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## On mediation in virtual learning environments

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### Abstract

This article is not about the panacea of computers or technology as the saving grace of education. We firmly believe that human interaction, especially as it pertains to face-to-face (f2f) encounters, is certainly the most effective way to communicate and collaborate. However, in an Internet-connected world, there are alternatives to f2f proliferating. In this paper, our investigations and ideas pertain to enhancing these types of non-f2f encounters, and putting a more human feeling to them. © 2002 Elsevier Science Inc. All rights reserved.

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“Die Sprache hat für Alle die gleichen Fallen bereit; das ungeheure Netz gut gangbare Irrwege. Und so sehen wir also Einen nach dem Andern die gleichen Wege gehn, und wissen schon, wo er jetzt abbiegen wird, wo er geradeaus fortgehen wird, ohne die Abseiwung zu bemerken, etc. etc. Ich sollte also an allen Stellen, wo falsche Wege abzweigen, Tafeln aufstellen, die über die gefährlichen Punkte hinweghelfen.”

[Language sets everyone the same traps; it is an immense network of easily accessible wrong turnings. And so we watch one man after another walking down the same paths and we know in advance where he will branch off, here walk straight on without noticing the side turning, etc. etc. What I have to do then is erect signposts at all the junctions where there are wrong turnings so as to help people past the danger points.] (Ludwig Wittgenstein, *Culture and Value*).

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## 1. Introduction

Our paper focuses on conveying concepts of mediation, from several angles. We discuss education and technology as they pertain to culture change, social institutions, the Internet and computer-mediated communication, software design and human–computer interaction, the use of MOOs, time, place and collaboration, and language. We also share some of our experiences with two MOO-based projects to provide examples of the potential uses of MOOs in education. In addressing many of these aspects, we hope to convey the importance for implementing comprehensive virtual learning environments (VLEs).

### 1.1. *Culture(s) mediate(s)*

American cultural anthropologist Hall (1976) demonstrated how cultural change is necessarily generational. He argued that our current state of Western beliefs about education (yet now a curiously cross-cultural phenomenon) were unconsciously formed in the early stages of the Industrial Revolution. Educational views came about as the result of the second generation of factory workers having been brought up in “normal” and “natural” conditions to respond to segmented bells and whistles that factory owners used in an almost pre-Pavlovian way to subsume workers’ and families’ independent will.

The contrast from the year 1901 to 2001 is astounding. Progressing at warp speed, technology has left culture far behind, and culture is chasing technology, struggling to keep the gap from widening even more.

### 1.2. *Social institutions mediate*

As governmental institutions around the world attempt to rethink how people need to be educated, there are voices (including us) calling to cognitive psychologists and educators such as the Americans Papert (1980) and Schank and Cleary (1995). They insist that schools of all kinds around the world must stop testing and lecturing and having time-segmented classes if educational institutions are to help students learn. We join them in moving away from the typical classroom setup: rows of desks facing a teacher’s desk or podium that is usually placed on a stage at the head of a room in front of a blackboard or white board. Brazilian educator Freire (1970) argued that this leaves the power structure intact. The typical classroom setup subverts student’s curiosity and leaves them no room to stretch their minds, even to fail at times. Iranians Talebinezhad and Aliakbari (2001) in counterpoint to Freire, remind us that many Eastern cultures, especially Japan, China, and Korea *do* hold a diametrically opposed view of learning in these matters. These cultures see that failure is a matter of losing face and not the student, but the teacher is the root cause of this failure and that is a bad thing. There is a struggle between educational and cultural ideologies then in seeking to find new ways in educating the young.

The Japanese national government, along with the Ministry of Foreign Affairs (MOFA, 2000), is proposing its “Information Technology” or Basic IT plan. The plan is to

integrate Japan's infrastructure with wireless technology in all facets of society, including of course, education. The Japanese would like to realize the goal that "all will be able to receive the most advanced level of education they require regardless of geographical, physical, economic and other constraints" (MOFA, 2000). This is the educational part of their goal to have Japan as the leader in IT by the year 2006. Yet, already, it is obvious that they will spend a lot of money on the hardware, but little, at least in the educational fields, where it is needed most: in teacher training and pedagogical considerations. Similarly, the Malaysian Multimedia Super Corridor project, with the development of Smart Schools as one of the flagship applications, has striven to enhance the use of ICT in schools. The National Information Technology Council (NITC) has carried out numerous projects to educate the community at large about the need for ICT skills. The Ministry of Education has long introduced Computers in Education (CIE) in schools to teach pupils about IT literacy. There are also many other initiatives that not only provide hardware, but also content for learning. Malaysia was also one of the first countries in Asia to have a nationwide IT teacher training program (in-service) and a compulsory ICT module in colleges and universities. Furthermore, we have recognized that it is crucial to support "warm ware," i.e., the people involved in applying the technology to the education and training system.

Ironically, the Japanese seem to be ignoring the lessons that the Americans have learned about front-loading technology into schools, which is that computers in a classroom do not do much if the teachers are not trained to use them. America is now thinking how to solve the problem of training teachers in the uses of technology, and might come to a solution shortly. We predict that they will spend more money on upgrading current hardware and continue to ignore the human side of the equation. This also has much to do with culture and the evangelical spirit that is patterned into Americans like Larry. The real revolution in education will come from a repositioning, or a reversioning<sup>1</sup> of educational values.

### *1.3. The Internet mediates*

Computer-Mediated Communication is still a young field of study. We prefer Internet-Mediated Communication (IMC) as witnessed by the rapid spread in Japan of new technologies such as iMode, which are wireless phones, more like PDAs and other handheld computers, that are now ubiquitous in "classrooms," but oddly enough not yet used in "classrooms." Over 90% of Larry's students have a "keitai" or portable telephone. (Larry has one, too!). We will stay with the term "computers" for now which will encompass all of these new devices. Whatever it is at the moment, the Internet-connected device is the MEDIATOR or the go-between. As [www.dictionary.com](http://www.dictionary.com) (2001) defines the word mediate: "To effect or

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<sup>1</sup> Reversioning—Larry has coined this noun form to encompass the idea that many things that are made for one purpose soon find themselves being used for another purpose. The Internet, as the most obvious example, was created as a tool for Cold War American intelligence services to gather information about other countries, but has since been reversioned to the more general populations of the world. The verb form then, comes from the infinitive "to reversion."

convey as an intermediate agent or mechanism.” What the device conveys is the interaction of two or more humans. IMC, then, is human–computer–human interface (HCHI), and *where we want to be*. We want that tool, that device, to aid the two or more humans who want to interact with each other. Now, these people logically are not in the same place, but are in the same time. It means that I am here in Japan, and you are there in Malaysia and we want to work on something together at the same time. We can do this now, and the technologies are enabling us to do it faster and more efficiently, in terms of how big the information pipeline is. Larry has a 100 base T connection at his school, and a 900-kbps cable modem in his home.

#### 1.4. *Software mediates*

To date, almost 99% of software design in all realms, not just education, lacks the key ingredient: collaborative workspaces. We take our definition of “collaboration” from Schrage (1995, p. 33): “. . . collaboration is the process of *shared creation*: two or more individuals with complementary skills interacting to create a shared understanding that none had previously possessed or could have come to on their own . . . but the true medium of collaboration is other people.” Note that 99.9% of the software we routinely use is Western developed. We rely on the human–computer interface (HCI) in such fields as Computer-Aided (or Assisted) Instruction, Computer-Assisted Language Learning, and the Internet, but these remain dehumanizing influences. Communication has nothing to do with our interaction with machines, but with each other, those involved in the human experience. However, software of the HCI dominates. This has as much to do with the sociocultural–historical viewpoint and values of the software developers (remember that Americans have the frontier do-it-yourself spirit!) as anything else.

MOO (explained in detail below) offers a unique way of developing software for education. It is a type of “Middleware,” a term used in the development of educational software, and is a proposed key to the future of changing the way we educate and are educated. Middleware, simply, is the core programming software that exists in the center, like an engine of a car. Other pieces of software, in the periphery, then, can be added in terms of functionality. Additionally, the core code could be used to develop other tools, like adding the body and seats of a car. This means that the software is extensible and is able to scale horizontally or vertically. At its core, MOO is open source, which adds value to education, as it is free and available to all educators.

#### 1.5. *Time mediates*

As it stands, if we want to write something together, these are the steps we have to follow. First one of us has to use our computer word processor, such as Larry is doing now, to make this part of this document. Then, I e-mail the document to you and (provided you have the same word processing program) you open the document, make some comments and e-mail it back to me. Alternatively, you could have a new idea for a machine or a product and want to bounce it off me for my ideas. You would open your drawing program

and follow similar steps, and hope I have the same program on my computer. Of course, we are a continent apart during this entire process. To continue, you open your drawing program and make a gif or jpeg image and e-mail me. I open the document if I can, look at it, perhaps make some changes, then I send you some comments back along with the new version of the document. In both of these cases, we are forced, by distance, into an asynchronous relationship. We cannot work on the same thing or even at the same time. I have to wait for your work, and you have to wait for my comments and revisions. There is no chance for that magical collaborative chemistry to work with all that time spent in between sending, receiving, viewing, commenting, saving, e-mailing, and downloading. Under the best of current circumstances, we *could* chat in one window while looking at the same document in another window. We have done this with several colleagues already, but we have still missed out on that exciting moment of “shared creation” that Schrage (1995) shows is the key ingredient in collaboration. We still do not have a shared space in which to work, either, even if we could work together on something at the same time. We need that shared space for any collaboration to pan out.

Sure, we could use chat to some effective extent. The overwhelming majority of Internet users do when they want to communicate with others, but why use technology equivalent to the telegraph when you can recreate an entire world and populate it with objects that can do a lot of the menial tasks (like recording your interactions and e-mailing you transcripts of your interactions) while you and your collaborators have your hands free to do the real work you need to do?

To be fair, there exist some examples of collaborative software that enables two or more people to work together on the same document at the same time. There are private companies working in these areas now, and developing various collaborative tools (see Appendix B). We have seen a few very useful white boards ([www.groupboard.com](http://www.groupboard.com) as an example). A colleague has shown Larry a collaborative mind mapping/concept mapping environment and a collaborative word processor environment. These are large steps in the right direction if one wants to create a shared space.

### *1.6. Language (human and computer!) mediates*

Recently, we have seen a very nice piece of software that enables video to be manipulated in real time with a number of interesting visual effects (see Arkaos, under Resources). Our very first lament about this nice piece of software was that it was written (by Europeans!) for industrial revolution people . . . those who we are pigeonholed, segmented, and separated from each other and themselves also. It would make an awesome piece of collaborative artistic and musical software. However, only one person can use it at a time . . . much the same as all other software out there. The software also uses an interesting array of input devices including a computer keyboard to trigger special effects or a piano’s keyboard. Unfortunately, programmers do not think like educators, who do not think like interface designers, who do not think like performance artists, who do not . . . you get the picture. In all of our separate areas we are constrained by the language we use within the boundaries of our profession and our culture (again, culture!).

### 1.7. So what?

Where does that leave us? Not anywhere really, because we continue to think inside the box. We are constrained by our culture, our educational systems and other social institutions, our previously created electronic artifacts . . . even our subcommunities, be they academic, artistic or what. New software is still being designed with HCI as its basis.

This is not a pessimistic assessment of things, merely a small lament that we continue as an entire species to live and design our tools far under our potential. That the Internet values the pieces and not the whole; that the Internet reinforces the digital divide and continues to remain, politically, at least, a tool for a particular world view; we view this as a sad development.

## 2. The black ships of the Internet: MOOs

To take a short digression, Larry now lives in Hakodate, Hokkaido, Japan. The northernmost island was formally annexed by Japan in 1868 from the Ainu (who are now a tiny minority on the island, but are culturally distinct and related to the Finnish Lapps and the Canadian Inuit). This city is probably most famous, historically, for the American's Commodore Perry arriving in 1856 with his "Black Ships" that opened Edo Japan up to the rest of the world after 300 years of self-imposed isolation under the Tokugawa Shogunate. Perry's ships led to the overthrow of the Shogun and the restoration of the Emperor Meiji in 1863, a mere 7 years, less than a quarter of a generation, for radical social change in Japan to begin. Hakodate shows many unique Meiji-era trappings in terms of the design of buildings and the layout of the city. Much from Perry's time still remains, including the distinct cultural outlook of Hokkaidans in general.

In terms of an artifact that has already been created that addresses all of the above is one modest piece of technology that we liken to the Black Ships and their potential to revolutionize a way of doing something mired in a long history and tradition. In our opinion, the best (but far from perfect) thing we have for online collaborative learning so far is to be found under the strange and mysterious acronym: MOO. It is an acronym within an acronym. The M itself is disputed. . . . It could be Multi-user domain or dungeon. This is MUD for short. The O-O is simply Object-Oriented, for MOOs are object-oriented programmable databases that sit quietly on servers preserving lots of data not only about users' habits, but their products as well. The products are usually framed within a "room" metaphor, and the entire MOO is a "place" inhabited by these people *and* their creations. This place is a kind of virtual world. In MOO, everything, including users (also called players), is an object, meaning that everything can be programmed to look like something and to do something. Chairs can just sit there, but they can also be programmed to float away, or morph into a dragon, or recycle themselves out of existence, or e-mail you at certain intervals a list of all people who have interacted with it or any other objects within its class. Chairs can be any size, shape, smell, color, texture, gender . . . like everything in good literature, the limits are only in the imagination, as this is, in its current state, a

mostly text-based learning environment. Its first and still present incarnation is a command-line interface. It is a programming environment and it is command line interface. This is worth repeating.

Since 1997, there have been moves on at least two different fronts to put a “friendlier” user interface (UI) onto the open-source core software from Curtis’ (1998) original rendition of MOO as a role-playing environment. This fact in itself should make it obvious of the potential of the medium. Cognitive psychology and constructivist educators tell us that learning by doing and playing is the way infants and children learn. Vygotsky (1978) was quite clear, also, on the importance of *someone*, not *something*, that would scaffold people toward higher thought processes. MOOers, after all, do the programming. The programmable verbs in MOOs are programmed by people, usually after long sessions with other, more experienced people.

### 2.1. *Experience mediates*

This other difference, experience, sets MOO far apart from chat (such as IRC chat) and instant messenger programs (ICQ and AOL Instant Messenger). There is nothing to learn in these latter two technologies. Type into a box and hit *return*. It *does* do the job of helping two or more people communicate through the Internet, but why use a cup to fill a bathtub when you can use a hose? In MOO, like in every other learning situation, things are created things with the help and collaboration of others. The created things can be silly things in their own right, but learning to program the silliness leads to many complex learning moments and opportunities for building a community of knowledge and experience.

We recognize also that MOO must have pedagogical use; Honebein (1996) summarizes “seven pedagogical goals” of constructivist, learner-centered environments:

1. Provide experience with the knowledge construction process [student responsibility for learning].
2. Provide experience in and appreciation for multiple perspectives [viewpoints and problem solving].
3. Embed learning in realistic and relevant contexts [authentic learning tasks].
4. Encourage ownership and voice in the learning process [student centered with teacher as consultant].
5. Embed learning in social experience [encourage collaboration].
6. Encourage the use of multiple modes of representation [different mediums].
7. Encourage self-awareness of the knowledge construction process [reflection]. (pp. 11–12)

Also MOOs can be classified under “Rich environments for active learning” (REAL) that are constructivist-based and designed to encourage student responsibility and motivation (Dunlap & Grabinger, 1996, p. 228). MOO, then, lends itself to learning through experiencing. All levels of sophistication can be catered to. Programmers will enjoy the object-oriented experience and the myriad ways to get objects to do things.

Some of the most basic tools in MOO are the result of simple programming efforts. There is the tape recorder object, which can save a transcript of human/human and human/object interaction (see Appendix A) and e-mail it to concerned parties. There are preprogrammed robots waiting to serve as virtual museum guides, or as characters to enhance the space's atmosphere. There are web projectors that can show pages from the World Wide Web directly in the Java enhanced windows of one version of the current MOO UI, though the UI itself is undergoing development (Appendix A). There are many more things too numerous to mention, but experiencing them is more important than writing or reading about them.

### 3. Illustrative projects

A brief explanation of two MOO-based projects will, we hope, give a slightly clearer picture to the potential uses of MOOs in education. One of the projects is found at Achieve MOO (<http://achieve.utoronto.edu:2221>) and the other at SchMOOze (<http://schmooze.hunter.cuny.edu:9000>).

#### 3.1. *The Malaysian–Coventry project at Project Achieve*

It is an initiative to develop and deliver ICT solutions to teaching and learning in secondary and primary schools in Coventry and Malaysia. The goal is to nurture a new learning culture offering more learner-centered approach, the sharing of teaching and learning materials, and the acquisition of new skills and competencies.

This school link offers an opportunity for the SMART Schools (IT Schools—<http://www.ppk.kpm.my/~wshukry/bestari/>) and technology-rich schools in Coventry to be involved in the introduction of IT and to facilitate the transition between schools and industry. This link is built on commonalities in both the UK and Malaysian initiatives and addresses the major challenges of how best to develop and share new practices.

#### 3.2. *MOOrrey's entertainment complex at SchMOOze*

Markus Weininger, a German living in Brazil, and his anonymous colleague spent the good part of 6 months collaborating on an interactive space in SchMOOze, dubbed MOOrrey's. The space features a restaurant, where you can order food and drinks from the robot waiter, Manuel, a bar, where Iona (another robot) will serve you any drink or learn about any unknown drink from you, and a dance floor where the DJ (yet another robot) will play any song you request, and add any song that he does not know to his play list. Finally, throughout these three spaces is the roaming "bot," Kumiko, who is the bouncer at MOOrrey's. Kumiko brooks little tomfoolery from customers and is quick to dispose of you outside the premises. In addition to the interactivity with robots, you can sing in the karaoke booths (a later addition) or dance with a partner. All in all, this is an amazing piece of interactive programming by two nonnative English speakers. The main intention

of this project was to give nonnative English learners a safe place to practice using their English. It is one of the most popular “places” in SchMOOze where learners go. Some students, inspired by this project, have added to Manuel’s menu, and the music list that the DJ keeps.

These two projects are very superficial overviews of the power of these collaborative spaces. The owners of these objects do not need to be present for others to interact within the space, and this is what empowers this environment. By interacting with the creations of others, you are interacting with that other person, and you learn more about the programmer and his/her intentions through your own direct experience with his/her creations. This type of hypertext narrative defies simple explanation. We encourage readers to experience the MOO and consider some of the pedagogical implications of a space that offers full and total access to users with a simple telnet connection or a full-blown Java-enabled browser such as Netscape Navigator version 4.5 or better.

#### **4. The bad news: it is not perfect!**

It is also important to understand some of the deficiencies inherent in the design of this software, as with any software. In addition to design deficiencies, there are built-in problems of geography and institutionalized conceptions of time and learning spaces.

Many people experience a general dislike of the command line interface input in MOO, and the fact that the MOO is a heavily text-rich environment (very true in Larry’s case!). There are many arguments from new users on the difficulty of having to learn new commands to communicate and move around the spaces. We think these arguments are superficial at best, but also affirm that it is an issue that must be addressed in the future design of the input interface. People are, after all, more attracted to bells and whistles than to nuts and bolts, and MOOs are especially oriented, in their present iteration, to the latter.

The digital divide means that these spaces are still pretty much for the elite, meaning people living in countries with well developed or rapidly developing communications infrastructures. People with access to computers still account for a tiny fraction of the world population, hence the chance to meet with people who see the world from a very different perspective are small.

In addition, most national governments rarely look outside their borders in constructing basic educational curricula. Factors of geography, such as climate, regulate the creation of national school schedules. Different countries live on different schedules, so coordinating an international project in MOO within the confines of a school year will cause a logistical nightmare. Japan’s school year is from April to March. The US and Canada school year is from September to June. Malaysia’s is from January to November. Other countries? Until governments find ways to cooperate and collaborate with each other, there will be few chances to have mid-to-long term collaborative projects that can be done in a MOO. As it stands, educators can expect a 3-month long project to be a luxury, whereas a more realistic goal is 1 month, at best. This leaves an impossibly short time to get to know one another: a prerequisite for Shneiderman’s (1997) view of effective cyber-collaboration.

The other factor of time zones is a near impossibility to overcome. Malaysia and Canada spend half a year being 12 hours apart in time, as are Japan and Brazil. Projects between students from these countries would not be successful in terms of synchronous collaboration, until students have 24-hour access to Internet connections. Future University-Hakodate does have this, but it is an exception, rather than the rule as it currently stands.

MOO-based projects are not tailored for current class or curricular structures. If we want students in different countries to interact in real time with each other, we can pretty much count out using class time for it. Class time is more for personal exploration of the space and of the available tools with which to describe and program. We remain pessimistic in seeing this point being addressed anytime soon.

## **5. Conclusions: the good news: it is real, not virtual!**

VLEs are, in the final analysis, really a misnomer. The human interaction and the learning that can happen are very real events, in the sense that there is a sharing of new learning, and a sharing of ideas that can be reached through Internet-based communication in real time. Stronger than the asynchronous nature of e-mail, and more immediate, MOOs are ripe for potential. The payoff with MOOs, however, is realized only after a considerable investment in time and human contact. We do not prescribe MOOs for teachers looking for a quick magic elixir to motivate students. Initial excitement gives way to the reality that MOO technology is a programming environment, a hypertext environment, a community-building-in-real-time environment. It requires considerable time to meet and chat with people who cannot be seen or heard. It requires considerable time to deal with the multi-threaded nature of MOO conversation, which appears linearly, but is not. It requires patience and understanding that the power of the MOO is revealed to those willing to believe that the power exists and grow to understand how the power manifests itself. It requires, in the end, a belief that humans collaborate best when they get to know each other well and can respect that each of us has something to contribute to the VLE and to the world.

## **Appendix A**

A short transcript of an MOO session where Larry and Shukry plan this paper and presentation. This is the chat portion only, recorded by the robotic tape recorder object, then e-mailed to Larry's MOO registered e-mail address.

–Start log: Thursday, August 9, 2001 8:53:41 p.m. Achieve time (EST)–

Shukry says, “yes”

Shukry says, “i might be slightly distracted . . .”

Larry says, “Um, well . . . I think it would be better to put aside the time . . . even if only 15 minutes.”

Shukry says, “ok right now then”

Larry asks, “We can then just plan what we need to do, then get back to doing it... or am I being too linear for you”?

Shukry says, “nope, fine”

Larry says, “right now then is best ... 15 minutes of undivided attention.”

Shukry says, “you can start”

Larry says, “Yesterday I suggested the following ... Start with MOO and possibly end with Hotline.”

Shukry says, “yes”

Larry says, “I think MOO can very easily fill up a 5 hour playshop.”

Shukry says, “yeah”

Larry says, “Fundamentals of commands. We can do this as an altogether thing.”

Shukry asks, “ok, how many commands”?

Larry says, “People log on, then we show them how to talk ... and how to move around.”

Larry says, “That’s it. Four commands, really ... SAY, EMOTE, PAGE and no number 4”

Shukry says, “I did a little module for the project”

Larry says, “they’ll learn to move around when we get other MOOers here to guide them.”

Shukry says, “ok sounds good”

Larry says, “I suggest, depending on the number of attendees ...”

Larry says, “that once on the MOO, each Canadian MOOer be a kind of a tour guide”

Larry says, “and they can bring them to various parts.”

Shukry says, “wookay sounds like a good plan”

Larry says, “Then, if we coordinate this right, it becomes like a jigsaw.”

Larry says, “We leave the MOO, and in the playshop, people break into groups and describe what they experienced.”

Shukry says, “aha”

Larry says, “Then, they formulate some things that they could prepare for students, and share their ideas with each other.”

Larry says, “That’s the whole playshop, right there.”

Shukry asks, “what would they be able to do”?

Larry says, “Experience. Sharing. Brainstorming new ideas.”

Larry says, “just the basics, but they need to understand the idea that there’s a number of spaces here to move around in.”

Shukry says, “then we could use inspiration”

Shukry says, “as well”

Shukry says, “right”

Larry says, “and they need to see how to apply those concepts with their own ideas on how to create MOOspace.”

Larry exclaims, “oh, and I found a program that is ... in many ways, better than inspiration!”

Larry says, “but for OSX.”

Shukry asks, “what is it”?

Larry says, “It’s called Omni ... Giraffe ... or something like that.”

Shukry asks, “is it free”?

Larry says, “check out omnigroup . . . they are totally developing for OSX and nice things. No, but educationally cheap.”

Larry says, “about 30 US dollars . . . and I’m sure they’ll have site licences.”

Larry says, “worth checking out.”

Larry says, “actually, lemme download that program on this computer.”

Larry says, “well, later.”

Larry says, “So . . .”

Larry asks, “Introductions, who we are and about 10 minutes of historical background?”

Larry says, “then a teeny tiny bit of pedagogy/theory . . .”

Larry says, “say, 5 or 10 minutes at the most . . .”

Shukry says, “sorry phone”

Larry exclaims, “let it ring, man!”

Larry says, “then, 20 minutes for MOO commands, then let them go for an hour at least.”

Larry says, “Break time after 90 minutes.”

Larry says, “then, shared session for an hour. What they learned, what they saw . . . with the goal of formulating some basic ideas on how to use the technology.”

Larry says, “you want inspiration there? OK, but they need to know the software to use it.”

Larry asks, “you on the phone again?”

Larry pokes at Shukry.

Larry says, “Oh, you phone people.”

Larry urks.

Larry waits for Shukry cause I have no other choice . . . SIGH SIGH SIGH . . .

Larry goes to download some software.

Larry says, “be back in 10 minutes. It’s now 10:15 (JST) here.”

Larry says, “www.omnigroup.com the program is graffle . . . very nice . . . very nice . . . but no brainstorming button. I LIKE THAT FEATURE in inspiration”

Larry says, “now downloading”

Shukry says, “sorry swamped again”

Larry exclaims, “gasp! what a surprise!”

Shukry says, “being pig-in-the middle again”

Shukry says, “i hate it”

Larry says, “ok, back to normal”

Larry asks, “you there now?”

Larry asks, “or piginthemiddle again?”

Shukry says, “yes”

Larry says, “ok, so, review for me, please . . .”

Larry says, “and then we need to allocate our tasks.”

Larry says, “oh, and two other things . . .”

Shukry says, “ok sure”

Larry says, “I do not see anything on the website about our workshope either . . .”

Shukry says, “they said they put it on already”

Larry asks, “Where”?

Shukry says, “yes”

Larry asks, “you got an URL for it”?

Shukry says, “nope, but i’ll email them”

Larry says, “now check this out.”

Larry shares a URL. (<http://www.omnigroup.com/products/omnigraffle/download/content.html>) (<http://www.omnigroup.com/products/omnigraffle/download/content.html> target=\_blank).

Shukry says, “cool”

Shukry says, “i’ll mess with it soon”

Larry says, “try it out . . . if we can have OSX, then I want to use it. A little hard to figure out at times, but very flexible.”

Shukry says, “wookay”

Larry says, “anyway, I’m going to spend the next hour or two writing up about MOO for us, ok? and poke around the SOLE pages for evidence of our workshop.”

Larry asks, “or can you point out the URL for me”?

Larry pokes at Shukry.

Shukry says, “hang on”

Larry asks, “see how hard even 15 minutes of online collaboration is?”

Shukry says, “sorry can’t seem to find it offhand”

Larry exclaims, “damn!”

Shukry sighs.

Shukry says, “ok, you do the write up on the MOO”

Larry says, “keyboard is weird”

Larry says, “seems better now”

Shukry says, “oh logitech ne”

Shukry says, “drivers are dodgy”

Larry says, “dunno”

Larry says, “osx is the culprit I think”

Shukry says, “also”

Shukry says, “but logitech is crappy”

Larry says, “mmm”

Larry says, “I like the split keyboard, though.”

Shukry says, “yes but the MS one is better . . .”

Shukry says, “support wise”

Larry asks, “MS is better, did you say”?

Shukry says, “yes i did say that”

Larry slaps you silly.

Shukry says, “then washed my mouth with disinfectant”

Larry says, “good”

Larry says, “ok, time to write . . . please make sure that we have an early morning session.”

Shukry asks, “tomorrow good for you”?

Shukry says, “morning as usual”

Larry says, “tomorrow is Saturday . . .”

Shukry says, “ok”

Shukry says, “no problem”

Larry says, “Monday morning is ok, though”

Shukry says, “right”

Larry says, “lots to do, but have to do it.”

Larry says, “including my grades.”

Larry exclaims, “yuck!”

Shukry exclaims, “oh i can’t!”

Larry says, “ok”

Larry says, “4th 5th 6th of September PM your time.”

Shukry says, “got to chaperone those british peps”

Larry says, “oops . . . sorry”

Shukry asks, “what is your flight detail”?

Larry says, “um, dunno yet, but coming Sept 2, I think in early afternoon KL time.”

Shukry says, “ok tell me officially so that i can pick you up or get mimos to do so”

Larry says, “yep . . . will send . . . oh, wait . . . I have rough details . . . just a minute”

Shukry says, “ok”

Larry says, “arrives 455 pm in KL on the 2nd. do not know the plane yet.”

Larry says, “I think Malaysia Air.”

Larry says, “but not sure . . . from Nagoya, though.”

Shukry says, “right”

Larry says, “right”

Larry says, “more details as soon as I know.”

Shukry says, “just email to me when you get them confirmed”

Larry says, “my travel agent in Nagoya is doing it, and Atsuko has been dealing with her anyway.”

Larry nods.

Shukry says, “oh ok”

Larry says, “right”

Shukry says, “i’ve got to go for a meeting”

Larry says, “ok, just trying to finish up these arrangements with Jason, et. al.”

Larry says, “bye, then. Monday no good, then email good times for you next week.”

Shukry says, “email me the paper for the presentation ok”

Larry says, “right, as soon as I can.”

Shukry says, “sure”

Larry says, “will spend time on it now.”

Larry says, “bye”

Shukry says, “ok good”

Shukry waves.

–End log: Thursday, August 9, 2001 9:51:31 p.m. Achieve time (EST)–

## Appendix B

A small sampling of private companies working to develop web-based VLEs.

Centra (eLearning) — <http://www.centra.com/education/index.asp>

Galton (eTesting) — <http://www.galton.com/>

Groove (eCollaboration) — <http://www.groove.net/>

Horizon (collaborative environment) — <http://208.185.32.81/>

Reference Desk Live (librarian's tool) — <http://www.referencedesklive.com/>

Wimba (sound board) — <http://www.wimba.com>

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## Resources

- Arkaos—video authoring and performance tool for Macintosh. Available at: <http://www.arkaos.net/site/en/index.html>.
- Project Achieve — <http://achieve.utoronto.ca:2221> or <telnet://achieve.utoronto.ca> port 2222.
- SchMOOze University — <http://schmooze.hunter.cuny.edu:9000> or <telnet://schmooze.hunter.cuny.edu> port 8888.