

EDUBLOGGING AND DISTRIBUTED EXPERTISE IN MUSIC TEACHING

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ABSTRACT

The pedagogical potential of edublogging—blogging used as an educational tool and strategy—in music teaching has been previously explored. In this paper, the author reflects on these edublogging experiences as a teacher from a distributed cognition perspective, as opposed to a traditional cognitive perspective, which does not give due recognition to the social and contextual dimensions of knowledge and of the learning process.

First, the edublogging scenario in each case will be seen through the lens of distributed cognition in respect of the nature of its learning community, learning environment and learning culture. Then, these instructional endeavours are evaluated against the distributed-cognition ideals. Finally, the relevance and implications for music teachers will be discussed. In particular, the author will propose an approach to teaching music that leverages the potential of edublogging to draw on distributed expertise. Apart from aligning with the current trend in learning theories towards emphasizing distributed cognition, the proposed approach in part also offers a viable solution to the challenge of addressing an increasingly

expanding music curriculum that embraces world musics on the one hand, and students with diverse musical backgrounds and interests on the other.

INTRODUCTION

Educationists have been advocating the use of ICT in teaching for some time now, not least because ICT has the potential to lend a supportive arm to collaborative learning (Hirsch, 2005b). It is against this backdrop that the present paper discusses the use of blogging to facilitate the capitalization of distributed expertise in education.

The pedagogical potential of edublogging—blogging used as an educational tool and strategy—in music teaching has been previously explored (Chong, 2006a, 2006b; Chong & Soo, 2005a, 2005b, 2007). In this series of teacher-as-researcher investigations, edublogging has been found to have the potential to motivate learning as well as to foster higher-order thinking and collaborative learning in music theory and analysis classes. As a further step to draw pedagogical insights from the use of blogging in teaching, the present paper relooks at these past experiences as well as subsequent ones through the lens of distributed cognition.

DISTRIBUTED COGNITION

In post-Vygotskian educational psychology, the socio-anthropological work of Jean Lave and Etienne Wenger (Lave, 1988; Lave & Wenger, 1991) has proven seminal in precipitating a more widespread and enhanced recognition of the social and contextual dimensions of knowledge and of the learning process: “‘Cognition’ observed in everyday practice is distributed—stretched over, not divided among—mind, body, activity and culturally organized settings (which include other actors)” (Lave, 1988; for a useful introduction to the literature on situated cognition, see Wilson & Myers, 1999). In other words, knowledge (or

intelligence) is seen as residing not only “inside one’s head”, but also “in the social, physical and artifactual surroundings in which cognition and human activity take place” (Fischer, 2006). A teaching approach premised on the traditional cognitivist view that knowledge is essentially “inside one’s head” and that teaching primarily involves transmitting this knowledge from the teacher to the student is increasingly regarded as educationally untenable.

Such an awareness in fact brings to the fore two related aspects about learning—the situative and the distributed nature of knowledge. Whilst not denying that knowledge is embedded in and therefore contextualized by the learning environment and its attendant social—both interpersonal and cultural—milieu (Lave, 1988; Rogoff, 1999/1984), my interest here is in the distributive aspects. This idea of distributedness has been variously expressed as “stretched over” (Lave, 1988), “spread over” (Hewitt, 1998), “embodied” (Wilson, 2002) or the like. Whatever the expression, the basic recognition is of *an indivisible system of cognition* comprising “the mind, the setting, [the] activity, artifacts, signs, symbols, social processes and cultural factors”, all interacting and interdependent (Hewitt, 1998, after Greeno, 1997).

Not surprisingly, there are different scenarios of distributed knowledge. When capitalizing on what he refers to as distributed intelligence to develop socio-technical systems for improving the human condition, Gerhard Fischer for one speaks of distribution among people and distribution between human minds and artifacts (Fischer, 2006). Educational researchers in the Vygotskian camp likewise have taken cognizance of the uneven distribution of knowledge and skills amongst teachers/parents and students in the classroom. In general, we may, following Gavriel Salomon, identify two categories of distributed cognition: the first

involves cognition distributed through some shared activity, the second involves a form of cognitive “off-loading” onto certain tools (Salomon, 1993). Naturally, educationists are most interested in the first, though they certainly are mindful of the latter type. Whether the uneven distribution is naturally occurring or engineered, the “asymmetry of knowledge” or conversely the “symmetry of ignorance” (Fischer, 2004, after Rittel, 1984) creates opportunities for collaboration, if not the motivation to do so as well. Aronson’s (1978) jigsaw method of cooperative learning exemplifies well an artificial distribution of knowledge amongst learners to facilitate collaborative learning (Brown et al., 1993). In a less contrived manner, a knowledge-building community instances one that thrives on individual expertise to advance knowledge in a collective manner (Hewitt, 1998). Similarly, insofar as it incorporates collective problem-solving, cognitive apprenticeship leverages on synergistic interaction in some ways (Brown, Collins, & Duguid, 1989). This paper is also primarily concerned with this type of distributed cognition for collaborative learning, but one mediated by blog communication.

BLOGGING AND COLLABORATIVE LEARNING: 3 CASE STUDIES

That blogging is seen as an ideal tool for fostering collaborative learning has been well-recognized (see, for example, <http://www.weblogg-ed.com/why-weblogs> and <http://anne.teachesme.com/category/pedagogy/>): more than being just a personal online diary, it is fast becoming a great place (in cyberspace) to share and develop ideas. One educator goes so far as to claim that weblogs (and wikis) “have the possibility of becoming perhaps the greatest education collaboration tools introduced since the World Wide Web became known in K-12 circles in the mid-1990s” (Hirsch, 2005a). I shall therefore be interested to examine the extent to which my previous edublogging strategies have harnessed blogging for

collaborative learning involving the kinds of distributed cognition described above. Before we proceed, let us first briefly recapitulate the edublogging studies under review.

In the first study, six undergraduate students in a year 1 semester 2 music theory and analysis class were each given an individually-owned blog. As part of the course requirement, six different blog-based assignments were given, of which they chose to do four. In the second study, again six students were involved in a similar course but this time they were grouped into threes and given a group-owned blog to do their group project. Table 1 summarizes some of the details:

Table 1: Summary of two pilot studies

	1 st Pilot Study (Chong & Soo, 2005a)	2 nd Pilot Study (Chong & Soo, 2005b)
Technological setup	Student-owned blogging strategy	Group-owned blogging strategy
Sample size	6 individuals	2 groups of 3 students each
Blogging tasks	At least 4 out of a choice of 6 for each individual: <ul style="list-style-type: none"> i. Comparative analysis of given musical excerpt and one chosen by student ii. short composing task + peer evaluation with justifications iii. choice of two self-reflection tasks iv. critical reading and response v. mini-research task vi. analysis of pop song 	Free-choice of group project on pop songs or musicals; to include: <ul style="list-style-type: none"> i. background information on song, composer and/or singer ii. song analysis iii. compositional response Presentation mode: information booklet or website

Following these two pilot studies, a third study was conducted. Once again, six students in a similar course were involved. This time, I reverted to the individually-owned blogging strategy and used it over two semesters instead of one. In the first semester, students were asked to share and discuss on their own blog their analysis of any three songs/pieces from the repertoires of popular music, musicals and film music; the intention here was to complement their study of western classical music in the lecture component of the course. Questions were later given, prompting them to reflect on and consolidate their learning at the end of the semester. In semester two, the same students continued to use their blogs to engage in music-analytical discussions. This time, they were asked to have a self-chosen research focus/question when selecting non-western classical music to analyze. At the same time, they were specifically encouraged to see themselves (and their teacher) as members of a learning community, each having and at the same time developing different musical expertise in the understanding of different kinds of music. As they embarked on this collective learning journey, they were urged to share via their individual blogs and learn from one another. At the end of the semester, test questions were custom-made for individual students based on their chosen topic and music to help them better consolidate and possibly extend their learning. And, in the spirit of communal sharing, these individual sets of questions were also made available to all for viewing; likewise, eventually, their answers and the teacher's comments.

A COMMUNITY OF LEARNERS: ITS NATURE AND CULTURE

In distributive learning,¹ the paradigmatic difference in comparison with the traditional teacher-centred model lies in the learning culture. The class in this case becomes a

¹ I use “distributive” here to refer to learning/teaching premised on the recognition of distributed intelligence: “distributed learning” risks being taken to mean “distribution of the learning task”.

community of learners in which the knowledge is/has been distributed (either naturally or by design) amongst members of the community who are collectively involved in the seeking, constructing and sharing of knowledge. In this regard, Barbara Rogoff's conception of such collective learning offers us a good point of departure in formulating a frame of reference to examine the extent to which the above edublogging ventures have capitalized on the synergy of interacting distributed expertise.

In Rogoff's participative model of learning (Rogoff, Matusov, & White, 1996), all members of the community are actively involved. They are very much given to take charge of their own learning rather than be passively following instructions. The teacher (or participating parents) may be present to give guidance and support, but the students essentially need to learn how to manage themselves as well as others in the process of the group inquiry: the whole inquiry process is ultimately structured by *both* the adults (teacher and participating parents) and the students. An important element in this collaboration is the "asymmetry of roles", meaning that individuals take on different roles so as to contribute complementarily to the shared endeavour even as they take up their individual responsibilities. At the same time, the differing levels of expertise and experience create opportunities for legitimate peripheral participation—an important characteristic of situated learning (Lave & Wenger, 1991). Ideally, the class should be fundamentally and coherently structured as a co-operative system as opposed to one which merely incorporates some collaborative learning in a piecemeal or isolated manner. In the resultant learning culture, everyone learns how to learn and share.

Following Rogoff *et al.* (1996), we may identify the following ideals founded on the recognition of distributed cognition/intelligence:

- i. the asymmetry of knowledge, seen as advantageous, is capitalized in the learning setup;
- ii. the learning process involves active participation among the participants, this may include collaborative work, peripheral participation (Lave & Wenger, 1991), or cognitive apprenticeship (Brown, Collins, & Duguid, 1989);
- iii. the learners take ownership of their learning and not only manage their own learning but also fellow inquirers; in this connection, the learners “must take charge of high level process for knowledge advancement” (Hewitt, 1998). As a result, the learning paths are collectively defined and structured as opposed to being dictated by the teacher;
- iv. this collaborative system is the primary mode of instruction and learning, as opposed to being incorporated on an ad hoc piecemeal fashion.

In all of these, the teacher plays the role of planning and setting up the learning environment and facilitating the whole process through modeling and coaching, amongst other things (Chong, 2006a). But researchers have also articulated a higher ideal in this regard: that the teacher should work towards “fading” (Brown, Collins, & Duguid, 1989) or “self-elimination” (Rittel, 1984) so that learners take full control of their learning. We shall address this point towards the end of this paper.

Now, to better understand the nature of the collaboration involved, it is useful to bring in the distinction between a community of participation (CoP) (Wenger, 1998) and a community of interest (CoI) (Fischer, 2001, 2005b). In a CoP, participants come from a similar disciplinary domain, whereas in a CoI, they come with different conceptual knowledge systems and skills. Obviously, a common ground and shared understanding would greatly facilitate

collaboration. It is therefore pertinent to bear in mind this aspect of the class community in relation to the learning task when designing distributive learning.

BLOGGING AND DISTRUBTED EXPERTISE

Next, let us clarify the role of blogging in collaborative learning. Educators are well aware that technology is no more than a tool. As one researcher puts it, “Technologies popular for casual uses do not make the transition to being learning tools, without a lot of effort on the part of teachers” (Lewis, 2005); blogging may have “the capacity to stimulate today’s technology savvy learners” (Metro, 2004), but it does not automatically facilitate collaborative learning: the teacher’s facilitation is critical, including establishing and maintaining the motivational climate of the class (Chong, 2006b).

Apropos the potential of technology for the harnessing of distributed expertise, Jim Hewitt and Marlene Scardamalia (Hewitt, 1998) have pointed out that:

- i. technology (read: blogging) can provide greater access to distributed expertise, overcoming “the logistical limitations associated with large group, face-to-face discourse”
- ii. open access to the student-created artifacts (in our case, blog postings) turns the latter into “intellectual resource for the entire classroom community”, which “can be subsequently used as a foundation for other, more advanced artifacts”

At the same time, we may add that

- iii. once these artifacts are available, the comment function on blogs allow members of the community (including the teacher) to provide feedback—what Fischer values as “back-talk” or the “critiquing” element (Fischer, 2005b).

In other words, blogs serve as a means to externalize knowledge, the product of which is then stored for sharing and getting responses. Needless to say, the communication facilitated by blogging extends beyond the classroom (Chong & Soo, 2005a, 2007). In a word, blogging can be a powerful collaborative tool that helps facilitate rich interactions to create a dynamic and generative community of learners with different expertise.

DISTRIBUTIVE LEARNING COMPARED

Let us first examine the nature of our learning community under examination vis-à-vis the CoP/CoI distinction. At first glance, it would seem that we were dealing with a homogeneous CoP here, once delineated by the disciplinary boundary of music theory. Indeed, there was a common ground insofar as the students were involved in learning to understand western music; this was very much the case with the first study where all the students were classically-trained musicians. In the second study, with the project placing more emphasis on popular music, a secondary musical interest and expertise in at least one of the students had emerged even though the students' musical background was similar to that of the first group. With the third group, we had the fortune of having a non-classically-trained pop musician as well as a very fine yangqin² player. Given that there are important differences in terms of musical mindset and musical practice in these two musical traditions in contrast with the western classical one (and the students having been strongly urged to draw upon their differing musical backgrounds for their projects), the community had more of the heterogeneity characteristic of a CoI, the two students in question being taken as representative members of their respective musical communities. The common interest then was in collectively understanding music across different traditions whilst mastering certain basic music-analytical skills.

² Chinese zither played with a pair of light bamboo hammers.

The distributive aspect aside, the kind of “collaboration” in the last study was also different from the earlier two, and certainly very different from the cases discussed by Fischer. In the first study, collaborative learning came in the form of peer comments and it was more the differing levels of expertise within more or less the same knowledge domain that was taken advantage of. In the second study, the group work element entailed more collaborative work whereby, even though each member initially focused on analyzing their own chosen songs within the scope of the group’s agreed-upon repertoire, they had to collate and consolidate their musical findings—but only towards the end of the semester. The third study had the group work element removed. At first glance, it would seem like a return to the first scenario, but in at least one significant respect it was different. In the second semester, after the first-semester initiation into blogging, the students were urged to think of themselves as working towards becoming experts in their individually chosen topic and that the class was to be viewed as a community of learners tapping into one another’s expertise and investigative efforts. The group project, if you like, was then a collective exploration of music across cultures, with blogging to facilitate the sharing of this knowledge.

In fact, the collaboration, taken in a broader sense, went beyond the class, very much made possible by the world-wide-web access. At one point, an ex-student from the first study contributed to the blog discussion of one of the students. As the facilitator, I also personally invited two of my colleagues whose musical expertise complements mine to visit the students’ blogs and contribute to the discussion if they like, so that (in Hewitt and Scardamalia’s terms) “the student-created artifacts” can lead to “more advanced artifacts”. On the students’ end, it was certainly obvious that a number of them exploited the resources on the web, including at least one academic paper from a mainland Chinese music conservatory professor. I myself had also on occasions pointed students to appropriate

Wikipedia articles and even to one group website from the second study for additional information. In the terms of distributed cognition, these constitute access to “materially-distributed cognition” (Hewitt, 1998)—knowledge distributed across learning artifacts—, the web being a repository of knowledge. This, in effect, “roped in” other communities of expertise albeit as passive contributors to my students’ learning. In this connection, it is pertinent to add that the students had not eschewed the more conventional mode of accessing expertise: one of them consulted friends about Jazz music and another interviewed one of the performers of the local band whose music he was investigating. Of course, the extent of the sharing of that knowledge gained depended much on the individual student’s reportage, unlike the web-accessed information which can be viewed first-hand by any one interested. But whichever the situation, of the three studies conducted, this latest group of edubloggers reached out farthest beyond the class in their blog-based collaborative learning!

PERIPHERAL PARTICIPATION AND COMMON GROUND

From the above discussion, it may appear that we were increasingly moving towards a CoI scenario. In one sense, this is true: insofar as we had one representative each from two additional music communities, the class in the third study had become “a community of communities”, or more specifically “a community of representatives of communities” (Brown & Duguid, 1991; Fischer, 2001). However, it would be misguided to think that peripheral participation—a feature more characteristic of a CoP—was absent. As it is, Fischer has noted that a community can exhibit attributes of both kinds of communities (Fischer, 2005a). Perhaps, peripheral participation play a much less significant role in Fischer’s CoPs given that his representatives are experts in their fields, but our students here are by no means experts in their field—not yet—and certainly not so in the primary knowledge domain of this course. Hence, whilst they were benefiting from a good range of expertise brought in via the

different modes pointed out above, they were at the same time mastering their basics as it were. The collaborative setting therefore allowed for peripheral participation. As one student in the third study, relatively inactive in her blogging, reflected at some length at the end of the second semester:

No doubt that my postings are much easier as compared to my other peers,...it allows me *to learn at a zone where I am comfortable with*. Within this comfort zone, I can explore all the features of the songs at my own time and pace. Together with other peers and facilitator's comments, it enhances my analyses and improves my knowledge of the piece. Some other peers are able to see musical techniques in the pieces that I do not see. I *constantly learn from them* and sometimes bring in some [of] my own point of views [sic] ... [italics added]

The novice status expressed here is of course relative to the knowledge domain in question. Hence, recognizing the symmetry of ignorance present, we may for example imagine some of the students learning, on the community's periphery as it were, from the pop-musician student about agogo music of the 1960s and surf punk of the 1970s; likewise with Chinese traditional music. The lack of response at times may be an indication of "lurking". In any case, the blog comments did reflect some fascination from fellow students over unfamiliar subjects and requests for clarification or additional information.

Focusing on the CoI aspects, it is easily apparent that the diversity of musical background was very much a boon to the students. Whilst in the first two studies, the learning only went as far as lateral application of concepts and skills learnt in classical music to music outside this repertoire, in the third pilot study concepts extraneous to classical music were brought in,

broadening the students' musical knowledge and understanding. For example, the mention of "power chords" in rock music pointed to a very different aesthetic towards open 5th chords; the idea of palm-muting added an often neglected dimension to the understanding of music (one perhaps somewhat analogous to the muting effects on western classical instruments, or, less obviously, to the noise element sometimes exploited in, say, harpsichord playing). In the analysis of musical structures, discussion of pop songs introduced such terms as riff, pre-chorus and outro on the one hand and turnaround on the other, suggesting that popular music can have their own structural elements distinct from their classical counterparts. In the discussion from the yangqin student, Chinese operatic elements were invoked to shed light on the yangqin concerto she was investigating. In these cases, the limitations of the knowledge system of one community—namely, that of the classical musician—inevitably showed up more than once: a common ground was clearly needed to relate the different terminological and conceptual systems invoked (Fischer, 2005a). In such cases, the teacher stepped in when needed to help establish a new level of common understanding by relating the new knowledge from a different musical tradition with what was formally taught in the lecture component of the course. In this way, the collective understanding of music achieved was richer and broader than was otherwise possible with a more traditional teaching approach.

FALLEN SHORT OF IDEALS?

Vis-à-vis the ideals drawn from Rogoff *et al.*, we may observe that the students were given the chance to take ownership of their learning and strike out their own exploratory paths. But, as noted above, they were not always sufficiently competent to proceed—nor embark, to begin with—on this journey without the help of a teacher. The idea of self-directed learning in a community of learners was very novel to them; there was certainly a tendency to look to the teacher for answers or directions. And so, as evidenced in their blog postings and end-of-

term assessment, they only managed their own learning here to varying degrees of success. Apropos the ideal of students managing their fellow students in the process of the collaborative learning, we need to recognize that the nature of the group work in the third study did not specifically call for such engagements. The second study, in comparison, allowed for more such opportunities. But, regrettably, not being conscious of this aspect of the learning process, I had not actively fostered this element in the students' group collaboration. Needless to say, the first study was much like the third in this regard.

In another regard, we have also fallen short of ideals, at least at first glance. Fischer aims even higher than Rogoff and her associates. For him, a teacher playing the role of “a coordinator, facilitator, and coach” does not go far enough, he envisions collaborative knowledge construction situations driven by a symmetry of ignorance whereby no participant takes the role of a teacher. Instead, as articulate learners, members of the community engage in largely peer-to-peer learning and take full control of the learning process, one which is facilitated by externalized ideas, concepts and goals (“objects-to-think-with”) (Fischer, 2004). But such an ideal would perhaps be possible with an adult community of practice, which is what Fischer, and Rittel (1984) for that matter, are dealing with. In a school situation, we need to accept that a class community does not have the same level of maturity and experience to achieve total self-directed learning. In this regard, Rogoff and her associates are justifiable to accept that in the collaborative model they are advocating, “whoever has the responsibility for leadership ... [should be] carefully coordinating with and assisting the others in a shared endeavor”. They have no qualms claiming that “it is consistent within the community of learners model for adults under some circumstances to provide strong leadership or extensive explanations to assist the group” (Rogoff, Matusov, & White, 1996).

My own experiences here would clearly support such a compromise (if one wishes to see it such).

Finally, in yet another respect, my edublogging attempts have not met even the ideals set by Rogoff and her associates. As I have designed them so far, the blogging component formed only one part of the course. As implied above, this blog-based learning was very much conceived to complement and supplement the taught component of the course. In other words, the collaborative system was far from being the primary mode of instruction and learning. To achieve this ideal, a radical overhaul of the course would be necessary—one that perhaps should be done only with better understanding of this new paradigm of teaching.

CLOSING REMARKS

In drawing upon the theoretical perspectives premised on situated learning and distributed cognition to evaluate my past edublogging endeavours, I have gone at some length to spell out the nature of the learning community and its attendant pedagogical ideals. Apart from using this to frame our evaluation, it was also to underscore the recognition that for edublogging to succeed, we cannot merely rely on the technology itself, we need to, in Fischer's words, "co-evolve the social practice" (Fischer, 2006). In Fischer's case, it was to co-design both the social and technical systems (Fischer, 2005a), in our pedagogical context, it means that besides setting up the learning environment (including the creating of the blogs) and planning the blog assignments, we need to be mindful of the critical need to first initiate the students into this new mode of learning, then facilitate the process thereafter in an appropriate way. To say this is to concur with dePaula (2001) that the real challenge in implementing edublogging is a cultural more than a technical one: the learners' "behaviors, goals, values, and attitudes toward education"—in other words, "the culture of education"

(Bruner, 1996)—need to be changed for blog-based collaboration (and indeed any new educational technology) to succeed in educational settings.

One of the great advantages of this approach to teaching is that it opens up the curriculum boundaries without necessarily eschewing a certain core curriculum. In our increasingly globalized society with students even in the typical neighbourhood schools becoming more international, and not forgetting too the increasingly diverse musical background and interests of our students, the blog-based approaches discussed here offer a means to strike a balance between teaching certain core concepts and skills whilst catering to the disparate musical preferences of our students. And unlike traditional approaches, differences in knowledge domain and levels are seen as assets and turned into pedagogical advantage. More importantly, it allows us to develop independence in the students' music learning, and an active one at that. The ideal, of course, is to transform them from being consumers of knowledge to co-producers. For the teacher, this would have been gratifying enough, but more than that, the unpredictability of the learning directions and outcomes taken by the students can be most exciting and rejuvenating for those who have been in the teaching profession for many years.

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