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ABSTRACT

A dynamic apprenticeship model for training multimedia arts TAs yields benefits for students and the experienced TAs as well.

Learning to Be Multimedia

Teaching Artists: Apprenticeship in Multimedia Arts Education

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The Multimedia Arts Education Program (MAEP) was an innovative initiative for middle school students that used teaching artists as leaders in an apprenticeship-like teaching context. The teaching artists specialized in four areas: desktop publishing, computer graphics, animation, and video production. Fifth-semester students produced electronic portfolios. MAEP provided experience and training in multimedia arts education in a professional art setting. The curriculum combined technology skills learning, aesthetic/craft development, and experience as workers in an "authentic" work environment (Betts 2003, 2006).

This article is about a second apprenticeship program supported by a University/Community Partnership grant from the Kellogg Foundation that engaged university students as student teaching artists (STA's). The introduction of STA's into this program created a unique dynamic in which these university students functioned in a multidimensional role: as apprentices to the teaching artists, as co-learners with both the teaching artists and the students, as model learners to the students and teaching artists, and as teaching artists to the students.

Because professional development for teaching artists in all disciplines is an important priority (McCaslin and Cohen), we studied this dynamic apprenticeship model, focusing on the experiences and contributions of the novice STAs working in the extended program in multimedia. The STAs were there three

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times a week over three semesters. They had many roles: as student teachers, assistants, coaches, and mentors to the students. This article is about their experiences and their development as multimedia teaching artists. It is about their contributions to the curriculum of MAEP. It is also a reflection on the importance of this kind of practical experience in developing effective teaching artists in multimedia.

Multimedia Arts Education Program

MAEP was a program of the Tucson Pima Arts Council. Sixty to seventy middle school students came downtown from all over the county to the offices and art museum setting each semester. They worked in the computer labs after school four afternoons a week. The program involved some six hundred hours over five semesters. The teaching artists were professionals in one of the four areas: desktop publishing, computer graphics, animation, and video production. The students learned to use professional tools and published brochures and broadsides with their own poems and interviews, produced their own logos and business cards, created animations, and videotaped and edited narrative stories they had written. Fifth-semester students revisited earlier projects and produced a multimedia portfolio. Two motivating factors for the students were that they could earn a small stipend ($25) each semester for attendance and completion of their work, and when they completed the program they each received a computer and printer to take home for their own use.

MAEP targeted at-risk middle school youth from disadvantaged families. Originally funded in part by the federal Job Training Partnership Act, MAEP was based on three ideas: school-to-work transitions, workplace literacy, and art technology skills. In order to earn their stipend, the middle school students learned what it was like to have a job that required attendance and punctuality. Students also were required to write project proposals and present reports on their work. Each semester was structured so that students first acquired basic art and computer skills in the specific medium, so that they could go on to create their own individual projects.

Teaching Artists

The program's five teaching artists were hired because of their professional experience in art technology and interest in teaching. Graphic artists, poets, and video producers, for example, taught those respective

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Creating characters for a new animation in the animation lab.

areas. In order to balance this workplace expertise in MAEP's educational setting, the program director and I initially helped define learning objectives and structured the curriculum for the first semesters.

Student Teaching Artists

Five university students—three male and two female—joined us as STAs in the second year of the program. They were selected for their interest and experience in teaching multimedia and literacy. Three were graduate students who were also teaching assistants on campus, two in education and one in creative writing in the English Department. The two undergraduates, both from Education, had experience teaching middle school age children in informal settings. One of the graduate students was from Turkey, one from Boston, and one from Tucson. The undergraduates included a young woman from California who was a member of the Navajo tribe and another individual born in Mexico. None of them were multimedia experts, but all had a working knowledge of basic software; were interested in learning how to teach new literacy skills to young people; and, of importance, knew from experience how to approach a learning curve associated with new software.

The STAs were actively involved in learning and teaching computer and language arts skills, helping the middle school students, and managing the lab groups. They also helped create or refine curriculum outline and lesson plans. They kept a journal about their experiences as a means of reflecting on what they were learning and of communicating with me about their process.

The STAs purpose in taking this job was to get teaching experience in technology with this age group. They each had an interest and experience in education and brought to the setting an understanding of curriculum that complemented the skills of the professional artists. If they weren't experts in the art technology activity, they had an understanding of how to approach a learning curve and served as a model for the younger students.

The STAs were hired to assist the teaching artists, observe in the labs, and learn the skills being taught so they could assist the younger students. In many cases they learned to use the multimedia software and tools along with the younger students. Based on

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This semester, the all girl Video Production lab team created *Don't Run Away*, a ten-minute video about the importance of family and communication.

their own experiences as novices, having dealt with the learning curve that new computer software involves, they were able to demonstrate for the middle school students how the learning process might go. They were able to help the teaching artists define learning objectives and plan curricular activities. The STAs also generated teaching resources and contributed in many ways to the course of study for each lab. They learned new software applications and art technology processes, and they learned about establishing communication and trust with preteens and young teenagers. In their dual role as teachers and learners they had cause to reflect on what they were getting out of the experience.

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Students working on their Adobe Photoshop personal logo projects with the Graphics lab instructor.

The tasks in each lab were made up of operations and actions relating to each medium. For the Graphics lab, for example, the students learned to use a complex and powerful professional digital image manipulation tool. The Language Arts/Desktop Publishing lab focused on English language arts (important for many of the program's students who were English Language Learners) as well as printing and design layout software.

The MAEP experience was cumulative. Ideas, problems, and considerations engaged in one lab came up again in another medium in the next. Stories created in the Desktop Publishing lab one semester might become the basis for an animated tale in the next. Finally, in the fifth-semester Portfolio lab, students got to revisit earlier work and built an electronic portfolio of their work.

The Language Arts/Desktop Publishing lab was an important part of the program and was usually scheduled first if possible, because most of the MAEP students needed help with English and many already knew how to use the word-processing software. The first two STAs hired, G. and M., both graduate students, helped in this lab by identifying resources to be part of the curriculum and creating assessment tools. These tools and the learning objectives helped to give the lab focus. They helped to integrate the English structure content with technology by identifying and interconnecting appropriate Web resources.

. . . not all the teaching artists were enthusiastic about having another "student" in their lab. Some were worried about not knowing what to do with "another body that might not know any more than the kids"

That this first interaction proved useful was helpful because not all the teaching artists were enthusiastic about having another "student" in their lab. Some were worried about not knowing what to do with "another body that might not know any more than the kids," as one teaching artist put it. However, as each STA demonstrated his or her ability to learn to use the software and other tools quickly, and showed a willingness to help others, he or she was eventually accepted as part of the teaching team.

Apprenticeship

MAEP had a strong basis in school-to-work learning and used elements of apprenticeship to create an authentic work environment. (Berryman; Brown, Collins, and Duguid; Collins, Brown, and Holum). The introduction of STAs in the program created a dual apprenticeship structure that had special and unique benefits for the STAs, the students, and the teaching artists. In cognitive apprenticeship theory, a student learns through association and collaboration with a master who provides advice and expertise. This process brings increased control and ownership by the learner (Guzdial and Kehoe). Each lab was a productive microworld, an activity system based on creating a community of practice. In such an authentic work setting, learning was more likely to be clearly contextually situated (Lave and Wenger), as opposed to scientific, or schooled, learning (Vygotsky), where the setting may be less authentic and the learning more abstract. This became a productive tension for the program: to balance the school and the work. The middle school students complained when it was too much like school.

One joins such a community of practice through legitimate peripheral participation. (Lave and Wenger). The concept theorizes how a community of practice accepts new individuals and reproduces itself (Wenger). It offers a way to speak about crucial relations between the expert and the novice. The teaching artists, experts with the technological skills and art experience, led a group of apprentices, the middle school students, through the basics of their craft. Learners moved toward full participation in the sociocultural practices of that community. The STAs, while sometimes learning the same basics, were also teaching apprentices in each lab. They were student teachers, moving toward teaching independently. Learning in this context was fundamentally a social process with interaction, collaboration, and mutual critique as standard practice.

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Three students illustrating their stories in the Animation lab.

New Literacies

The underlying justification for establishing MAEP was the perceived need to generate students who could produce as well as consume the various sign systems of new media. "New Literacies" is a term of inclusion encompassing the various semiotic environments in which we find ourselves, as consumers and generators of U.S. culture (Leu et al.). Full participation in this culture means being able to "read" and "write" in a large and ever-increasing variety of modalities. Students encounter a complex web of contextually situated new literacies in their daily life (Gee). Contemporary texts often consist of different interrelated modes of communication and new ways to think about reading and writing (Kress). The activity in each MAEP lab required several types of literacy.

Project proposals and reports required basic grammar and composition as well as design and aesthetics. In the Language Arts/Desktop Publishing lab students used skills they were learning in English classes at school. The computers, which they easily learned to use, allowed them to manipulate multimodal language and media. In a way it was a review for their work at school, but at MAEP the output was computer mediated and the process was creative and student centered. Students wrote reflections, proposals, and progress reports for their independent projects and used these to present on their work to the larger group. In the Computer Graphics lab students arranged images and blocks of text, and in the Animation lab they created storyboards and animated letters as characters. Video activities involved collaborative ensemble work writing a script, shooting, and editing. Students wrote treatments and proposals and used a computer-based special effects system to make on-screen titles.

Each lab was a unique activity system that had its own culture made up of the participants, the tools they used, and the rules that they negotiated. For one semester it worked out that the video production lab was all girls. They produced a video called *Don't Run Away.* They created the story, invented the dialogue, and learned every process during the production, including the camera, lights, and editor, and in an open, creative atmosphere they learned to challenge ideas and appreciate the need for discipline in such ensemble work. Each lab was influenced by the preference and background of the teaching artist. The addition of the STAs in the second year was directly related to organizing the curricular approach to multimedia skills.

Teachers attended a regular professional development program as part of their weekly meetings. These sessions were presented by the program director or an outside expert and covered a variety of topics and issues such as classroom management, diversity and ESL issues, and curriculum development.

Findings

We had three means of understanding the experience of the STAs: participant observation by the STAs; author journals that STAs shared that gave a view of the daily activities in the labs; and interviews conducted by the author with STAs, middle school students, and the teaching artists.

We found that the university students learning how to be teaching artists in multimedia arts valued the apprenticeship relationship. We also found that the relationship was reciprocal.

The teaching artists benefited from the STAs' experience in education. They soon overcame their initial hesitation about having another adult in the lab who would sometimes teach. They found ways to teach and learn at several levels that complemented the goals for these middle school students. The attention paid to scope and sequence in each of the program's art technology areas subsequently paid off for the students who, as a result, were better able to grasp the content.

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Using the video editor in the Video Production lab to create a countdown.

Several categories emerged from STA interview and observation data, which allowed me to examine the development of MAEP as an activity system. The important categories were Pedagogy, Curriculum, Roles, Professional Development, and Communications. They were related to the STA professional development and express the challenges met and lessons learning during their work as student teaching artists. The following are representative reflections and interview responses related to these issues.

Pedagogy

Learning how to be better teacher was a very important priority for the STAs. They often reflected on the teaching styles they observed and on their own developing techniques. Their notes contained descriptions of watching others teach and their critical evaluation. Three factors emerged as important in developing successful student teaching artists in multimedia: technical skills, knowledge of aesthetic criteria, and pedagogical skills. These factors represented best practice and all three factors benefit from practice in a real-world context. They were learning firsthand how to create a constructivist learning environment and how to move a group of students toward established goals. The STAs first had to learn basic technical skills themselves and then teach the students. They also had to establish aesthetic criteria and use critique to assess student progress. They also were called upon to support the school-to-work goals and expectations for students.

G., in the Computer Graphics lab, observed,

> [TA] has a constructivist approach. When the student does something wrong, he wants him/her to find out what causes the problem. In other words, he encourages problem-finding and problem-solving.

J., in the Video Production lab, suggested,

> It seems it might be beneficial that the students receive a formal or more in-depth lecture on editing to instill a better understanding of the process of editing.

Curriculum

The STAs were charged with helping to codify, or sometimes create, curriculum scope and sequence, course content, and activities to support the desired outcomes based on the goals of the lab. They were not all involved to the same degree. Some teachers were experienced at establishing curriculum and just needed the extra hands and eyes to help the kids. In other cases the STAs helped by listing the desired learning outcomes to be set as goals for the lab and structuring activities that would move students to those ends. STAs working in the Desktop Publishing lab found free software on the Web to support composition and helped to integrate it into the curriculum. They found ways to integrate the Graphic lab's new Internet hookup as a tool for research a source of images. Eventually, each STA created lesson plans and got to try them out.

G., in the Computer Graphics lab, reported,

> During the class time, I showed the teacher the learning objectives I came up with for the Graphics class. He was excited about seeing whatever he does in the class broken down and listed. He thinks it is quite a scientific approach. He said he wasn't aware that he did all the sophisticated things that were stated in the objectives.

The learning objectives and lesson plan outlines that the STAs helped to develop showed a balance between aesthetic, technical, and pragmatic considerations in each lab setting. For example, in the Video Production lab the first objectives were listed as the following:

- Utilizes critical viewing skills, requires students to reflect.
- Analyzes, critiques, and evaluates sample video through "Deconstruction," which involves studying the video's integral individual components.

In the Language Arts/Desktop Publishing lab, the student will be able to

- Use the public library/librarian/Dewey decimal system.
- Use the computer to create, store, print, and check spelling of documents.

In the Computer Graphics lab expectations were that each student

- Knows basic concepts.
- Defines Graphic Design.
- Defines "critique" as an opportunity to share impressions and receive positive feedback.
- Lists main principles of graphic design (variation, repetition, alignment, proximity).

STAs' Roles

How they were being utilized in the labs was an important for these busy college students. At the outset, the STAs were not uniformly accepted in their roles. As college students they were not familiar to the middle school students, and at first some of the teaching artists felt that they had been foisted upon them. But because they were serious about helping and demonstrated their intent, these issues were more or less resolved. They reflected on how their place changed over time.

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A student's personal logo, created with Photoshop in the Graphics lab.

C., in the Desktop Publishing lab:

> I'm also feeling kind of uncomfortable right now. Sitting in the corner and writing this reflection, I don't know how the teacher feels about this. It might be uncomfortable for him. This is an issue to be brought up in one of those Thursday meetings. We certainly need to clarify what our role is here.

G., in the Computer Graphics lab:

> I guess it'll get better and better because [TA] gradually gives me more responsibilities. I'm also learning to ask for more responsibilities.

M., in the Animation lab:

> This semester I take more initiative than the last semester. I directly interfere when there are discipline problems unlike last semester. I also participate in teaching more.

In the teaching artist interviews each semester we learned how helpful it had actually been to have the STAs working in the labs and what contributions they had made toward the MAEP goals. The individuals in both groups reported seeing substantial progress in STA knowledge of lab content, teaching skills, and class management. Several of the teachers reported that the process of identifying learning objectives and developing lesson plans based on them, conducted by the STA, contributed to their own teaching improvement.

> Desktop Publishing: "The process of writing curriculum in a structured way has made it much easier for me to teach things effectively."

Teachers reported that, after they got used to the idea of having a student teaching artist in the lab with them, the STAs proved helpful. Typical comments were, "They generated new ideas, new ways of looking at activities" and "They provided an extra pair of hands."

As apprentices, the STAs came to MAEP with known knowledge gaps, that is, they weren't expected to know how to use the software programs in each lab. Their ability to get the information they needed to use these tools made an excellent model for the middle school students.

Professional Development

STAs wrote about gaining new technical skills. Having to both learn and teach much of the software and hardware tools they were using in MAEP caused them to reflect on the importance of teaching how to learn. They also acquired new teaching skills and classroom management techniques that were valuable to them and gave them increased confidence. The STAs gained new knowledge of technical and design issues and they enjoyed the process of learning by observing another a teacher's teaching style.

G., in the Computer Graphics lab, reflected,

> I enjoy watching T. teach. I have myself used Photoshop very often; however using it is so different from teaching it. He verbalizes our subconscious processes that we go through while using a computer program. Educational technology programs should certainly have methodology courses for teacher candidates on how to teach computer programs, just like how to teach reading or writing.

The STAs showed initiative in getting training to improve their technical skills in response to the needs of each lab.

J., in the Video Production lab:

> Dr. B., you mentioned that there might be an opportunity for me to review operating the video production equipment. I was wondering how I might go about this. I have not done editing, which I imagine will be covered in class. I feel if I have better knowledge of this particular equipment and the lesson plan, I might be better able to assist.

They got to put their new skills into practice. They became part of the teaching team, doing actual teaching and reflecting on their own work.

J., in the Video Production lab:

> When subjects on which I have experience and/or knowledge arise, she asks me to interject in the lecture. She does it in a way that does not put me on the spot, which I greatly appreciate. I feel these situations are very useful in allowing me to assert myself in the class as an "assistant instructor."

M., in the Desktop Publishing lab:

> At several points today, I found myself alone in the classroom with the kids, and while it was interesting to feel "in charge" to some extent, I constantly question the legitimacy of my free-style teaching technique. If anything, I am becoming increasingly interested in studying education.

Communication Patterns

The STAs had been cued to observe patterns of communication that they saw. They reported communication occurring from student to student, teacher to student, STA to

student, and student to STA. They didn't often report on their communication with the teachers for some reason, although these were important exchanges. It may be that they were so central to the experience that they were simply absorbed. The student-to-student conversations they observed related to affective domains as well as collaborations and productivity:

Student to Student

P. and G. spend perhaps too much time "working together," but it is fair to say that the three girls, P., G. and S., with the sometimes addition of Y., have become pretty good friends and they are happy to see each other each day.

M. and O. spent a half hour helping S. catch up with his project.

The lab was quiet today as they were finishing up their first project, lots of peer helping, though.

For the STAs, acceptance by the MAEP students and this age group in general was not a given, and these university students were looking for signs that they had been accepted. Any reaching out was to them a good sign that showed an opportunity to build trust.

Student to STA

One student approached me and wanted to show me her 5×5 image. We had scanned the pictures together for her image. I was happy she did it. This tells me that there is some kind of rapport established between the students and me.

STAs noted that most communication in the labs at first was of the typical classroom sort: the teachers spoke and the students listened. From their journals and observations, we saw that the amount of being talked to lessened, as they all got busy working on their individual projects.

Teachers to Students

He [teacher] spent most of today lecturing on the history of animation, the kids enjoyed the old examples he used.

J. announced, "work on projects day."

In the final interviews the STAs stated that they had learned a great deal. Some mentioned the computer tools, some mentioned classroom management, and all felt that they made a contribution to MAEP and the students. They showed that they were aware of the motives of the students' families, who saw MAEP as an opportunity and put a lot into supporting their children's participation.

STAs viewed MAEP as a complex and realistic worklike setting and important to emphasize the various attributes of art technology as career possibilities.

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Another student's personal logo, created with Photoshop in the Graphics lab.

The Student Teaching Artists had been cued to observe patterns of communication that they saw. They reported communication occurring from student to student, teacher to student, STA to student, and student to STA.

The aesthetics, the technical, and the pragmatic combined to engage the students and through their long-term commitment. Our long-term study showed that the MAEP experience would make a long-lasting impression on the middle school students' high school careers and, in many cases, beyond.

Discussion

In a way this was a formative experiment, with the goal of improving MAEP by putting these university students into the mix at MAEP to gather information and create new parts of the program. The STAs and the teaching artists identified hands-on experience, with students learning technical skills to use new tools to do challenging things based on their own ideas, aesthetic criteria that raised standards for students and for faculty and pushed everyone beyond basic computer use and knowledge, and pedagogy as contributors to best practice in multimedia arts education.

The MAEP continued for three more years with many of the same teachers using the revised curricula established with the apprentice STAs.

Implications

The MAEP student teaching artist apprenticeship model showed the value of three factors in developing successful student teaching artists in multimedia: technical competence, knowledge of aesthetic criteria, and pedagogical skills. Together these lead to best practice and all three skill sets are enhanced by practice in a real-world context. Working with a professional artist in MAEP contributed to the STAs understanding of professional applications of the skills they were helping students to learn. Current teacher education programs may fail to fully equip multimedia teaching artists with such skills. Internship opportunities in programs like MAEP can provide invaluable experience to fill the gap.

Works Cited

Berryman, S. E. *Designing Effective Learning Environments: Cognitive Apprenticeship Models*. New York: Institute on Education and the Economy, Columbia University, 2006.

Betts, J. D. "Art + Technology Integration: Developing an After School Curriculum." *Afterschool Matters*. 2 (2003): 13–22.

— "Multimedia Arts Learning in an Activity System: New Literacies for At-Risk Children." *International Journal of Education and the Arts* 7.7 (2006). http://ijea.asu.edu/v7n7/

Brown, J. S., A. Collins, and P. Duguid. "Situated Cognition and the Culture of Learning." *Educational Researcher* 18.1 (1989): 32–41.

Collins, A., J. S. Brown, and A. Holum. "Cognitive Apprenticeship: Making Thinking Visible." *American Educator* (1991): 38–47.

Gee, J. P. *What Video Games Have to Teach Us About Learning and Literacy.* New York: Palgrave Macmillan, 2003.

Guzdial, M., and C. Kehoe. "Apprenticeship-Based Learning Environments: A Principled Approach to Providing Software Realized Scaffolding Through Hypermedia." *Journal of Interactive Learning Research* 9.3/4 (1998): 289–336.

Kress, G. *Literacy in the New Media Age*. New York: Routledge, 2003.

Lave, J., and E. Wenger. *Situated Learning: Legitimate Peripheral Participation*. Cambridge, UK: Cambridge UP, 1991.

Leu, D. J., Jr., et al. "Toward a Theory of New Literacies Emerging From the Internet and Other Information and Communication Technologies." *Theoretical Models and Processes of Reading*. Eds. Ruddell R. B., and Unrau N.. Newark, DE: International Reading Association, 2004. 1570–1613. http://www.readingonline.org/newliteracies/litindex.asp?HREF=leu

McCaslin, G., and M. Cohen. "Professional Development for Teaching Artists: A Sampling." *Teaching Artist Journal* 2.1 (2002): 4–11.

Vygotsky, L. S., *Thought and Language*. Cambridge, MA: MIT P, 1962.

Wenger, E. *Communities of Practice: Learning, Meaning and Identity*. Cambridge, UK: Cambridge UP, 1998.

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