Omaha SCIENCE MEDIA PROJECT

2009 Workshop Evaluation Summary

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CENTER FOR INSTRUCTIONAL INNOVATION

UNIVERSITY OF Nebraska Lincoln

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Project Description

The Omaha Science Media Project (OSMP) involved sixteen Omaha Public School (OPS) teachers and fifteen Omaha Public School students in an intensive, collaborative two-week summer workshop about viruses and infectious disease in July 2009. Teaming up with media professionals and content specialists, these teachers and students worked as "science journalists" to create media productions (audio, video, and multimedia) focusing on different virology topics. Participants were grouped into eight teams, each of which included two teachers, two students (except for one team that had one student), a media mentor, and a content mentor. These teams were each assigned to a virology topic, and were provided access to a virologist or other virology expert working in the topic area. The OSMP workshop model included three key features that differed from a more standard inservice "teacher internship" science learning model. These unique features were:

1) Participant immersion in a virology research topic during a two-week period, including access to research staff, labs and to a full-time facilitator, some of whom were content specialists,
2) Inclusion of students as partners in the learning and production teams, and
3) Development of media products as an outcome, with continuous access to media mentors to facilitate this goal.

The goals of the project were 1) to produce high-quality, classroom-ready media products about virus topics that were relevant to students in middle and high school and 2) to improve the pedagogy of these teachers through this experiential professional development. While the media products were not expected to be in final form at the completion of the workshop, the overall storyline and content of each was expected to be well-defined, and the media professional assigned to each group had agreed to do the final finishing to the product after the end of the workshop. In addition to these media products, it was expected that through the process, the teachers would learn media and journalistic skills that they would be able to infuse into their classroom teaching, with the goal of increasing student learning and interest in science and health careers. Specific science learning and media learning outcomes guided the teams (see Table 1).

Table 1. Science learning outcomes and media learning outcomes provided to each team.

SCIENCE LEARNING OUTCOMES Youth develop an understanding of …	**MEDIA LEARNING OUTCOMES** Youth develop an understanding of….
1. What is a virus?	1. How do you plan and research to tell a science media story?
2. How do viruses reproduce inside a cell?	2 How do you record a science media story using a variety of devices?
3. How do viruses spread from one individual to another?	3. How do you gather material and edit that material into a science media story?
4. How do viruses evade host defenses?	4. How do you share a science media story with peers, teachers, and parents?

Participants: Eight OPS middle school teachers and eight OPS high school teachers applied and were accepted to participate in the two-week workshop. The teachers included three disciplines: science (twelve teachers), media/technology (two teachers) and journalism (two teachers). Fifteen students, all of whom had just completed 8th grade, were chosen to participate. These students had been selected from a larger pool of identified students who had been asked to apply. The pool of students were identified based on a number of characteristics, including achievement and aptitude scores, demographic characteristics, and teacher recommendations with the goal of identifying students with an aptitude for science who may be underachieving.

At the conclusion of the workshop, we asked for written feedback from both the teacher and student participants about their workshop experiences. This report summarizes this feedback.

Purpose of Evaluation

The purpose of this evaluation is to describe the feedback provided by the participants in the program with the goal of helping project staff better understand participants' experiences and provide relevant information for planning future teacher workshops incorporating media production within a discipline. It provides an opportunity to reflect on the workshop process and consider some of the strengths and challenges of the workshop.

Data Collection

On the last day of the two-week workshop, both teachers and students were asked to complete a written survey about their workshop experiences, and then the evaluator led group discussions with each group about their feedback. The survey instruments were developed in consultation with OSMP partners including the OPS Science Supervisor, the OSMP Coordinator, and other OSMP staff. Results presented here represent feedback from both teachers and students.

Results

Results will be described in the following main areas:

1) The impact and utility of the workshop for the participating teachers,
2) Strengths and challenges,
3) The role of students in the learning team, and
4) Teachers' recommendations for change.

The impact and utility of the workshop for the participating teachers

The participating teachers were expected to master new skills with respect to journalistic story-telling techniques as well as new technology including recording, logging, and editing their media product. The goal was for them to be able to take these new skills back into their classrooms to their students.

When asked "What do you think will be the most valuable future outcome of your participation in this project?" and "How will OSMP experiences change your teaching?" responses were mostly positive and diverse, reflecting the range of teachers' skills and perspectives, as well as the breadth of the workshop objectives. Anticipated changes fell into three main categories: pedagogical changes, curricular changes and changes outside the classroom. Two or more of the participating teachers articulated each of the following anticipated outcomes.

Pedagogical changes

- **Teachers will bring their workshop experience back into their classroom,** and specifically, increase use of media to teach science. Comments included, "[I plan] to take current media making techniques and place it in the hands of students [and] to facilitate them with their own projects."
- **Teachers' new skills will increase involvement for all students.** As one teacher wrote, "[media projects] will be a great hook for not only borderline students, but also the gifted." Another commented, "I will use media production in my classroom to help teach science. I think it is a wonderful way to get students involved because media is such apart of our lives today."
- **Teachers recognize more than ever the importance of making science relevant to their students.** One teacher explained, "I [see] the impact of relevance. If we would have started this process with lessons on viruses, the students would have checked out. They became more open to learning as it became more important for them to understand." Another teacher commented, "Students need to see the big picture when it comes to learning science. They don't relate it to their lives day to day! But relating the knowledge to an outcome such as the research done at UNMC and what the researchers are doing their labs and how they are discovering cures for diseases hits home!"

Curricular changes

- **The teachers envision making curriculum improvements and integrating media across different subject areas.** Comments included, "After this experience, I have a renewed enthusiasm for working with teachers in other content areas," and "I will be able to use this for our freshman biology courses. I will also take the ideas and use them in Social Studies and other subject areas."
- **The teachers are better able to integrate the story-telling process into their lessons.** One teacher commented, "I think I will always be looking for a 'story' to tell and an engaging, exciting way to share it with others."

Changes beyond the classroom

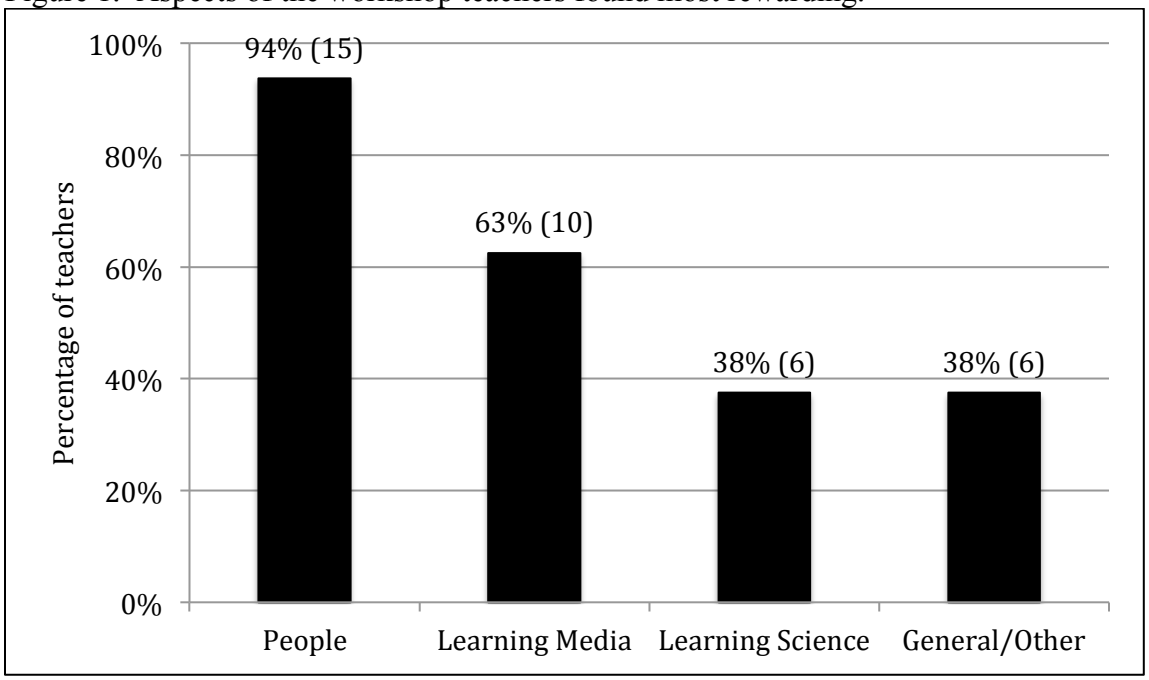
- **The teachers hope to continue connections with scientists and media partners.**
- **The teachers improved their skills in working with a diverse group of partners.** One teacher wrote, "I learned a lot about the value of collaboration!"

Overall, 94% of the teachers agreed that their participation in the workshop would be somewhat or very valuable in their future teaching.

Strengths and Challenges

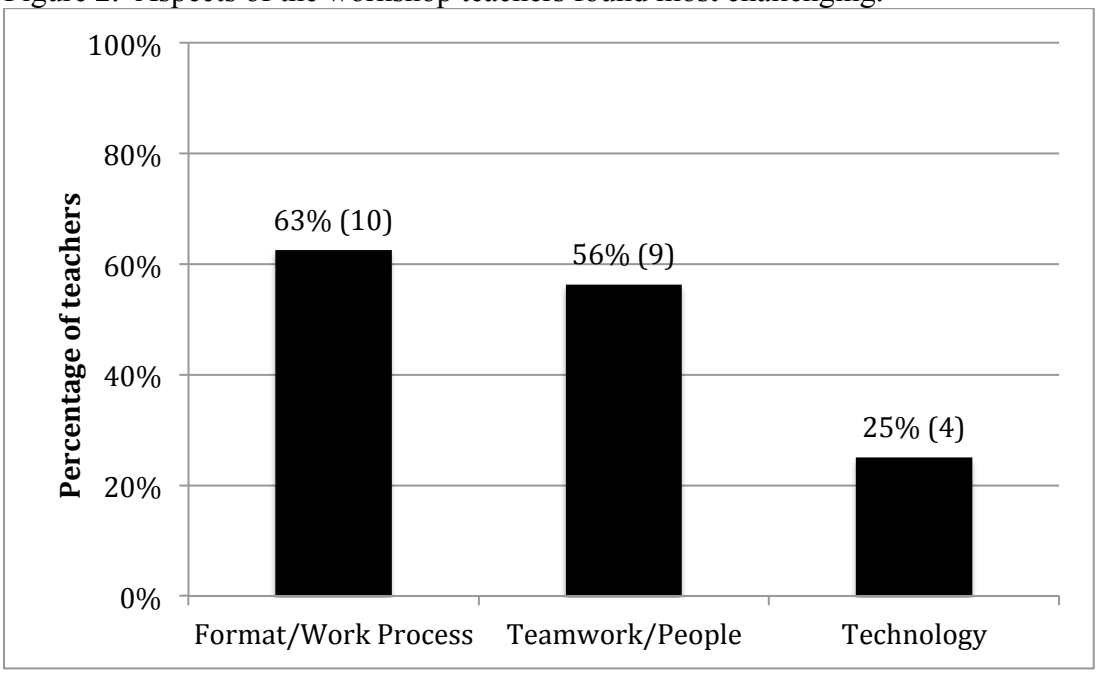
When asked to articulate the most rewarding and most challenging aspects of the workshop, teachers responded with more positive than negative comments. Overall, almost every teacher found interacting and working with the other people at the workshop was the most rewarding aspect of their experience (see Figure 1). Teachers wrote that they enjoyed, "working with kids," "working with the medical professionals and media professionals," and "being able to work with some truly amazing people in a collaborative effort." Many teachers also found learning new technology skills rewarding. As one teacher wrote, "Learning all that goes into media production was amazing." Over a third of teachers also commented on the science experience, indicating they enjoyed, "learning more about viruses," "being allowed into the science lab," and "working with the doctors and seeing their research." Other comments about the most rewarding aspects included, "developing a 'professional' project and seeing some growth in the two students I worked with," and more general comments, such as "new learning (new understanding)."

Figure 1. Aspects of the workshop teachers found most rewarding.



With respect to the most challenging aspects of the workshop, teachers cited the work process or the format of the workshop most frequently (see Figure 2). One teacher wrote, "The most difficult part was sitting through the lectures during the initial days of the workshop." Other challenges included "developing the idea for a story," and "[getting] a finished product done in the two weeks." The next most frequently identified challenge was in managing the team process successfully. One teacher felt they struggled to "find a balance of participation within our team," and another wrote wrote, "the most challenging part of the workshop was getting the grownups to work together." In addition, a quarter of the participating teachers mentioned challenges in learning the technology, both in terms of "keeping up with the students on technology skills," and "trying to learn the final cut Express program. One teacher expressed this in a somewhat different way, writing, "I didn't feel that I got as much 'hands on' learning as I was expecting.

Figure 2. Aspects of the workshop teachers found most challenging.



The role of students in the learning team.

Overall, the inclusion of students in the learning teams had a positive impact. Almost all the teachers agreed that the students contributed key ideas to the media products that made them better and more relevant than they would be have been otherwise. However, by having the students complete so much of the production work, the teachers were not provided with as much opportunity to develop their own technical skills.

When asked "how did the inclusion of students in your team impact the science media story process or product," the majority of teachers (88%) felt that the students made an important, even essential, contribution to the creative process. In particular, the teachers described how the students helped shape the stories to make them relevant and interesting to other students.

"The students' inclusion was incredible. They designed and carried out a plan that made our product come together. Without them, the project would have been flat."

"Students helped at all steps to develop our story for a student audience"

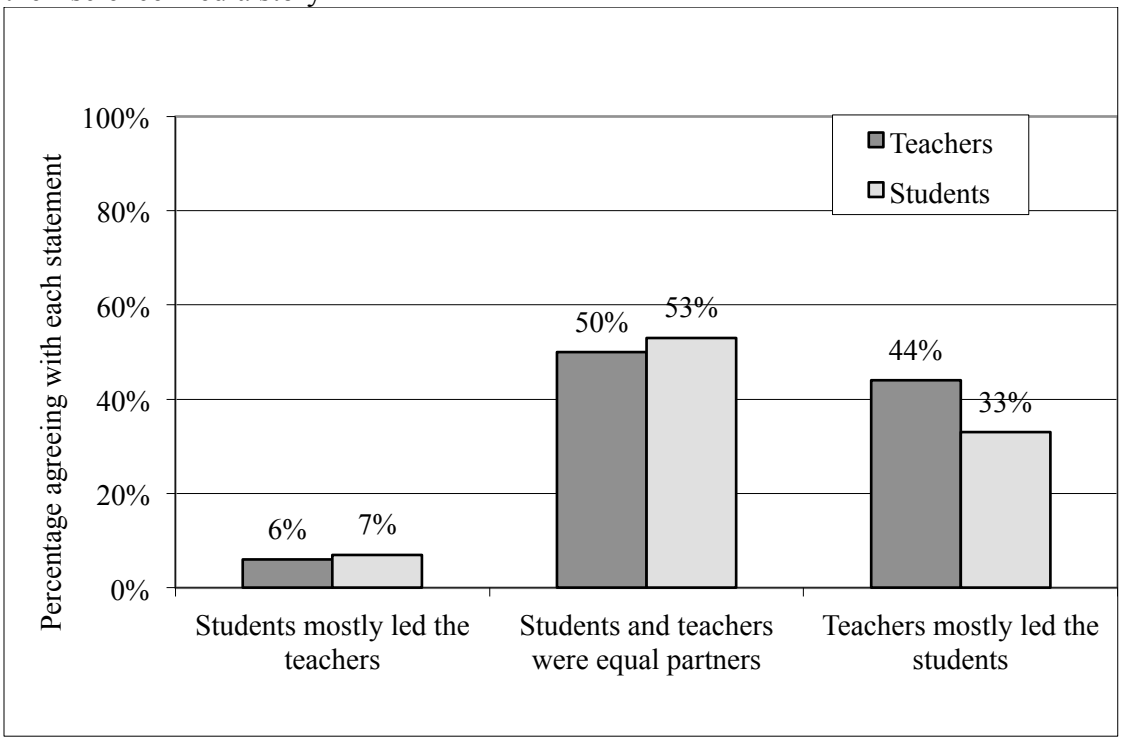
"The product includes vernacular that is common to 13-15 year old students. The story includes humor that students relate to.

"Students provide the answer to the question, "so what?" They know, and we are able to tell what is interesting and important to them."

While a few of the teachers acknowledged some difficulties in working with these students, either in terms of motivation or keeping them on task, most felt that they were able to work through these issues over the two-week time.

With respect to the student perspective, most felt that they were viewed as contributing, important members of their working team, with 94% agreeing that the adults in their group asked for their opinions, and 87% agreeing that their group used some of their ideas for the media story planning and production. In addition, half of the teachers and the students felt that the students had at least an equal leadership role as the teachers in their groups. See Figure 3 below.

Figure 3. Participants' perceptions of leadership roles within their team in making their science media story



For the students, the workshop provided them with useful, fun, and positive experiences that had an impact on the way they view science, technology and media, mostly creating more positive attitudes. The overwhelming majority (94%) of the students agreed or strongly agreed that what they learned at the workshop will help them in high school. When asked "How did being part of this workshop change you?" students' responses to more global questions were positive, with the large majority of students feeling better about themselves, and with no students feeling worse or feeling that the workshop had no effect on them. In addition, many students became more interested in science and technology because of their participation (see Table 2), although a few were less interested.

Table 2. Percent (number) of students endorsing different statements about how the workshop changed them (n=15)

Science Attitudes	
I want to learn more about science	67% (10)
I want to learn more about viruses	67% (10)
I want to take more science courses	60% (9)
I want to work in a science lab	33% (5)
I don't want to become a scientist	33% (5)
I want to avoid science courses	20% (3)
I don't want to work in a science lab	20% (3)
Media Attitudes	
I'm better at using technology	93% (14)
I want to work more with technology	80% (12)
I want to take more media courses	73% (11)
I don't like using technology as much	7% (1)

Overall, students found their experience at the workshop worthwhile and enjoyable. When asked to name five words to describe their experience, the most frequently generated words were, "fun" and "exciting."

Teachers' recommendations for change

When asked what changes they would recommend to the workshop, almost all the teachers had some specific ideas. The most frequently cited change was to enable the teachers to gain more skills with the equipment and software they were using to create the media products. Several ideas to accomplish this were suggested, including providing the teachers with access and education on the equipment prior to the workshop itself, with comments such as, *"*I think one thing I would do is have first a teacher workshop just to train the teachers on the whole process first," and "Train the teachers first. The students were told to take control of editing, etc. but if the students are doing the work, how can the teachers learn." Teachers also suggested providing more hands-on equipment time for the teachers during the workshop, and using less complex equipment.

Several teachers felt that the students could be accommodated better, with shorter days ("consider shortening the day for students only"), and/or more active time. Some suggestions on this included, "Collaborate more with teachers on students' activities to help get students more engaged, [so there is] less dead time," and "since we are working with younger students, have

short activity times. Doing the work is our focus; I think time for "camp" would go a long way." A few teachers also thought that a modified selection process to identify more motivated students or selecting older students would have created a more productive work group, since "the maturity level of the students was difficult to work with and their interest sometimes waned." One suggestion called for training the students on the equipment first, so they "would have been able to teach us."

Finally, by creating eight separate groups that worked independently, each group needed to coalesce and work productively as a team with each member contributing. The dynamics of the group process were more difficult for some groups than others. Some teachers felt that they could have benefitted from clearer expectations and explicit direction on the process and products of the workshop, including defining more specific roles for individuals within the groups.

> *"[the leaders should be] a bit more clear on the 'road map,' a little more detail about the final outcome expectations."*

> *"The media people should conduct a media workshop to teach us the media. Then they should turn the teacher and student loose to go practice what they learned by making a video. They can be consultants if need be. Having too many 'directors' on a team is stressful."*

Recommendations

For future workshops of this nature, some lessons learned emerged from this evaluation. First, the general format and purpose of the workshop was a strength. The creation of small teams of teachers and students working together to create a media product, and providing them with support and guidance from media experts and a content mentor, with access to scientists, resulted in a productive, workable structure. Including the students as contributing members of the team was identified as a key component in making the media products relevant to a student audience. However, group dynamics emerged as a barrier to productivity and cohesiveness for some groups. The collaborative process for some teams might have been enhanced with some brief preparation about group process and providing concrete strategies for working together. Finally, teachers felt that they needed more hands-on time to learn to use the media tools. This could be accomplished by a pre-workshop introduction with a small assignment using the actual equipment, more time built into the workshop for teachers to use the tools, or a different division of labor with the students. In addition, using simpler media tools that required less expertise would have reduced the learning curve and allowed for faster mastery of the equipment and software. Overall, the three key features of this workshop, participant immersion, student inclusion, and the goal of media products, all appear to have been important contributing factors to the success of the workshop.

Conclusions

The workshop was very well received by both the teacher and student participants. The inclusion of students proved to be an important element in the process of creating the media and the resulting product. The teachers reported that they learned many valuable skills that they anticipated incorporating into their own classrooms. They expect to increase student involvement and motivation through the use of media, and they envision making curriculum improvements in

their schools. Teachers also felt that they improved their skills in using a story-telling process and their skills in working with a diverse group. Most of the teachers felt strongly that the contributions of the students resulted in more relevant media products, and the students felt they were valued team members. The students experienced positive attitudinal changes as a result of their participation and reported an increase in self-confidence and in their interest toward science media and technology. In addition, teachers had a renewed appreciation for the student perspective, and said they could see the impact of making content relevant to their students.

The opportunity to interact with the scientists, media experts, and to collaborate in teams with the other participants were cited by both students and teachers as highlights of the workshop. The participants also felt that learning more about media and technology was one of the primary benefits of their participation.

With respect to challenges and suggested changes, teachers wanted to come away from the workshop with more skills in working with the media technology. They felt that this could have been accomplished through teacher-only training prior to the workshop, providing more hands-on time during the workshop, or using less complex tools. They also felt that the students could have been accommodated better, with shorter days, more active time, or other changes in the format of the workshop structure. In addition, some teachers felt that the group dynamics were challenging at times, since there was no designated "leader" of each group, but rather a collaborative team process that emerged. While this was the intent of the workshop, and most teachers agreed that this ultimately was a successful strategy, it added stress to the long hours, new learning, and high expectations of the workshop.

Overall, the Omaha Science Media Project 2009 summer workshop was a successful, enjoyable, and productive experience for the participants. The general format with the teams creating media products was a strength, and the inclusion of students was a central component of the success of the products. Participant immersion allowed for intense and productive group worktime, and the finishing of the products after the completion of the workshop allowed for a final, polished product to result.