The Fine Arts and Media in Education Project: The Integration of Creative Arts-Based Activities, Wireless Technologies, and Constructivist Teaching Practices in Practicum Classrooms

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Overview

The main focus of the Fine Arts and Media in Education (FAME) project at the University of British Columbia is to work with artistic pre-service teachers to develop leadership in arts education. The BC Ministry of Education does not recognize specialists on the K-7 level. However, by implementing fine and performing arts in general classroom endeavours—including the infusion of innovative arts-based computer applications and technologies—practicum students offer sponsor schools new and exciting programs, as well as the possibility to strongly position the arts in elementary school classrooms. The FAME project was undertaken in recognition of the findings that the arts are especially apt to foster creative processes and expressions (Gouzouasis, 1995, 2002, 2003; Gouzouasis & LaMonde, 2004, 2005) and, further, to make learning across the curriculum more interesting by incorporating imaginative and playful arts-based activities (Singer & Singer, 1990, 2001).

In addition, the flexibility of wireless computer connectivity (Wifi) and arts-based computer applications allows us to utilize laptop computers as individual and cooperative creative tools that foster integrative learning in the classroom. In

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combination, arts-based activities and wireless technologies seem ideal to catalyse the use of constructivist teaching strategies (Becker & Ravitz, 1999), which, in turn, have been shown to foster understanding of complex ideas, problem solving skills, and the motivation for life-long learning (e.g., Brooks & Brooks, 1993).

The focus of the present paper is to discuss ways that the FAME elementary teacher education cohort prepares student teachers to successfully integrate creative arts-based activities, wireless technologies, and constructivist teaching practices in their practicum classrooms. The narrative reflections of a single student, who graduated from the 2004 cohort, are interspersed throughout the paper to provide anecdotal evidence of support to our practical claims.

Theoretical Framework

Constructivist theories have been said to promote teaching practices that include creating authentic tasks, designing interdisciplinary curricula, facilitating student initiative, group work, & self-assessment, in a student-centred/teacher-negotiated learning environment, as a means to effectively foster learning and personal meanings (e.g., Krapp & Weidenmann, 2001). The main focus of constructivist teaching is on how learners creatively and flexibly apply their knowledge and skills to solve problems. Arts-based compositional activities (e.g., choreographing, painting, music-making) inherently require founding skills that merge flexibly and creatively, and thus elegantly blend with the constructivist model. In addition, arts-based computer applications and wireless technologies can be used to foster individualised and cooperative, student-centered/teacher negotiated classrooms. Thus far, constructivist approaches, arts-based learning, and technologies have not been conceptually integrated in a model that could serve as a theoretical framework

for developing teachers. Our own theoretical framework, entitled Discover, Reflect, and Explore Arts Media (DREAM), has been implemented to bring greater clarity to the contextual basis for development (Gouzouasis, 2001).

Like Piaget's stage model of development, the DREAM model is dialectically rooted. It consists of three (non-linear) stages—*sessions, stations*, and *synthesis*—each of which relate pedagogically to arts and media. Whereas the *sessions* stage refers to traditional teacher-led practices (learning sessions/micro lessons), the *stations* stage refers to student-centred activities (practice stations/investigations/problem solving), and the *synthesis* stage to mediated, student-led learning environments that encourage learners to create their own novel ideas and inferences (synthesis/composition). Throughout each stage, the model connects and delineates how to adopt traditional arts-based activities (e.g., story-telling) as they are linked to the learning outcomes of the British Columbia (BC) K-7 Fine Arts Integrated Resource Package (IRP). In sum, the model holistically connects a pedagogical framework (constructivism) to concrete teaching strategies (arts-based activities), teaching tools (wireless technologies), and the administrative and political school background (BC's IRPs). The DREAM model thus provides a practical conceptual framework for learning/developing teachers.

Method

Since its inception in 2000, the FAME project has continuously been evaluated formatively. Data are obtained via student teacher questionnaires and in-class observations in the schools during the practicum.

Data acquisition and procedures

Each year, a staff member of the FAME project team works as a tech-support person for the student teachers during their 13-week practicum. The tech-support person transports a set of 14 laptop computers to the individual schools, so that during the course of the practicum, every pre-service teacher has access to the laptops for at least one week. During their turn, the tech-support person visits student teachers in their schools to help with planning and setting up a project involving the use of wireless technologies (i.e., iBooks) and arts-based software programs (e.g., iMovie, Kid Pix, Sound Companion, GarageBand, iPhoto, etc.). For the first project, the tech-support person stays in the classroom to provide assistance in the event of technical problems. During those classroom visits, observations regarding the pre-service teacher's use of instructional strategies as well as the student responses to the new learning environment are made.

After the practicum, the student teachers (35 in 2001, 36 in 2002, 34 in 2003, 36 in 2004, 36 in 2005) are given a questionnaire, in which they are asked to evaluate their own use of wireless technology and arts-based software programs in their classroom projects. Among other issues, the individual questions pertained to:

- the usefulness and availability of tech-support,
- the advantages and disadvantages of mobile wireless technology as compared to wired, stationary computer labs,
- the adequacy of the technology, the software programs and of the university training,
- the quality of support from the sponsor teachers and the school (district), and

- additional, free comments in regard to the use of wireless technology and arts-based activities in the classroom as well as in regard to their university training.
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In the present paper, comments made by one particularly thoughtful pre-service teacher in response to the questionnaire's areas of inquiry are presented in italicized text.

What creative arts applications (e.g., drawing & sound software) did you use the most?

The creative software applications I used the most, both during and prior to the practicum, were Apple Works, PhotoShop, iMovie, iTunes, and Sound Companion. Other applications or computer tools I used frequently: North Vancouver's Site Designer, Internet Explorer, Entourage Mail & Calendar, LimeWire, MS Word, Digital Video Camera, Scanner, LCD Projector, Apple Airports, digital (still) camera and the Shared Server for FAME.

For what purpose did you mostly use your iBook? (bold and underline all that apply)

Word Processing	*Email*
Web Quests/Research	*BLOGS*
Newsletters/newspapers	*E-Bulletins*
Digital movie editing	*Photoediting*
Audioediting (inlc. iTunes)	*Other, include. freeware/shareware (list below in bold text)*

Used iBook for students, as a supplement to the iBooks from the school during lessons. For instance, my students used KidPix3 (software not allowed on the North Vancouver machines due to copyright) on my computer. During Math, students who had completed work used my iBook for challenge problems found on the web.

Used iBook to present lessons & create teaching video tutorials on iMovie. For instance, during one lesson I brought children down to the carpet around me and had them look at a short Apple Works slideshow of mosaics, as well as other pictures.

Used iBook to create website for the classroom (photo editing and layout done at home – could also be done on my home PC, but the iBook made it a faster process overall, since I had access to PhotoShop).

Used iBook for immediate reflection on lessons (could be taken to an alternative space since it was wireless,) burning music, lesson or photo CDs for other student teachers and sponsor teacher, and for previewing iMovie/Quicktime movies I produced with my sponsor teacher prior to showing them to the students.

Both observational data and questionnaire data were integrated into the present narrative by the project researchers, who have worked as lead instructors and technology assistants for the FAME teacher education cohort.

Was continued access to the MUSES Computer Laboratory at UBC helpful during your practicum*?*

Particularly in the case of movie editing, it was extremely useful—the sheer number of clips I was working with had to be edited on a G4, as opposed to the

limited space on the iBook. I also enjoyed having more than one computer to use there. While I was waiting for uploading on iMovie on one machine, I would be doing scanning of student artwork on another. These are tools I did not have at home. The school did not have a scanner, so without MUSES I would have been more limited in my choices for the website.

Results

Our narrative first addresses the question of whether the pre-service teachers successfully integrated creative arts-based activities, wireless technologies, and constructivist teaching practices in their practicum classrooms. We then discuss the results with regard to our theoretical framework, the DREAM model.

For a successful implementation of arts- and technology-based activities in the classroom, several factors were crucial. First, the sponsor teachers had to be in favour of the idea to integrate the arts and technology into the general curriculum. Second, the student teachers required assistance from the tech-support person. Support was both educational/informative as well as technical/practical. That is, student teachers inquired about the possibilities of certain software applications (e.g., "Is it possible to use our digital photos as stills for a movie clip?") and the feasibility of certain projects (e.g., "Will an iMovie project be too difficult and too long for 1st Graders?"). The student teachers that felt somewhat insecure and hesitant in terms of setting up the computers and using the software applications in a teaching situation for the first time were especially happy about the support, and would otherwise not have tried to attempt such a project.

Is wireless laptop technology significantly different from wired desktop technology? If you think it is, please explain from your perspective?

Yes, it is different. First of all, many of the labs are set up with large computers on long tables. Getting between students is more difficult than when I set up the iBooks in my classroom. With the iBooks, I have more control over my classroom environment. I can easily set up stations, I can have a student work in the hallway, and I can have students work closely together in groups. One of the things I learned from the FAME experience is the power of the classroom environment to affect student learning. The teacher has the power to create a positive environment in that four-walled classroom space. The classroom is not just a learning space, but it is also a learning community. Within that space, both students and teachers know how to function as a unit.

For me, it was great to have the opportunity to do computer learning inside my own classroom instead of walking down and back to the computer room – a room with a different feeling to it. Students had access to their own supplies, I could prepare the white boards or chalkboards ahead of time for station work, and I could design how desks would be set up for the activity. The comfort of the students in their own environment affects their overall work product. Classroom management issues were minimized, because we were dealing with a familiar space and I had control over groupings. While desktop computers certainly have the same software capacity as the wireless ones, and are sometimes necessary for larger projects requiring greater memory such as iMovie, they don't have the flexibility.

Overall, my students were excited to use wireless technology. Many of them already had computer experience, but those same students may or may not have experimented with a laptop. So, the technology added an innovative aspect to our

curriculum and motivated all students to participate. I even used it as a reward for staying caught up on homework. Those who turned in all homework were allowed to participate in iBook activities, whereas those with assignments still pending had to wait. The iBooks played a significant role in building quick rapport with my students – which is one of the largest challenges for the practicum teacher, stepping in to someone else's pre-established classroom environment and making it his or her own.

The only negative aspect to current wireless technology in the elementary setting is this: the tools are too fragile and too expensive. Even during our FAME experience, several student teachers experienced problems with their LCD screens. The connection between the LCD screen and the keyboard on the laptop is fragile. It has been noted in online forums that other Apple users have experienced this, as well. In fact, many found they had this problem within a year of initial purchase. The LCD screen is wonderful, but it can't be touched. When damaged, replacing the screen almost costs as much as getting a whole new laptop. At our school, 4 of the 17 laptops had problems and had to be removed off and on during the practicum.

This doesn't mean that iBooks are less reliable than desktops, because the desktops were having issues, as well. The problem is, desktop computers do not require as much supervision, they don't cost as much as the wireless laptops, and they require less headache for setting them up. I noticed in my school that many teachers did not want to deal with the laptops because they require a lot of classroom management and set up. Teachers were told to hold students accountable for their use of the iBooks, since they were so expensive, by writing down students' names next to the laptop number. Worrying about this, in addition to passing out and collecting the laptops, as I mentioned before, can make the desktops seem more appealing. Teachers have not received training on how to manage the computers, and many do not know

how to set up the airports. Thus, a desktop lab that is all pre-prepared, given a teacher's many other responsibilities during the day, with 30 students or more in intermediate classes, is more appealing.

For the projects, it worked best if the teachers briefly introduced the rules of use of the laptops as well as the goals of the project, and then assisted the students as a facilitator, that is, if they responded to students' questions individually. In comparison, it was very ineffective if the teachers gave lecture-like, loquacious introductions and detailed explanations of entire projects. That was the case when students, with their 'new toys' in front of them, were more excited and thus less attentive than usual. Students generally started 'playing' with the laptops as soon as they discovered how to turn them on. As a consequence, instructions had to be repeated to almost every student individually. The pre-service teachers, realizing that the set-up was inappropriate for teacher-centred lecturing, often adapted their teaching strategy. Thus, informal, student-centered learning environments, in which students were faced with authentic problem solving situations, usually evolved. That is, students had to figure out how to accomplish certain goals (e.g., 'How do I add recorded speech to my movie clip?"), instead of having to create according to numerous instructions.

How did you implement wireless technology during your practicum?

During the practicum, I was able to use wireless technology in a number of ways to enhance both the classroom environment and my experience as a student teacher.

As a student teacher, I had my own iBook 24 hours a day, which allowed me to prepare lessons either at home or during prep periods, to edit and post photos to the class website I created using North Vancouver's Site Designer, to immediately reflect on my experience by carrying my iBook to an alternative space (so as not to disturb the students during my prep periods and to have privacy while writing), to download, organize or burn CDs of specific music for lessons such as dance, to edit lessons "in the moment" when provided with feedback from my sponsor teacher, to share lessons "in progress" with my faculty advisor, and to preview any iMovie or QuickTime videos or footage I had prepared with my faculty advisor or sponsor teacher prior to a full classroom screening.

Ultimately, the iBook became my personal briefcase and portfolio, as well. If I needed to show a fellow student teacher something I had produced, I didn't have to search for a computer or a disk. Instead, I could immediately pull out my work and display it for them, manipulating it on a tool with which I was intimately familiar. Having had the time to personally organize my iBook prior to practicum, I felt like I had a whole file cabinet of information and resources at my fingertips -- all within my small, black, laptop carrying bag. Thanks to the tinkering I was able to do prior to practicum, I became familiar enough with the iBook to become a resource for others, including the school's librarian who I spoke with frequently about wireless technology (mostly because 17 new iBooks had arrived and she was implementing policies for their use.)

Wireless technology was also a tool for building rapport with students. Even before I implemented lessons integrated with technology, I brought my laptop to school and used it frequently, either for reflecting, writing lessons during prep, or photo editing. As I sat at the back of the classroom, students would ask me about the

laptop. "Is that yours?" one student would ask, followed by another eager voice saying, "My Dad has one of those!" I let some of the students look at my iBook, and even doing that seemed a "hook" for motivating them in future lessons.

I was fortunate in my practicum placement, since my elementary school had recently received new iBooks through the Parent Advisory Council's support, bringing their overall set to 17 iBooks, a tool I used frequently during my 13 week practicum. I was sharing the iBooks with other classrooms, so I couldn't use them all the time, but I did have regular access. I had 29 students, which meant that even with this large set of iBooks, we were required to share in pairs. This limited the number of individual projects I could implement, so I focused on partner situations and station work, where students could be rotated between using iBooks and other hands-on activities not involving computers.

Before I talk about the positive aspects of using iBooks in the classroom, I also have to address some of the classroom management and technical issues that limited my use of these tools. Many of my students had not used iBooks before (I gave them a classroom technology survey at the beginning of the practicum to assess this prior to jumping in,) so I had to instill a sense of responsibility towards these very expensive tools. Together, the students and I made up a set of classroom rules about iBook use, and I held students accountable for this through their overall assessment on activities. However, a situation occurred during the practicum in which a 7th Grade class used the iBooks right before our class, and one student poked a hole in an LCD screen with a pencil. This destroyed the screen, and our class was lucky enough to discover it. This incident, along with other, unsupervised students dropping iBooks on the floor in other classes, create a lot of nervous energy around the use of iBooks in the school. The librarian created new rules for their use. Students were not allowed to walk

around with the iBooks. The iBooks would have to be passed out by the supervising teacher, placed on a desk, and then used at the desk.

When the student completed their work, the teacher would go around and collect the iBooks rauher than having students bring them to the front. This process would eat away the time allocated for iBook use. We also had only one airport, and I found that the airport could really only support 14 users. If we had all of the iBooks out, and if all of them were being used for the Internet, that is when I encountered classroom management problems.

I found that using the iBooks in the morning was the best bet, because the machines were fully charged. As part of my planning, I had to incorporate time after the class period to plug in all iBooks into the cart, take the iBook cart back to the library and plug it in to the wall, making sure it would have the full lunch hour to charge for the next group. If I was using the laptops in the afternoon, however, I had to trust that the same would be done for me, and it usually was. However, there were times when the iBooks were running on low juice, and that can severely limit an Internet activity, since the iBooks use more power while on the internet.

Another impediment to technology teaching was the lack of a functioning LCD projector. The one at the school was not working and was sent away for repairs at the beginning of the practicum. There were LCD projectors available at UBC, but the time factor of getting them checked out and returned on time, while still being on time and allowing for morning prep, was impossible. Thus, my planning and implementation was affected by "How am I going to show them how to work certain programs?" Often times, I had to do this instruction in small groups, around my own laptop. Having the laptop at home allowed me to prepare for this ahead of time.

I would like to note that given the dynamics of my class (6 gifted students, 1 ESL, 2 severe learning disabled and a variety of academic levels in the group), some of the iBook activity I did do would have been impossible without the wonderful support of my sponsor teacher, who served many times as a second person for classroom management. One of the LAC teachers also became involved in the fray the day we did AppleWorks math graphing, which allowed the two SLD students to participate more fully. As I look back on the experience, I could have done more to involve the two teachers more directly, had I planned for this and, if they were willing, taken the time to instruct them on the computer aspects of the lesson, so they could play more than just a management role.

Despite all of those issues, I really felt that using the iBooks was a positive way of enhancing the overall classroom environment. I would do it again, in a heartbeat. We found ways of working around the problems. Though I had lots of ideas, I also had to be practical in my choices. I also had to get creative with groupings and station work. In the end, however, the students were excited to be using the iBooks and would "light up" every time the iBook cart was brought into the classroom.

Which, if any additional software, would you like to have used in university classes? Please list either specific software or general types of software below.

I would have liked a specific web creation program and some specific time spent learning how to use it. For instance, one of our FAME students used Dreamweaver – that would be a great investment for the program from what I could see. It was easy to use and produced great results, and with specific times for training, perhaps students could get up to speed with such programs more quickly

than if they tinkered alone. I noted that when we had the specific training on Photo Shop, that was a huge revelation for everyone, and tools like Dream Weaver, even at a basic level, could be done the same way. When we leave the FAME program, it is important to have spent some specific time on html or using other web-creation programs other than North Vancouver's Site Designer. Not all schools would have access to that type of software, whereas they may or may not have access to web software such as Netscape Composer, etc.

I would have liked more training on any type of music-creation software, although I am not sure which ones to suggest.

Overall, it would be great to see and to read about more examples of the technology and art integrated learning that is actually occurring in the public school system of British Columbia. Many teachers are using technology, and it would be great to find those teachers and have them come in to talk about what they are doing. For instance, even our Social Studies methods teacher last year was using technology in a way I hadn't thought of with his lower-primary students at a local school. My special needs methods teacher during the summer was using the arts in innovative ways to include all students. There is a community of teacher-artists-technicians out there, and it would be great to tap into them, however it is possible within such a short timeframe as the 12 month education program.

As a side note, not sure where to put this, but I think it is important to have access to all of the software that we use in the FAME university setting, in the elementary classroom setting. Both the laptops from the "tub," as well as the laptops from the elementary school where I worked, were limited in software and little had been installed on them other than the basics. While our university laptops had tons of

programs on them, shared amongst us all, we could not install all of those programs on the laptops for copyright reasons (I conferred with the North Vancouve technology people on this.) Specifically, I would have been interested in using programs such as Sound Companion, Inspiration and KidPix3 on the iBooks, but I couldn't do this for copyright reason (this is becoming even more sensitive for companies such as Apple – especially with music.)

Also, from a classroom management perspective, it is hard to spend time installing on all computers and then uninstalling on all computers – this can take too much time, especially when FAME students only had the computers for a week.

In the implementation of the arts-based activities (e.g., creating a movie, composing movie music, doing interactive web searches) pre-service teachers used a variety software applications (e.g., iMovie, GarageBand, KidPix) as well as wireless technologies (e.g., digital cameras, iBooks). Arts-based activities (e.g., composing, storyboarding, filming, acting, directing and editing) generally stimulated student interest, because they allowed for individual choices, feelings of pride and ownership, and a high degree of creativity. This motivated students to acquire the computer skills needed to realize their ideas. It was decisively facilitated by the ease of use of the iBooks and software applications (e.g., iMovie), enabling the students to explore them intuitively and playfully.

Would a wired lab have provided the same experiences? How/how not?

I couldn't have incorporated the desktop lab into my overall "classroom environment." Students needed to be able to see past work on the walls (for example: pictographs we made on paper one day were used to create graphs on AppleWorks

the next day) , and there was less disruption when we incorporated the technology into our normal classroom routine, into the familiar classroom environment. Transitions were difficult for my students, and the day flowed more smoothly the less "traveling" we had to do from space to space.

In thinking about my experience with the mask-making tutorial day and four stations, I would not have been able to do the multi-tasking and grouping of students that I did in my classroom inside a computer lab, where computers are stationary and cannot be grouped (not to mention that plaster would not be welcome in a computer lab.)

All activities were done in pairs or small groups. This gave students more flexibility to set their own pace and to request individual assistance. Accordingly, pre-service teachers primarily functioned as coaches or mediators, not as lecturers. In these roles, the pre-service teachers were often assisted by those students, who—-being the tech-experts of the class—-also answered questions of their classmates and showed them how to do certain things (thus functioning as co-teachers).

I used the iBooks for the following:

- <u>*MATH:*</u> *As part of the graphing unit, I had students form groups and make large paper pictographs, based on surveys they took of the class for particular questions, like "What is your favourite sport?" During the next math session, we formed pairs, passed out iBooks, used the data from the pictographs, entered it into an AppleWorks spreadsheet, and experimented with making instant computer bar graphs. During the final session, we formed pairs again, passed out iBooks, entered data from another graph they had been working on in the math textbook and created instant computer broken-line graphs. Students independently*

explored the various formatting features of the graph (text, colours, line widths, etc.). Many of the students told me they were amazed that a computer could make the graph so quickly. The sessions involved all students, at all different math levels. The focus of the lessons: use of technology in mathematics, a beginning look at AppleWorks as a learning tool, and cooperative work skills. I could only work with a few students at a time on the AppleWorks graphing (in lieu of having an LCD projector), so I divided students into groups and stations. At the various stations, students experimented with pre-screened Math games online, Math graphing websites, and, for fun, KidPix 3 on my own laptop.

- *<u>NOVEL STUDY:</u> For the novel The Lion, The Witch and The Wardrobe, I created an Internet Scavenger Hunt, based on the author's biographical information, as well as other facts about the novel. This served as a pre-reading exercise to motivate students for the upcoming unit and to familiarize them with ideas and events such as fantasy, World War 2 and the children of London, air-raids, C.S. Lewis's friendship with Tolkien, etc. Students were put in pairs and given a worksheet of questions. Pre-screened website addresses for finding the information were put up on the board. Students were given two class sessions to find the information on the websites, and they were allowed to share answers with others in the class. The focus was information literacy, as well as motivating them for the novel. Many of them had used the Internet, but still had difficulty finding specific information and navigating Internet menus and title bars.*
- *<u>FINE ARTS:</u> Connected to the unit on The Lion, The Witch and The Wardrobe, we made three-dimensional plaster masks of fantasy characters for fine arts. I knew that having 5th Graders work with plaster could be a messy venture, so I*

wanted to prepare them thoroughly before they even began making a mask. I started by having them make sketches of their masks with coloured pencils, so they had a plan in place before starting. The next session, I re-arranged the classroom, putting desks and chairs into four groups. I brought in the iBook set and created four stations.

- *At Station #1, students would be touching plaster for the first time and making a quick plaster mold of their thumbs (thumbs before faces!)*
- *At Station #2, students would each have their own individual iBook and explore a series of websites on mask making, answering questions about masks on a worksheet.*
- *At Station #3, students would work at a large table together, continuing to expand on their own mask sketch ideas. A large set of laminated fantasy and nature pictures were provided. When finished, they could work on other classwork.*
- *At Station #4, students would each have their own individual iBook and watch a QuickTime Mask-Making Tutorial, which I filmed at home and edited in the MUSES lab using iMovie. The short 13 minute film would tell them the 6 steps we would follow to make a mask, the materials they would need, how to use the plaster and how to clean it up. This would be followed by footage from my own FAME portfolio, in which you see me going through those 6 steps of mask making. This gave the students a visual motivator – they could see immediately where we were going with this project. In addition, this really helped the high number of visual learners in the class, because they picked up the instructions more readily through video and individual use of the iBook (they could start, stop, rewind, etc.) than they would have through direct teaching at the front of the classroom. The*

gifted students enjoyed this activity for similar reasons and seemed to enjoy the freedom of taking the laptop out into the hallway to listen independently. The activity motivated many of the advanced students to participate in our lunchtime iMovie club.

- *GOVERNMENT: As part of our Social Studies Canadian Government Unit, students explored the Federal Government's "About Canada" website, answering a scavenger hunt questionnaire about Canadian government facts. Students worked in pairs. For another activity, students were divided into groups and each group was assigned a part of the federal government, such as Justice System, Prime Minister, etc. They were given two periods to do research on that part of the government, using 1-2 iBooks and then report back to the class during a third session.*
- *SCIENCE: For the introduction to our Natural Resources/Geology Unit, students were shown a "Rocks and Minerals" video I created with the help of a fellow FAME student teacher, during the UBC Science Methods course. Students had a very positive reaction to seeing their teacher on film (as I played a part in the movie), and I used a lot of popular music and local park images to introduce the unit ideas.*
- *LUNCHTIME: We had a lunchtime iMovie club that met once a week and consisted of anywhere from 10-12 students. Students were taught how to hook up a DV camera to an iBook, how to download clips, how to cut clips and arrange them sequentially in the movie viewer and how to add special effects, transitions and titles. We divided the 10-12 students into four groups, and each group was assigned a different set of footage from class activities to edit and present. During*

the last week of my practicum, these students presented their completed iMovies to the class.

- <u>*WEBSITE:*</u> *As I said, I used my own iBook to do a lot of photoediting and posting of material on the class website. The website was made using North Vancouver's Site Designer and consisted of 16 different sections. Both students and parents could see student artwork, homework assignments, unit explanations and a calendar of events online.*

In the questionnaires administered after the practicum, pre-service teachers reported that they experienced the integration of arts-based activities and wireless technologies as a valuable and rewarding contribution to the curriculum. Arts-based activities primarily were considered as increasing student interest and creativity. Wireless technologies (compared to wired computer labs) mainly contributed to more mobility, while still being connected to the informational resources of the Internet. That significantly facilitated the integration of technology and new media into traditional classroom activities.

Are there any additional professional comments you would like to add to the ongoing dialogue to help the Faculty of Education better define our goals for the future (use as much space as you'd like)? For example, what do you think we can do to improve the experience of using new teaching and learning experiences in both the university and school settings? We thank you for your valuable insights. Your expertise is greatly appreciated! ☺

Some Rambling Comments:

- *The iBook experience in the classroom was phenomenal. Whenever I speak about the integrated arts and technology lessons I did during my novel study unit, I do get a reaction. People want to know more about what I did. Those interviewing me for teaching positions are interested in what I was doing. During my time both pre-practicum and during the practicum I learned a lot of skills that I can use to market myself as a future classroom teacher.*
- *The match that was made between myself and my sponsor teacher was exceptional. The matching process definitely works, and I hope it is continued. In particular, I found it was super-important to match student teachers excited about technology and arts with teachers who are also excited about learning in those areas. My sponsor teacher definitely was excited and encouraged me to take risks, trying out new ideas. Not all of them worked, but I felt supported in at least taking a leap and trying.*
- *I was fortunate to have the iBooks at the elementary school where I worked. I think this made my practicum experience an amazing one. On the other hand, I know other FAME students who did not get that advantage. Having the access to the tools during the practicum is an important way of following through on our training – being able to use what we have learned. So, I hope that future groups get as much time with the iBooks as they can and that perhaps more iBooks become available to student teachers to use in the classroom. This access also applies to copies of copyrighted software (as well as some sort of clear understanding between North Vancouver tech people and FAME student teachers about copyright issues, something that was never completely clear for me.)*

- *I would love to hear more about what current teachers are doing with technology, or even what past FAME teachers have done, during the FAME teaching training.*
- *I would love to hear more about what current teachers are doing with arts integration (including some of the projects that are currently being worked on at the university, in Curriculum Studies,) because I think this could be a source of inspiration for ideas.*
- *I would encourage new FAMErs to find ways to connect with the arts community that is already out there. How can FAME be part of the arts community? How can the arts community be a part of the practicum experience? (For instance, I used the Vancouver Children's Festival as a part of my practicum units.)*
- *I would love to spend some time talking about "the other side of the coin" in terms of using technology in the classroom. What became evident during one of my interviews is that not everyone feels that receiving tech and fine arts special training is a good thing. Perhaps more discussion on this is needed during FAME so that FAME teachers can successfully debate the issue?*
- *Technology Training – again, more training in web development? I think creating a website should be a requirement. Both creating a website and participating in a technology class is a requirement in many teaching education programs in the States.*
- *Technology & Classroom Management – more discussions on concrete ideas for managing technology classroom management issues?*

- *Crossovers with other cohorts – Could we somehow exchange information with other cohorts or do some assignments cross-cohort? Sometimes fresh ideas come from this cross-pollination rather than staying with the FAMErs for the entire time. I heard some great ideas during the summer!*
- *There needs to be some discussion about how to implement technology with special needs students. Perhaps tapping into the Special Needs methods teachers early, having them come in to give a talk on special needs issues (in particular, Mr. XYZ was exceptional and loved the FAME idea – he has used the arts to reach out to students who have disabilities and has years of experience.) I was really challenged to understand how to use the technology with some children who had no self-control, especially when we are dealing with $3,000 machines.*
- *Implementation of one Technology Lesson – as part of our teaching training, we should have to write and implement one technology/arts combined lesson, even if it is done in groups. I know this was probably meant to happen during our DREAM teams.*
- *One of the largest challenges is finding ways to combine ARTS and TECH into lessons….it is easier to have them be separate. So, a lot of discussion has to happen amongst FAMErs to get some ideas cranking early for this!* ☺
- *The earlier practicum planning can happen, with early discussions in November with sponsor teachers so that curriculum for the spring is clear, the more opportunities available for collaborating with other FAMe student teachers.*

Some pre-service teachers suggested that the application of arts-based activities and use of wireless technologies should be built into all university course assignments

before the practicum. That way, pre-service teachers would have a model of how to integrate arts-based activities and wireless technologies in their daily teaching. In addition, they would gain more *fluency* (Mitchell, Inouye, & Blumenthal, 2003; Snyder, et al. 1999; Gouzouasis, 2004)—-and consequently confidence—-in doing so. Especially, with regard to the software programs, they felt that additional training would have been necessary to acquire a broader range of competencies, equipping them with a greater variety of appropriate software applications.

Our results relate to the three stages of the DREAM model in the following way. During the projects, there was a continuous balance between phases during which the pre-service teachers taught specific skills and gave instruction (teacher-led sessions/micro-lessons), phases during which the students practiced those skills (student-centered stations), and phases during which students experimented and explored possibilities beyond the ones they had been shown (synthesis). In other words, the three stages—-sessions, stations, and synthesis—-were constantly interwoven in recursive ways during the learning process.

Educational importance, implications, discussion

Our results confirm previous notions that arts-based activities and wireless technologies, if facilitated appropriately, can be implemented into the curriculum to create constructivist learning environments. A critical factor for the success of the implementation in the classroom were (a) the competence (and thus confidence) and fluency the pre-service teachers acquired during their program, (b) the social support (encouragement) within the schools, and (c) the initial technical and organizational support before and during the first arts-based, wireless technologies project.

These findings have important implications for educational practice, both at the university level (i.e., teacher education) and the school level (i.e., teacher support). At the university level, the type of constructivist teaching that prospective teachers are encouraged to practice in the classroom needs to be modelled. The rationale behind this is that the student teachers will only adopt teaching strategies that they experience as being successful. Also, successful modelling, involving much practice, will lead to a high degree of fluency with regard to arts-based learning activities and applications of wireless technologies. At the school level, teachers need a supportive school environment—-external and internal—-to implement arts- and technology-based learning activities. Internal support seems sufficient, if a school can provide the required social, informational, and technical support, but external support becomes crucial, if this type of support is absent.

It can be concluded that further success of implementing arts-based activities and wireless technologies in the classroom depends on having in place a system in which beginning pre-service generalist teachers are encouraged to teach the arts, and to teach with artistic sensibilities. Moreover, they need to be sufficiently educated to confidently use a variety of appropriate arts-based and technology-facilitated activities, in which either sufficient internal or additional external support is provided in the beginning of their program. This implies that the integration of arts-based technologies, wireless technologies, and constructivist teaching practices need to be modelled during the teacher education and that the school system needs to welcome innovative teaching strategies that help to create constructivist learning environments.

It goes without saying that university instruction requires competent and skilled facilitators whose knowledge of arts, general classroom frameworks and technologies are seamlessly present throughout the teacher education program.

Gouzouasis, P., LaMonde, A., & Guhn, M. (2007). The Fine Arts and Media in Education Project: The intergration of creative arts-based activities, wireless technologies, and constructivist teaching practices in practicum. In K. Veblen & C. Beynon (Eds. with S. Horsley, U. DeAlwiss, & A. Heywood), *From sea to sea: Perspectives on music education in Canada*. Retrieved from http://ir.lib.uwo.ca/musiceducationE-books/1/

Innovative solutions to providing this instructional calibre across a faculty of education (not merely within a single cohort) will need to be addressed if initiatives are scaled to meet the needs of an entire program of study.

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