Project: *Using Mobile Devices as Learning Tools for Alternative Teaching and Learning Models*
University of British Columbia, Vancouver, B.C. Canada

Glen Lowry, Emily Carr University
June 28, 2011

This is a transcript of an interview with Glen Lowry. Video is available in SOL*R.

Q. If you could just introduce yourself, say who you are, where you work, what you do...

Glen Lowry: My name is Glen Lowry and I am the Assistant Dean of Culture and Community at Emily Carr University. Before that, I was the Chair of Online Learning and External Collaborations, so I have both coordinated and taught in an online environment for probably the past three and a half, four years, intensively.

Q. Could you just give a little background intro about this project and your class. What problem were you facing that needed to be solved?

Glen Lowry: I don't know if I approached it that way. The question is around how to transform learning situations, particularly around English, that- I have a PhD in Literary Studies, so my background is very much book-based, and I'm interested in print culture and the history of print culture. But increasingly I'm curious about how new forms of digital media are transforming in the way that we think, the way that we speak, the way that we teach, the way that we learn and how are we going to bring those into our course? I also like the social aspect of social media. I think that that's very cool, that when we're dealing with large groups of students or even sometimes small groups of students, there is an opportunity to speak to different students within that group using different tools. So I guess these are general problems that I have struggled with as a teacher and a learner for a long time. Diverse learning styles, how to make the best use of the space, how to get beyond the bounds of the book and the room, which I think is kind of a larger philosophical project or problem. And I've been teaching in various ways using content management systems, Moodle, Blackboard, Drupal, those types of things, blogging in my own work, and from that, wanted to keep exploring that. And from a BC Campus blogging project probably six or seven years ago, I met David Gratton at Work at Play, and talked about how I would like to use blogs and use software to get outside of the box of Powerpoint. I didn't like the way that Powerpoint slides were organizing all my thinking, and weren't nearly dynamic enough in how I could share information, but also in how people could speak back to me. And as an instructor, you want people to talk back. Maybe not all the time, but you do. So it kind of- he was struck by a presentation I made that was making some of these points, and made a habit of kind of inviting me in to Work at Play every year or every six, eight months to see what they were doing, because they were developing different software applications that would allow you mash things up, snip bits of the web, do some fairly cool tricks. And then I guess two or three years ago, he brought me in to show me one specific software that they'd developed called DEQQ. And DEQQ is a channelling software that allows them to take discussions that are happening on Facebook or happening on Twitter and bring them back to a website. And I thought, oh, that's very cool. That is a way of opening a social media channel in my class that

would already tie in to students that are on Facebook or who are on DEQQ. So we decided to try it out. I guess the other part of the problem, to go back to your question, was I was given responsibility for the large English lecture courses, that we went from doing small group, 25-student seminars in first-year English to 200-student lectures. And I thought, that's a good opportunity for us to begin looking at ways of creating more interaction between the lecturer and the student and opening up new modes of communication. So DEQQ came with that change, and was one of the tools that we used, along with Moodle, to in some ways transform or at least speak to the space of the new classroom.

Q. How does DEQQ work? How would a student connect to DEQQ from their Facebook account, or directly? Where does the interaction actually take place?

Glen Lowry: Okay, well, DEQQ is a stand-alone application. And so the students can open DEQQ and either sign on using their Facebook credentials or their Twitter credentials. But they're basically going through DEQQ. And DEQQ has a way of pulling their feeds from Twitter, Facebook, or their own proprietary DEQQ user ID if they want, and displaying them in different ways that actually is less distracting. They've done a nice design job, relative to Twitter or Facebook. It's actually a designed space. And that's a stand-alone AIR app that works on Windows-based computers, Mac computers, but it also works on the iPhone, too. And it has a browser-based version of it, so there are a number of ways that the student can get into it. And that was one of the important innovations, that there really is no way not to get into it if you think about it. Blackberries, iPhones, web browsers, so you don't need a high-powered connection.

Q. And even if you just have a desktop computer, you can still be involved. There's so many papers I read where everybody gets an iPhone or iPad, but realistically that doesn't happen in large classes. Students are coming in with this and that, and how do you accommodate all of it? It's tricky.

Glen Lowry: Yeah, and I think that that was one of the, for me, maybe selling features isn't the right word, but one of the aspects of DEQQ that I really liked, is that it was multi-platform. And that once you set it up, your ID could work in any of these situations. It's also easy to embed it in Moodle. So I always embed it in Moodle. I don't know how it does it exactly, but you can just basically embed the HTML code the same way you would a YouTube video. And it keeps a live channel in your content management system. One of the things that we did when we first tried it is we gave the students an option of getting their own DEQQ ID and password, and that didn't work so well. That the students didn't want to do that if they already had Facebook and Twitter accounts, or if they didn't have Facebook and Twitter accounts, then they probably weren't going to want a DEQQ account either. So it seemed to be somewhat redundant and not really worth the effort. I'm hoping- we're in the process of negotiating for the fall how this is going to work next time around, but I'm hoping next time we do it, it will run through Emily Carr's LDAP database, so that any student ID will get the students in and running without any problems. The other issue that the students struggle with and that we've certainly talked about amongst the instructors is privacy and anonymity. I personally like that this is public and live and that people can see what you have to say, because I think that's an important part of a university education

is to have something to say to the world and in the world. I recognize that not everybody thinks that, and students, particularly first-year students, are not always comfortable with that. And that there are certain issues of privacy. So one of the things that the LDAP theoretically will allow us to do is to strip off usernames and to keep it all in-house behind Emily Carr's firewall, if we should choose to do that. So that will be an added capacity, and it'll be interesting to see where that takes us in the future.

I should have mentioned two things as background. One, that this is a research project. That Emily Carr was funded by NSERC to do a five-year project around social media, distributed learning and a number of other things. And so we have a SIM Centre, which is the Social and Interactive Media Centre here at Emily Carr, and Work at Play is one of the partners that came in on the NSERC grant early on. So we're trying to figure out how these tools work, and also how they are potentially going to transform post-secondary education. So that's one of the background questions.

Q. What year is it in, then?

Glen Lowry: We're just starting year three of a five-year program.

Q. What were some of the challenges and pitfalls that you encountered along the way? We talked about privacy and students' reluctance to log in. Was there anything else that you didn't expect that you had to tackle, or that you did expect?

Glen Lowry: Yeah, I don't think I- nothing really totally surprised me. I've been doing enough online teaching and working with technology for a while. Difficulties are in changing peoples' expectations around what education is, how it works, what type of dialogues are we participating in that are meaningful dialogues. What are not so meaningful, ie. Facebook and Twitter. And I think that this cuts both ways, both with faculty and with the students. That when students come to university, and I was the same, I'm sure it's true of the majority of students, you come with a set of ideas about what university's going to be, a certain kind of gravitas. And lectures even perhaps more so than the small group learning. And so I think for some students, they're not really prepared to understand how this fit with their preconceived notions of what a lecture would be and where authority would reside, and what modes of discourse would be allowed and which wouldn't. So, you know, asking students to share YouTube videos on the fly, or to, you know, celebrate lip-syncing in a class caused some hesitation from some of the students. From a faculty perspective, I think some of those things are still at play. You know. Who's the authority here? What do I know? Why do I want to get in the swim? Universities historically have been built around libraries, and a very static form of knowledge that is both available and protected, right? It's available because it's in the library. It's protected because it's in the library and only certain people get access to that library. When we start talking about the internet, we're talking about a very different relationship to information, knowledge, publication, that changes a lot of our thinking about cultural authority, and particularly academic authority. I don't think it totally blows it up, but it shifts it in a way that makes many of us nervous. You spent most of your life learning how to work your way or find your way around a library, and then suddenly Wikipedia and YouTube are the go-to places for most journalists and writers, at least in the

short term. So I respect that. And then the other side is workload. That we all learn to teach in a particular way, and when you change that in any way, that requires some thinking, some tweaking, some issues. When you change it dramatically and try and open up a backchannel, so that the students can respond to you on the fly in your lecture, that's a significant rupture, which I respect. I'm excited by it, like I think it's going to mean a lot in the coming years. But I can't expect the six or seven other people I'm working with to share my enthusiasm. So that was another one of the problems, is getting buy-in from the faculty. With any of these things, buy-in from the students, buy-in from the faculty. Those are the biggest problems. And there are techniques that we learn to create that buy-in, I think. But I'm still learning those.

Q. The idea that students are expecting this authority, and then Facebook and Twitter are to them such personal things. It symbolizes hanging out with their friends, just being silly and goofy and all of a sudden it's taking with they associate with this goofy, fun, light-hearted friendship thing, and saying okay, now you're going to use this for this serious learning thing that could affect your entire life. I could see that could cause a little bit of internal conflict, and not understanding how you can put these two things together, and what do they have to do with each other? That's pretty interesting. I hadn't thought about that angle of it.

Glen Lowry: Well, yeah. I think- I forget about it all the time, but I also forget when and where I learned. And, you know, doing my graduate work during the late 80s or early 90s, the personal was political. I had very strong teachers in terms of cultural politics and feminist politics, and understanding that you always have to be interrogating the public and the private and the moments of intersection or bleed between the two of them, that the classroom would never be limited by the physical built environment that you're teaching in. These were all early forms of indoctrination for me as a thinker and an academic. So yes, when Facebook comes online and Twitter starts to tweet away, it's like, this is perfect. This is the kind of space that we want to move into. Forgetting, perhaps, at least momentarily, that students don't necessarily want to give up that kind of compartmentalization. That it's nice to keep the private and the public separated, even if they don't do a very good job at it. As we see with the riots, and how this whole city's gone crazy in turning your neighbours in, but that's another moment.

Q. Yeah, that's been just bizarre to watch that. Basically watching the riots recreating themselves in virtual form.

Glen Lowry: Well, and I think, to go back to the problem that you asked about at the beginning, one of the problems is, what is our professional, public and ethical persona that as our means and modes of communication, as our interactions shift to take on larger geographic and sociological areas, how do we deal with that? And I think that by ignoring what's happening on Facebook or Twitter or surveillance cameras, we're going to do some pretty crazy things. So to see Christy Clark stand up and say that we should all turn in our neighbours on the moment of the riot, it's like, well, wait a second. Have we not learned anything about public space, about due process, about juridical subjectivities? On and on and on. And so I think one of the problems, one of the responsibilities is how do we work with young people who are getting

professional post-secondary education to take them to a place where they're smarter about how they put themselves out in the world? You know, that there's famous examples of - actually, scare tactics in the newspaper, probably ever week about young people doing stupid things with Facebook. Not necessarily young people. Politicians doing stupid things with Facebook.

Q. There was a story recently about a young girl in Germany. She made a party invite and forgot to make it private. I don't know how it caught on, but something like 10,000 people RSVPed to it and they had to call police and horses, and she had to flee for the day. People were out there in front of her house, chanting "A birthday is not a crime!"

Glen Lowry: That's a great moment. Something that's kind of unimaginable even four or five years ago is now a problem. Every parent is worried that their kid's now going to advertise their birthday party.

Q. Yeah, and put their home address up. That's something that has been talked about for years, hypothetically. Don't put your address up, don't say you're going on vacation, somebody might put the two together. And that does happen, but coming at it from that weird angle like that.

Glen Lowry: And I think we have to learn those behaviours, right? It's like when bank cards came out and people would write their password in a Sharpie on it. You kind of gotta learn not to do that. And also, from a researcher or intellectual perspective, we've got to ask what this means. You know, what did bank cards mean? How has that transformed society? How has that transformed the way that we think about ourselves, our economic and cultural capital, blah blah blah? And I think that the same is true with these new modes of social media. And I also, in very pragmatic ways, I think that it's huge to give certain students an opportunity to participate in the discussion. Students who might not otherwise feel comfortable speaking up in class. And so I've always been committed to online learning and educational technology because it broadens it. It includes more people, people who can come into the discussion in an asynchronous mode, or modality. Also visual learning is more important. You can do more with audio. So there's just more than you can do that will allow you to expand the portfolio of learning styles that your course is engaging with.

Q. The main focus of our project is the mobile perspective and using mobile devices and untethering people from their laptops to a degree, or learning anywhere. So for this, did it give the students some of that freedom that they could be doing some of this on their phone wherever they were? How did the mobile aspect of it play into it?

Glen Lowry: Well, that was one of the initial research problems or questions that we wanted to look at, is how do you expand the lecture beyond the lecture? How do you break it out of that room with 200 students and allow students to be thinking about the course when they're riding the bus or when they're walking around? Honestly, we didn't have enough of an uptake to get to that point to figure that out. That's still an open question for me, and it's still one of the guiding

principles about why you would go there. I would like people to think about their learning as they're rioting, or whatever.

Q. Well, if people did that, there'd be less riots.

Glen Lowry: When you're out in the mall, when you're riding the bus, when you're walking along the seawall, when you're doing whatever it is that you're doing, there should be points of contact with what's going on in our learning. Particularly if the purpose of our learning is communications and kind of cultural study. So I like that. I like that I can kind of have the sense that people are carrying that with them, even if it's just killing time by looking on their iPhone or whatever it is they're looking at. Personally, I like the other side of it from the kind of knowledge producer side, that this thing follows me wherever I go. That is, I'm surfing the net thinking about a lecture, traveling, even going to events, listening to other speakers. All of that mobility that has now become a part of my life as an instructor and a professor is reflected at least in part in this attempt to adapt social media. So absolutely, mobility is important. I haven't thought about it or been all that excited about mobile technologies per se. That I know I've used an iPhone and an iPad for a long time and I know what they're good at and what they're not so good at, and I don't think they're the kind of place where you want to get into lengthy discussions. They're great for audio, you know, podcasts and that kind of thing. So I like that, that through DEQQ or through Twitter or sharing media links, those students riding home after a lecture can pull up some YouTube link that we've sent out or some TED talk that is somehow relevant to what the class was about. That kind of bleed into everyday life is really exciting for me. And that's a form of mobility. I'm also interested in mobilities theory as part of the work I do. I'm thinking about people like Tim Cresswell or John Urry and how mobilities has to be a part of the social sciences. Rather than places and objects, we have to think about how networks are being developed and how people are moving. So much of post-secondary education now involves students coming from somewhere and maybe passing through the city or even through the institution, that students move around UBC, Emily Carr, UVic. There's quite a lot of mobility in the way that we study now. And I think that social media, the way it follows us, it can both speak our paths, but if a student goes from Emily Carr after two years to UBC, you know, changes their course and decides to study something else, I want all of that discussion and the connections and the links that they felt are important to go with them. And I think that social media and the digital realm does that. We've got to find better ways of indexing it and holding it and packaging it so we can make it more manageable, but mobility is absolutely a part of it, even if it's not object-based mobility.

Q. What would you say have been the results? What have you seen the transformation being, or how has this changed things for better or for worse, using DEQQ and all this in the class?

Glen Lowry: I think that the most positive outcome I've seen is more around possibility. That when students talked to me about the course after, they were excited by the possibility and a little discouraged because their classmates weren't as enthusiastic, or their particular instructor didn't really want to go there. But it gave them, and I think some of us, too, a glimmer of what's

possible. And that maybe some of this stuff that they're doing, blogging, tweeting, Facebooking, may have value, and may be an important part of the discussion. That came back to me through the students in a number of ways. And so I think that that's very, very encouraging.

Q. Any particular stories that kind of jumped out at you, or anything anecdotal?

Glen Lowry: Well, anecdotally, it's just, "Oh, that was so cool you tried to do that". Or that we did, you know. There were no great anecdotes. There was a lot of discussion at the beginning about kind of standard stuff, is this mandatory, why do I want to do this? And it wasn't mandatory. And I never really- I don't think I would get in a position where I would force somebody to do something. I think the idea of opening a conduit or another pathway is just opening something. We're not going to stop having them read books, and we're not going to stop giving lectures, and we're not going to stop having discussions and having students write papers and mark them and- all of that stuff that we always do, we always do. So when we proposed DEQQ, or brought DEQQ into the course, it was in addition to, and because it was running through Moodle, it was entirely redundant in the sense that people could kind of look at Moodle and see everything they needed to see, and they would repeat a lot of that. But I was really struck with how that was seen as a potential threat. I'm still not entirely clear where that's coming from. But I think that it does immediately make people think about responsibility. Suddenly I'm responsible for having something to say, having something to add to the discussion, and how dare you ask me? Which, again, I'm laughing about, but it's a concern. That increasingly, I think we do compartmentalize. In BC they have standard exams and I think a lot of standardized provincial exams and a lot of places, other provinces, other countries that are feeding Emily Carr have standardized exams. And the standardization of education is not around encouraging people to speak and to participate and to wonder. It's about repeating something. And so when you open this channel that actually asks them to direct and to speak to and ideally to push the instructors, the lecturers, in new directions, that's a paradigm shift that students are not entirely comfortable with. And so that became clear reading the Moodle arguments, and kind of talking with students through some of this in class. It's, "Why do we have to do this?" You would think I was asking them to give blood, or you know, run a marathon before class or- because truthfully, they didn't have to. They don't- I'm not asking you to do anything. I'm saying, this is an option that's available to you, should you want to use it. And so that really struck me, and that still strikes me as being interesting.

Q. Yeah, it's the kind of "is this on the exam?" mentality. Even as a good student, sometimes it's more about working the system and knowing how to play the game. It doesn't necessarily mean that you're expanding your mind in any useful way, it just means you've gotten savvy to what's expected. Then when you're pushed a little bit, your reaction is "awwww" - you know you can do it, but you know you can't coast.

Glen Lowry: No, I think that's a very good way to explain the problem. It's absolutely- they talk about two things that have become clear to me. One is that the millennial students are risk-adverse. And I think that's absolutely true. Increasingly, I see students who seem to be concerned about taking risks, even if they're not big risks, like "open this software and look at

this discussion for five minutes". It's not a great risk, but it's different, and if the student has figured out the system, it's unprecedented, so they don't have to pay attention.

Q. When you think about it, they're raised with minimal exposure to possible risk and disruption. The playgrounds have soft padding. So when you're finally pushed out of the nest, you have no experience in handling these things. Somebody has always protected you from it. So that's interesting.

Glen Lowry: Yeah, I think that that's exactly right. Randy Lee Cutler, one of my colleagues here, does a really interesting talk about millennial students and the fact that they were the first kids to come home from the hospital in a car seat, and how their entire life has been kind of protected in that way. You know, you never walk to school by yourself. You always have a parent walk you there. I'm constantly amazed at what students will ask of a professor, or who's responsible for a failing grade. You know, when I went to university, it was extremely liberating in some ways that you knew the buck stopped with you. Nobody really cared if you went to class, nobody cared if you did the assignment. You'd fail if you didn't, but that was kind of your own prerogative. And learning to enter into that space was really important. The students, the ones I'm seeing, a lot of them don't feel that freedom. They feel that responsibility. And I think maybe to be sympathetic, you're talking about generations that are dealing with more open channels of communication than ever before, and we're going to open one more.

Risk aversion is absolutely real. There is a shift in the kind of dynamic that students and parents, and I think parents are another part of this mix, are bringing into undergraduate education, and probably grads too. That's another story. The other is this idea of the digital native, which makes no sense to me. Okay, students may look on Facebook, they may have a laptop, they may have spent their entire life in front of screens. But they actually don't know how to do anything much beyond a kind of basic level. And I'm constantly reminded of that at the art school, where you see painters, filmmakers, animators, people who have used this technology for 20 years and are extremely advanced practitioners, even if they have a full material- like I'm a painter in the studio making large-scale paintings. They still know how to use the internet, their email, in very interesting ways, because they recognized or they've kind of grown up using it, that it would be part of our portfolio, our personal identity in the world. And so I think the idea that students are coming with all these skills and tools that we never had isn't entirely true and doesn't really help.

Q. You mentioned when we spoke on the phone that if they don't figure something out right away, they just decide it's too hard.

Glen Lowry: Well, that's definitely our experience, that if they didn't have a Twitter account, and there was some technical issues with the DEQQ interface login at the beginning, that was a show-stopper, that one or two tries, it's- can't do it. Too hard. I think the other thing, too, around this instant gratification is it was never clear to the students, and I don't know if it's entirely clear to me, what they would get from this. You know, that okay, I've looked at a YouTube video and read a few Twitter feeds. What do I get? Does my mark go up? Is that worth 20% if I read 20

Twitter feeds? I don't know. How much reading do we expect people to do? How much conversation is good for us when we're trying to learn something? These are not tangible deliverables, and I think that that risk aversion makes them think that way. I'm not going to open this window because there's nothing on that that's going to get me exactly what I need to finish the assignment or to get the grade, or- and I hadn't thought about that until just now when you were talking about it, that that's probably an area that I have to think about, address somehow. I hope to hell I don't have to make it something I grade on. Grading students for every click of the mouse is not a pretty idea.

Q. What are the advantages and disadvantages of using proprietary software like DEQQ, that isn't open-source or readily available anywhere?

Glen Lowry: One of the immediate responses to that is that because it was proprietary, because it was driven by Work at Play and they were participating in this, we had their attention. So they could fix things for us. Not going to get Twitter or Google to fix much for 200 students. So that side of it was good. Part of the early discussion with Work at Play, too, is they're trying to understand monetization and open-source, and I think that that is a really interesting problematic. So I'm kind of- I like the bleed between those two things, too. Again, I'm not too hung up- maybe Work at Play doesn't want me to say this- on a particular piece of software. That's not really what this is about. At this point in time, this was good software, it still is good software, I'll use it again to do something. But I fully expect that the space will change in the next year or two, and that software will either transform itself into something else or be replaced by something else.

Q. Yes, I was thinking what if you get invested in this and they change direction or something like that?

Glen Lowry: Yeah. So one of the things that we did learn is that having students locked into DEQQ's own proprietary ID or user identification system didn't work, and we dropped it. So there's very little investment that way, that the students are still using Facebook or Twitter, and in fact DEQQ has dropped that from their software. They don't use it any more anywhere. So they kind of learned from that. And it's not about adding another set of protocols or IDs, it's about channeling discussions. And there're APIs, hashtags, there's all sorts of things that are happening already that are pretty simple fixes if you're trying to channel a discussion. We can already do a lot of this stuff with Twitter.
The proprietary software allows you to control more of those parameters. The other thing that I really like about DEQQ and liked off the top was that it was designed, that it looks pretty good. And in an art and design school, that matters. Students get hung up on fonts and Facebook is god-awful to look at.
So, more control through the proprietary, but learning lessons of Blackboard and some of the early content management systems. You don't want to get locked into that. It doesn't make much sense.

Submitted by Natasha Boskic (natasha.boskic@ubc.ca), July 2012

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Q. What would you advise to other people thinking about bringing in this sort of technology into their classes?

Glen Lowry: Well, I don't think that it's- to go back to where we started- necessarily solving any problem. None of these things that make our life easier actually make our life easier. It's another set of relationships and problems and concerns. So if you think that it will make something easier, then that's probably not the right way to get into it. You should probably have a kind of research interest in it. Be patient. The things don't work how you think they're going to work the first time. And it takes a little bit of time. It's a learning for the students and for the instructors. I think it's potentially very rewarding, that it makes you think about various aspects of your knowledge base, of your delivery, that you don't have to think about, and I think that that kind of self-reflection is a good thing. So it's an easy way to put yourself under the microscope, if you're thinking about your approach to teaching or pedagogy or even how you think about media and culture. So for those reasons, it's good. Keep it as simple as possible. That spending more money, having more gadgets, having the most up-to-date software is not necessarily the best way to do this, I don't think. That we have amazingly powerful, relatively accessible, relatively low-tech tools available to us right now through Twitter, through Facebook, through Google Docs, through a number of other things, that work pretty well. And using some of those tools- they're already changing the way that we work. So I think it's fun to think about how they're changing the way that we teach. I don't know if I've learned any great lessons that I can impart to anybody, but. Try and do it in a dialogical situation, too. Talk to your colleagues about it. Find some outlets. Let's have this discussion. Because I think there's amazing things happening in little pockets all over different universities and different cities, and it seems to me not enough of that is connected. That we're all reinventing the wheel over and over and over again. So by all means, try and tie in to somebody else.

I think that one of the popular problems that we have, or misconceptions, perhaps, is that technology is the point. There's too much focus on the technology, and it's- I understand it, I've got a lot of gear around me all the time, but really, it's content. And what are we trying to say? And I think that the content is shifting as we move into different types of media and different modalities of discourse. It should be content-driven, and really push that content, so that people actually forget. The best thing that I could imagine for me teaching this course, and having a backchannel and DEQQ and all of the bells and whistles spinning along, is that people actually forget that those things are working, and that there is something that we're trying to figure out and talking about that is the main concern. That is my goal, and I think that's what we should be working towards. But too much of the discussion is on the actual gear or the software or the device, rather than what do we want to talk about? What are we going to say? And so I would like to see that. I often think of the telephone as a good example. The telephone is driven by technology. It's driven by software. When you pick it up to phone somebody, most of the time you don't think about that. Right? That you just dial away, and your friend miraculously halfway around the world probably comes in and starts talking to you. Well, that- technologically, that's a major feat that took a lot of software and interface development to get to the point that we're at. And I think we need to remember that. We get too hung up on these little bits of technology and

Submitted by Natasha Boskic (natasha.boskic@ubc.ca), July 2012

little bits of interface that really are going to just either disappear or be absorbed into a larger system.

Submitted by Natasha Boskic (natasha.boskic@ubc.ca), July 2012