How Technology Shapes Our Way of Teaching Dance

Zihao Li
York University

Technology has changed the world, including dance, in the past three decades. This paper looks at how technology can enhance dance pedagogy in meaningful and effective ways. It focuses on three key issues: the current situation of technology in dance education, technology in general education, and the implementation of technology in dance education at York University, where the article contributor worked.

Olander (2007) claims that in the classroom, computers and computer-related technology are leading the way for both students and new approaches to learning, with schools, including universities, following behind. Through technology, individual educators have the opportunity to remodel their pedagogical approach in order to attract learners who are ever more diverse, globalized, and digitally savvy. According to Internet World Stats, an international online database monitoring global internet usage, by June 30, 2010, there were approximately 1.966 billion internet users across the continent. The worldwide penetration rate is 28.7% or one out of three people have access to the internet (Enrique, http://www.internetworldstats.com). Between 2000 and 2010, the growth of internet users had jumped almost five-fold. A huge percentage of internet users are students, who are familiar with today’s technological trends such as the use of podcast, blog, and the list goes on.

CURRENT SITUATION WITH TECHNOLOGY IN DANCE EDUCATION

As dance educators, we face challenges and opportunities with the advancement of technology. At the 2008 World Dance Alliance Conference in Australia, scholars discussed the possibilities and potentials of using the internet for dance education through Second Life Avatars and Multimedia Performances (Hong, Caldwell, Ashley & Alpert, 2009). Koykkar of University of Wisconsin-Madison states that technology allows dance artists to experience this art form in ways that they could not 20 years ago (Wolfram, 2003). Arizona State University (ASU), for instance, went further by putting this question in its mission statement: “what might dance really be like in 20 years”? The ASU dance program requires students not only to take traditional courses in dance but also to embrace
new requirements including courses like graphic design. While blending new technologies and traditional studio based dance training, the dance program at ASU aims to assist students to maximize their full potential and to succeed within the rapidly changing dance culture (Dove, 2009). Caldwell and Martin of Texas Women’s University designed and created Media Performance Art Collective (www.impacollective.org), a cyber platform for dance educators to connect, share, and create (World Dance Alliance Conference, 2010). The dance department at York University in Canada shares a similar philosophy. On September 8, 2010, the Faculty of Fine Arts at York University launched FA4U (Fine Arts for You), a handy, smartphone-friendly multimedia site targeting “newbies” (new and perspective students) who are familiar with iPhones, BlackBerrys and other mobile media devices (http://www.yorku.ca/fa4u). The dance department purchased several latest version Mac Pro computers and set up a multimedia office to facilitate students’ use of technology.

Technology allows dance teaching to enter into new territories; we have to indeed re-evaluate and rethink our traditional teaching methodology. With the popularity of iPods and other handheld devices, how can we as dance educators make use of them in our programs? Using technology in teaching dance offers opportunities for further learning, but also poses challenges for both teachers and students. How can we use technology meaningfully to enrich university dance programs?

Challenges in the current state of dance education
Disconnection

Research shows that technology is generally used as an isolated product disconnected from classroom instruction (Crystal, 2006). The use of technology in dance education appears to be more limited than other disciplines. While mastering dance technique skills in a class, students often lack technological resources to support what they have learned during class time; for example, a teacher may teach a fusion of Limon and Graham technique during class, but the availability of resources for this type of fusion is currently extremely limited online. The result is not promising as only a few educators recognize the connection between studio-based training and cyber stimulation.

Monitoring

It is indisputable that using technology in dance education has great potential. However, educators must also recognize the challenges in integrating the use of technology because students come with diverse academic backgrounds and life experiences. Is the use of technology effective? Does it have a positive impact on students’ learning? If not, what could be done? Students are equipped with different levels of
technological knowledge. Some students are familiar with updated technology and others are not; a few prefer traditional means of dance training, studio/classroom based. Are we discriminating those learners who are not capable of manipulating the latest gadgets? How much technology do we as dance educators need to adequately facilitate teaching and learning? How do we measure student progress and achievement in studio and, then, in cyberspace?

**Bottom up?**

Tapscott and Williams (2006) suggest that we make the cyber world together because we see it as a place where “it’s about peering: sharing, socializing, collaborating, and most of all, creating within loosely connected communities” (p. 45). From an educational perspective, individuals share their thoughts and ideas on the web platform to promote, support, or to disseminate their knowledge, expertise, or their beliefs on different subject matters. It is a bottom-up or self-organizing culture that challenges traditional ways of how knowledge and information are distributed. However, who will be responsible for the accuracy and the legitimacy of the information that is posted online? How will the standards be met? Which concepts are accepted and which are not? Perhaps, solely depending on a bottom-up approach in dance education is not a valid choice.

**The Combination**

Students are motivated to act for purposes of inherent value, which is tangible to them (Dewey, 1966). The goal for technology advancement should be to build not only communities of individual students, but to connect learning communities in which students learn from their peers in collaborative and cooperative relationships rather than in the “traditional transmissive, teacher-centered, fixed curriculum mode” (Carroll, 2000; Crystal, 2006). Often, university dance students are accustomed to memorize and copy how teachers move in the class. This approach limits the learning process to a “top-down” model. Fullan (1999) argued that neither top-down nor bottom-up strategies for educational reform would work. What we need is a more sophisticated combination of these two. I believe that by equally coordinating top-down and bottom-up forces, an effective pedagogical model will emerge.

**Cyber generation**

With the creation of i-phone, iPod, Mini-Netbook, and other handheld devices, today’s young adults, so-called cyber generation, prefer to watch something in the palm of their hands rather than sitting in front of a large television. With these high tech gadgets, students and young adults...
access YouTube and Facebook frequently. Many of them tweet, blog, and enjoy doing all of this whenever and wherever.

**Hub**

The successful implementation of technology in dance education benefits both teachers and students. More importantly, the inclusion of technology is seen as a new pedagogical approach that creates a positive impact on teaching and learning in the 21st century. Current students are unlike learners from previous generations, as are the learning environments and teaching spaces that are available today. Hong, Caldwell, Ashley & Alpert (2009) suggest that learning is presently considered a process of connecting information across a web of specialized databases and it “requires students to not only know-how and to know-what but more critically, to know where to find the knowledge needed” (p. 8). Traditionally, dance education is still limited to settings such as library and studio spaces. However, with the advancement of technology, dance educators could consider using technology to extend their teaching by establishing a “hub” online in which students and educators connect, communicate, reflect, and re-tool their approaches to dance whenever and wherever.

**TECHNOLOGY IN GENERAL EDUCATION**

Technology is widely used in general education, creating “celebrities” even in the academic world. American scholar Marian Diamond is just one of many enjoying the success of incorporating technology in teaching at higher education. At age eighty three, Marian Diamond has been teaching biology at the University of California, Berkeley for fifty years. Her class is so popular that it’s difficult for students to get in, though she teaches at the campus’s largest lecture hall with room for 736 (Hafner, 2010). In order to meet the demand for her lecturers, she uses technology to broadcast her lessons. With multiple lectures virtually posted on YouTube, she has become an internet sensation as her lectures on biology have been viewed/downloaded more than 2 millions times thus far (http://www.youtube.com/watch?v=FjCIRLwkI3k). By the end of October, 2010, University of California, Berkeley posted more than one thousand lectures on Youtube and other cyber-based platforms.

University of California is not the only institution that implements technology to meet the demand. Numerous universities in the United States and around the globe adjust their pedagogical approach and apply the latest technologies such as virtual teaching as a way to engage the cyber-era-learners. Those institutions include Harvard, MIT, University of Toronto in Canada, Hong Kong Academy for Performing Arts, and Open University in England. University of Toronto is spending tens of millions of dollars on acquiring copyrights and converting books and texts into PDF
files for students to access from virtually anywhere in the world. Faculties at University of Toronto also create scholar portals on which students and teachers connect and discuss different topics. Hong Kong Academy for Performing Arts describes itself as a rich and multi-dimensional environment that supports the development of a new generation of dancers (Donaldson, 2010). The academy has purchased numerous latest versions of Mac workstations to facilitate its Choreography/Directorship programs. Open University in England is offering open online/distance-learning courses, which have become the Top five downloads on iTunes’ University platform. Among its course subscribers, close to 90 percent are from countries outside of the U.K. The Vice Chancellor at the Open University admits that thousands of students started out with taking free online courses and later registered for paid online/distance learning courses (Hafner, 2010).

From a cost perspective, Yale University claims that it spends between $30,000 and $40,000 to transform a general classroom-based lecture into an online course in which students can access course materials whenever and wherever, technology permitting. Some well-established organizations such as the William and Flora Hewlett Foundation and the Bill and Melinda Gates Foundation have donated and still invest tens of millions of dollars to support the implementation of technology in education. Globally, many universities in Asia and Latin America are aggressively investing in such fields, not necessarily because they have the money, but because they see the potential of integrating technology in teaching and learning and the impact it has created thus far. It is evident that there are abundant opportunities for using technology in education.

THE IMPLEMENTATION OF TECHNOLOGY IN DANCE EDUCATION AT YORK UNIVERSITY

While teaching modern and ballet technique at York University between 2009 and 2010, I explored the potential of using technology in my teaching by creating a multimedia website. The site contained the general course information such as course outlines and assignments in PDF forms. It also included interactive blogs and podcasts that monitored the progress of dance students, physically and mentally. The goal for this implementation was to see how technology could enhance dance teaching and learning meaningfully.

This paper focuses on the use of podcasts to enhance dance pedagogy. Participants in the podcasts were BFA (Bachelor of Fine Art) first year dance students. While dancing in class, they were randomly featured on recordings, which were then transferred to a Mac Pro computer to produce Youtube-like podcasts. Each class had approximately thirty-five students and more than ninety percent were Caucasians. A few participants were of
Asian and Latin America ethnic background. In addition, there were three overseas exchange students from England.

The chair of dance at York University is always enthusiastic about the use of technologies in dance education. So, permission was granted to proceed with the project without any difficulties. Then, a student agreement was distributed to participants indicating that the project was not for any commercial use. The content of the material and the feedback collected were only to be shared at scholarly conferences and publications. Above all, participants’ privacy was protected by a no-naming policy (no student name was ever used) and they had the right to withdraw from it at anytime with no adverse consequence to their marks whatsoever. All participants signed the agreement.

**Timeline**

The turnover time for a set of classes, ballet and modern, was two weeks. A podcast was usually posted online a few hours after the first class was taught. Excluding holidays, there were six sets of ballet and modern classes posted online. Only a handful of students visited the website at the beginning, but their attitude changed as they saw the importance of reviewing class material online prior to the next class. The traffic to the website increased and the site was ranked the top by Google search engine shortly after the project launched. In late November, approximately one week before their final exam, a short questionnaire was distributed with the intention of surveying the effectiveness of the podcasts and also to invite students to provide feedback on the combination of cyber and studio-based approaches in dance education. For me, the project was incorporated action research methodologies to find out what worked, what did not work, and what could be done better in the future when implementing technology in dance education.

**Survey**

There were only three questions on the survey: pros, cons, and suggestions. Students wrote their feedbacks/suggestions under each category. The survey was taken after a technique class. By that time, podcasts had existed for more than ten weeks. Students had fifteen minutes to complete the survey at the end of a class. There was no announcement about the survey so that students did not have time to prepare for their answers. The survey was a way to collect responses on the implementation of technology in this dance class. On that particular day, three students were absent. As a result, the turn in rate was 92 percent.
Survey report

All participants indicated that they watched the podcasts frequently and they believed that it was beneficial to their development as dance students. However, a few students expressed minor concerns, with which some modifications were made in the winter term to address potential problems. A number of students provided comments on enhancing the cyber learning environment. During the presentation of this report at the World Dance Alliance Conference in New York City, academics discussed the potential of such an approach and how it can be implemented in other areas within the realm of dance education.

Pros

One of the most frequent responses found on the survey was that students enjoyed having the freedom and flexibility to choose when and where to engage with the class material. They liked the fact that podcasts provided convenience to their particular lifestyle and other work commitments. This survey also revealed that many students watched podcasts on their handheld devices or pocket gadgets and only a few students claimed that they viewed the class material in front of a desktop computer.

Win-win situation

One student responded “I missed a few classes due to illness while a new set of classes was introduced. I learned it when I was in bed recovering and got myself ready for going back. As a result, I was not behind too much.” This particular student admitted that learning dance online was challenging as she had to reverse the side while facing the screen. Nonetheless, she considered it a skill that she could use in the future. Coincidentally, those who physically attended the class also enjoyed the podcasts. One participant said that having the podcasts gave sick students a more convincing reason to stay home for recovery. “While they studied the same material online at home, it means that we, healthy dancers, have more room to move. It’s a win-win situation.” Another student praised the accessibility of the podcasts. She described that her hectic work and family obligations kept her from being able to stay in one place, yet she could still watch the podcasts on her iphone when she was less busy or on the public transit. For students whose lives were not as hectic, they described podcasts as a balance provider. One student stated: “I’m exhausted after a whole day dancing and theorizing. Watching the podcast helps me relax and, at the same time, review the material to prepare for the next day.” Another participant talked about the oversized class, which made it difficult for her to receive feedback from the teacher during the class.
Since there are 35 students in a class, it is hard to get corrected a lot so you can correct yourself and learn from others who are dancing with their full potential. Viewing podcasts make me able to view my mistakes and apply the corrections. I have trouble remembering exercises so by viewing podcasts, I can review and reflect on my own dancing repeatedly at home to get prepared for the next class.

Working beyond technique

Some students discussed how they better connected body and mind after examining their dancing in virtual space. While watching their dancing on podcasts, they scrutinized how they actually executed the steps, moves, jumps, or how they used their breath, rather than the perceived version they had in their heads. While in the class, their job was to learn the exercise and to master it physically. Through watching the podcasts, they analyzed how they danced with critical eyes. Then, they went back to the same combination using their body and mind together more precisely. Students who picked up the choreography quickly asserted that watching the podcasts further developed their personality and style in performing. In other words, they watched their dancing and the teacher’s demonstration online not to learn the exercise, but to see how they danced. Once they were back in the studio, they moved beyond the technique aspect to a level that further developed their artistry and personality in dance.

Monitor

This project documented the whole semester dance classes with six sets of videos posted online (September to December). Many students admitted that they used podcasts as a way to monitor their progress in dance. Students were able to see and compare their progress and achievement throughout the term. Other students used podcasts as self-reflection and experimental tools. They watched it to observe their classmates’ progress as a means of comparison and for their own motivation. For instance, students would appreciate performance qualities they observed in others. This would inspire them to experiment with emulating these qualities in order to further develop their own artistry. Many students expressed that watching self-dancing from an external perspective encouraged them to dance to the best of their ability.

Motivation

The majority of students considered podcasts a confidence booster that motivated them to work harder. One participant asserted “the podcast allows me to reconnect with myself, as a dancer. It allows me to see my strength, which in return, makes me to work harder.” Another one added:
If I am not so confident in an exercise, I can check it out online for more clarification. Sometimes certain dancers may have a bad day. Yet, he/she still has to dance in front of the camera, regardless of individual problems. It motivates me to do my best on a daily basis because I know that in the future, I have to perform on those days that aren’t so perfect.

Boundary

Podcasts provided students with an opportunity to look at their dancing from a different perspective. Students became movement observers or critics and they reflected on what they did in class for further improvement. Podcasts also served as an online resource center where students could withdraw materials whenever they wanted. Some participants nicknamed the website a “cyber library.” A few students requested to use the online material for teaching and performance purposes. A Mexican student confessed that her former dance teachers in Mexico watched her dancing online and offered her additional feedback for improvement. “It’s awesome! I feel like as if I had five teachers all for me.” Some students felt less nervous when they found out that the podcasts were under the York University web server. “The York dance community is considered a closed environment to the public. I would not feel comfortable if the podcasts were posted on Youtube or other social networks.” One participant said that the podcasts actually expanded her social circle in the university community:

I don’t have a computer. I have to watch the podcasts on other people’s computers. Sometimes, I have to view it in the library. Many times I have been asked by other students about what I was watching in the library. When they learned that I was reviewing my dance class online, they were blown away by that. I have made quite a few friends since then.

Teacher growth

Many dance students in the class were in fact dance teachers themselves. They worked in local dance studios or schools. They admitted that watching how a university course director delivered a ballet/modern dance class sharpened their teaching skills and helped them become better teachers. Here, podcasts functioned as an alternative means of communication among teachers.

Cons

While the majority of students endorsed the online podcasts, a few participants also pointed out areas for improvement, most of which were addressed in the winter term. There were compatibility concerns, to include: some student computers were not equipped with programs such as Flash Player, iTunes, or QuickTime Player required for playing the

When the size of podcasts became a concern because they took too much time for students to download, I adjusted the quality of the podcasts by reducing megapixels (millions of pixels), the number of light-sensitive cells on the sensor. This effectively minimized the size of the file and enabled students to download online material faster and sync podcasts with their pocket devices such as iPhones and MP3 players.

One participant was afraid that cyber bullying might take place. Her worry subsided when the commenting function was disabled. Viewers could only watch the podcasts and they could not post any comments. Camera angle was another issue as the camera stood on its own while videotaping. As a result, it could not catch the entire class, especially when people dancing across the floor. One student suggested using those who were sick to record the class at the side. All of a sudden, those who were sitting out learning passively felt actively engaged with what was going on with the class. With a student guiding the camera, the accents of the class were captured. As a result, the quality of the online postings was enhanced.

**Student suggestions**

Some suggestions from the students were excellent, but most were either costly or time consuming. For instance, students suggested using a special camera to slow down the fast sections along with verbal cues. Then, film the same material with normal speed. Another one advised breaking down the combination – dividing the long dance sequence into small components. However, no changes were made due to technological difficulties. One of the suggestions, accepted and applied to the project, was to select students to demonstrate in front of the camera. Such an approach was extremely effective because those who fully grasped the dance material usually volunteered to be filmed. Consequently, the quality and clarity of the movement sequences on podcasts increased.

**Privacy, credibility and reliability**

One of the strengths that the online community offers is its participatory nature. However, as Hong, Caldwell, Ashley & Alpert (2009) suggest, “if one cannot participate then its effectiveness is lost” (p.11). Due to the fact that anyone can contribute to the online environment, the privacy, credibility and reliability is at risk. One of the participants in the class did raise the concern that podcasts might be misused. As the website administrator, I made sure that students’ privacy was protected and all information sources were credible and reliable. To achieve that, I
encouraged students to email or submit their suggestions or website links to me for reposting. After examining the material, an online posting was hyperlinked under the blog section. All contributors were credited for their online submission, which in return encouraged them to post more. The online resource center became so popular that it served as a platform for students to exchange ideas. Unfortunately, shortly after finishing my teaching assignment at York, my name and online link were deleted from the faculty website. Instead, a smaller scale website was created to highlight some of the key components.

**Activity and technology**

With the advancement of technology and an ever growing online community, dance education has entered into a new era. As dance educators, we have to maintain our focus. As Hong, Caldwell, Ashley & Alpert (2009) suggest, we need to “re-examine, re-consider and re-tool our pedagogical paradigms and practices. We must constantly remind ourselves that it is our activity as reflective artists, administrators, and educators engaged in the pursuit and provision of scholarly teaching and research that enlarges and advances learning within and across discipline fields” (p.12). Dance educators have to keep in mind that while using technology to improve pedagogical approaches, technology is merely an enhancement and cannot substitute for content that promotes learning and critical thinking within and across subject areas. The physical aspect of the dance training can never be replaced by the advancement of technology.

**World Dance Alliance Conference in New York, July 2010**

While this paper was presented at the World Dance Alliance Conference in New York last July, a lively discussion was generated. Dance educators representing different countries shared their experiences in using technology and they also offered constructive suggestions. One of which was the use of a number tracker, computer software that monitors the website traffic. An advanced model could also record the basic data information on where and when people visit the site. This could inform the dance educator about the effectiveness of the online approach to student learning. During the 2008 World Dance Alliance Conference in Australia, Hong, Caldwell, Ashley & Alpert (2009) talked about technologies such as The Red One camera, which is a flashcard video recorder, a viable option to replace the conventional tape camera. Flashcard based cameras record directly to a SD (secure digital) card or a hard drive, which effectively reduces time when transferring video files.
Learning from the past and moving forward

My implementation of technology at York University’s dance program was merely an experiment. During the course of the project, I learned a great deal of knowledge about technology in general education as a whole, technology in dance education in the 21st century, and how my implementation of technology impacted teaching and learning at York University. There were challenges and times when I doubted this approach to teaching dance students. The project took time, patience, and perseverance to upload each class online, but once it was there it became a permanent virtual library for both students and teachers to analyze, reflect, retool, and re-approach. In that respect, a prolonged positive impact was created with the implementation of technology in this particular dance class. Technology enhanced my teaching and made the whole teaching and learning process more meaningful to both parties. There are many other ways to incorporate technology in dance education and I am looking forward to experimenting with those unknown territories in the future.

Acknowledgements

Thank you, William Mackwood, Mary Jane Warner, Louise Malisani and others at York University for your support in making this project possible.

References

Carroll, T. G. (2000). If we didn’t have the schools we have today, would we create the schools we have today? Education, 1(1), 117-140.


Biographical Information

Dr. Zihao Li is a dancer, choreographer, teacher, and researcher. He has performed with the Shenyang Qianji Dance Company and the Guangdong Modern Dance company, the first contemporary dance company in China. After performing, teaching, and studying in numerous countries, he recently completed his doctoral degree in Education at OISE, University of Toronto. His research interests include dance pedagogy, teacher/curriculum development, cross-cultural studies, gender and masculinity, and technology in dance. He has taught at different institutions and professional dance companies including York University, Canada; University of Madison-Wisconsin, U.S.A; Hong Kong Academy for performing Arts, Hong Kong; and Liaoning Ballet, China.