleshooting etc.	"Click your talk button to respond."

Results and discussion

Of the 83 students involved, 52 students responded to the online survey conducted.

From the data collected, almost all the students who responded (92%) found the text chat easy to use. From the open ended data collected it was also evident that some of the students found the chat tool a good support for their learning:

Everything can be done at my own time, even if i was to miss anything, i could scroll back in the chat log.

I could get instant response from my classmates.

While there were positive responses on the use of the chat tool, there were also students who were not very comfortable using the tool. As shown in the quantitative data gathered in Table 2, 6% of the students found it difficult to use the tool:

Think the situation is a little bit chaotic, too many people posting different thing with different theme at a time, plus a little bit of conversation here and there in the room, a bit hard to concentrate on what the instructor is saying.

I need to give my opinions quickly. Because when I were typing my comment, my classmates had give their comment already. And our comment is same.

A total of 1,377 text messages were posted by the students and lecturers during the session.

Table 2: Percent in Categories

Categories	Percentage
Course Content	22%
Consensus-Seeking	15%
Socialising	41%
Providing Support	6%
Navigating the Live Classroom	16%

Course content

In a live classroom, there are learners who dominate the discussions and those who are quiet. This can be lessened in the online environment. Everyone has to contribute online or they are invisible. This is good for educators as it helps contribute to the learning processes of their learners.

Socialising

The literature points to interaction as the key to successful synchronous learning environments in education and the evidence emerging from this study suggests that students did a lot of socializing online. Periods prior to, or between, synchronous learning events can offer useful opportunities for learners to undertake tasks either individually or in groups, which are then discussed or covered during the on-air slot with time for questions and discussion. These virtual conversations extend class time and provide for an ongoing exchange of ideas.

Navigating the live classroom, and providing support

These two categories had fairly low incidences but seemed to serve very important functions. Students could pose questions and discuss what each thought the answer should be. Learners felt this was an extremely effective method of studying. Navigating the Live Classroom consisted of helping each other learn how to use the technology. Having this peer guidance available seemed to stave off frustration and anxiety for learners.

Consensus seeking

As evidenced by the online answers and discussions of the students, they were able to check their understanding of assignments against each other and to avoid referring back to the lecturer. It also allowed students to sound out their peers to hear how they were progressing on assignments, elicit strategies that others found useful, and, often, commiserate on how much work there was to do.

Limitations

Individual text messages posted by students could not be viewed by the lecturer; as a result the entire learning process may not be captured by the lecturer. Another challenge can be keyboarding skills needed for effective participation. Finally, participants for whom English is not a strong medium of communication, may be at a disadvantage if the conversation flows so quickly that they don't have sufficient time to reflect, frame questions, and compose responses.

Conclusion

Chat rooms have promised benefits in terms of real-time interaction, immediacy, motivation, and collaborative learning (Bates, 2005). There is the sense of togetherness and shared experience, a camaraderie which can help offset the particular danger of attrition where students study both remotely and individually (Bates, 2005; Wheeler, 2005; Wheeler & Amiotte, 2004). Despite its limitations, its affordances make it a powerful communication tool that supports the learners in their construction of knowledge.

References

- Bates, A. (2005). *Technology, e-learning and distance education* (2nd edn.). Abingdon, UK: Routledge.
- Biocca, F., Harms, C., & Gregg, J. (2001). *The networked minds measure of social presence: Pilot test of the factor structure and concurrent validity*. Paper presented at the 4th International Workshop of Presence, Temple University, Philadelphia, PA. Retrieved March 15, 2007, from http://www.temple.edu/ispr/prev_conferences/proceedings/2001/Biocca2.pdf
- Bruner, J. S. (1966) *Toward a theory of instruction*. Cambridge, MA, Harvard University Press.
- Boud, D. & Feletti, G. (1998) *The challenge of problem based learning* (2nd edn) (London, Kogan Page).
- Jolliffe, A., Ritter, J., & Stevens, D. (2001). *The online learning handbook: Developing and using Web-based learning*. Sterling, VA: Stylus
- Jonassen, D. H. & Land, S. M. (Eds) (2000) *Theoretical foundations of learning environments*. Mahwah, NJ, Erlbaum.
- Laurillard, D. (2002) *Rethinking university teaching: a framework for the effective use of educational technologies* (2nd edn) (London, Roudedge).
- Lave, J. & Wenger, E. (1991) *Situated learning: legitimate peripheral participation*. Cambridge, Cambridge University Press.
- Lee, S. H. & Boling, E. (1999) Screen design guidelines for motivation in interactive multimedia instruction: a survey and framework for designers, *Educational Technology*, Mayflune, 19-26.
- Roberson, T. J. and J. Klotz. (2001). Chat: The missing link in on-line instruction. Paper presented at the annual meeting of the Mid- South Educational Research Association, Little Rock, Arkansas.
- Verba, M. (1994). The beginnings of collaboration in peer interaction. *Human Development* 37:125-39.
- Vygotsky, L. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.
- Wheeler, S. (2005). *Creating social presence in digital learning environments: A presence of mind?* Paperpresented at the TAFE Conference, Queensland, Australia. Retrieved March 22, 2007, from <http://videolinq.tafe.net/learning2005/papers/wheeler.pdf>
- Wheeler, S., & Amiotte, S. (2004). The death of distance: Documenting the effects of distance education in South Dakota. *Turkish Online Journal of Distance Education*, 6(1), 76–83.

Copyright © 2009 Mazlan Hasan Marissa Wettasinghe, Pratima Majal: The authors assign to HERDSA and educational non-profit institutions a non- exclusive license to use this document for personal use and in courses of instruction provided the article is used in full and this copyright statement is produced. The authors also grant a non-exclusive license to HERDSA to publish this document in full on the World Wide Web (prime site and mirrors) on CD and in printed form within HERDSA 2009 conference proceedings. Any other usage is prohibited without the express permission of the authors.