Through Another's Eyes

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An Interdisciplinary Creative Problem Solving Conference for Both Teachers and Their Students

As teachers, we have all attended countless workshops which advocated new teaching methods, materials, or techniques in addressing special student populations. We politely listen as a series of presenters enthusiastically introduce their information in written and verbal form. We return to the classroom, fully intending to use our new skills, but perhaps feeling a bit anxious about their actual applications and ensuing results.

It is my opinion that teachers, like students, must be both physically and mentally involved in the learning process for it to be successful and meaningful. As a former elementary school teacher who is working toward an endorsement in gifted education, I had the opportunity to participate in the 2003 Baylor University Interdisciplinary Creative Problem Solving Conference. Rather than sitting passively and absorbing information presented, I actively participated in the creation and implementation of an interdisciplinary approach to curricular design based upon a creative problem solving model (Isaksen & Treffinger, 1985). I found the experience invaluable because I physically and mentally progressed through the steps of interdisciplinary curricular design and watched them come alive.

The primary purpose of the annual conference is to provide gifted secondary students with a forum to interact and address real-life problems while participating in a problem solving curriculum (M. Witte, personal communication, June 4, 2003). However, the conference also provides teachers of the gifted with an opportunity to interact, design a curriculum, and implement it using the problem-solving process.

My role was that of a counselor, an assistant to the facilitator. I attended planning meetings, helped set up the classroom, ate with students, and participated in all of the conference activities. The role of the facilitator was to provide instructions for the activities, guide student learning, and lead them through the steps of the problem-solving process. In addition, prior to the conference, facilitators were trained in the steps of creative problem solving, which are instrumental in the selection of the conference topic, writing the "mess" or problem to be solved, and choosing the theme.

The conference has been an annual event at Baylor since 1989. One of the founders of the conference, Joel McIntosh, president of Prufrock Press, said he came up with the idea because he thought that gifted kids, particularly those in the rural districts, needed to interact with same-age peers. He believed the conference could actually offer a stronger social component than an academic one because it provides a "validating experience" for the students, many of whom had never met other kids like themselves. His hope was that gifted kids would "grapple" with a real-life problem over which they could have an actual effect (J. McIntosh, personal communication, June 6, 2003).

For a number of reasons, the conference also provided an excellent academic learning experience for

gifted students. Organizationally speaking, conference planners and facilitators were well trained and experienced. Prior to the conference, facilitators attended a workshop designed to prepare them for implementing the problem-solving curriculum. Rooms, groupings, and materials were well organized so no time was wasted on confusion or missing supplies. The schedule of events created for facilitators, counselors, and students was strictly adhered to, and product development goals were met.

Academically speaking, Sandra Kaplan (1979) developed a number of principles she believed were significant to creating a curriculum that was differentiated for gifted and talented students. Some of these include thematic or problem-solving content based upon topics of interest, multidisciplinary study, the opportunity to learn independently, the integration of higher level thinking skills, and the use of materials and technology to produce products. The conference curriculum definitely adhered to these principles, as I will describe throughout my observations as a counselor.

For the conference and underlying curriculum to be successful, an interesting topic was needed. Prior to each conference, facilitators attend a planning meeting where they discuss potential topics they believe will resonate with young students. The topic is chosen, the mess is written, and a theme is selected. Facilitators, counselors, planners, and administrative support people all confer one last time to finalize the mess and develop generalizations based upon the chosen theme of "perspectives." This year's mess involved a 16-year-old who was being sued by a music company for downloading music off the Internet (see Figure 1).

The generalizations developed were as follows:
1. Perspectives vary among individuals.
2. Experiences shape perspectives.

Round Rock, TX. Johnny Grueben is being sued for $10,000 for violation of artistic copyright. Grueben, age 16, is a student at Tom Landry High School. Allegedly, he downloaded pirated music from the Internet. His grandmother, Muttie Grueben, had given him an MP3 player for his birthday.

A hearing is scheduled for next Wednesday to appeal this matter. The entire community has surged at this decision. It is going to be a very difficult decision for the Honorable Judge Hang M. High. He is scheduled to hear from all facets of the community. Attitudes in the community are being voiced in an online message board.

Message Board Postings 2/14/03–2/26/03

Muttie Grueben: I gave my grandchild, little Johnny, one of those little radio things for his birthday. I think he called it an MP-something or other. I don't know why everyone is so upset with his gift. He is only 16 years old. He is a good boy.

University law office: Violating copyright is illegal—period. Most musicians, bands, and/or record companies own the copyright to their music. Sharing copyrighted MP3 files is illegal. An MP3 file of a copyrighted work becomes illegal when it is freely distributed (or sold) without the permission of the copyright owner.

Anom: Thou shalt not steal . . . anything. It is simple.

Ethics professor: One of the most important ways of reducing crime is trying to teach ethics and morality to our kids. That same principle needs to apply to the cyberworld.

Josh: According to the TechStrategy Report prepared by Forrester, a company that identifies and analyzes emerging trends in technology and their impact on business, 31% of consumers download music and burn CDs often. These frequent digital music users buy 36% of all CDs. Currently, there is a music slump, but it is due to the economy and not due to downloading. In 5 years, 39% of digital sales will be downloaded singles. Grueben should not be fined. He is merely utilizing the technology.

S.F.: In every great battle, there are casualties, and Johnny Grueben is collateral damage. Even since the Napster suit, there has been an ugly legal battle with the Recording Industry Association of America, which is fighting to keep people from getting hold of copies of songs without paying for them. Johnny hasn't done anything wrong. He is just caught in the middle of a battle much larger than himself.

Figure 1
The "Mess" Perspectives

3. Perspectives influence decision making.
4. Sharing perspectives builds understanding.
5. Perspectives reflect society.

In keeping with Kaplan's (1979) principles, these generalizations pertained to a variety of different disciplines such as history, ethics, economics, law, art, technology, writing, sociology, computer science, and theatre arts. This mix of disciplines and the information the content experts later would provide were needed to form a solution to the mess. In discovering generalizations across disciplines that were related to the theme and its problem, participants at the planning meeting created a curriculum full of interdisciplinary information and activities. This curriculum offered instruction that was connected, useful, and meaningful to students. While I have read about the importance of interdisciplinary curricula, it really helped to observe one being developed and used.

Conference attendees consisted of gifted middle and high school students from approximately 15 public, private, and home schools in Texas. Approximately 50% of the students had never attended the conference before, while others had attended as many as four times.

Students were introduced to the mess using a skit performed by facilitators in a large auditorium. The skit was well received because the humorous elements entertained and interested students, while the more serious elements provided needed factual information. Students were particularly interested in this topic for several reasons. Many of them had downloaded music, many did not understand the illegality of downloading, some disagreed with copyright laws, and most preferred keeping the ability to mix songs and burn their own CDs instead of buying one at a store that may only have one "good" song.

Sal: There are copyright laws that protect books, software, inventions, etc. These same copyright laws should protect the music that these artists have worked so very hard to produce. They deserve a fair wage.

Dr. W.: Napster was forcing people in a lot of different industries to rethink their operations. It could, for instance, change the way the Internet works.

Artist: We have the right to copyright our music and earn a commission on each piece that we sell. If Napster gives away product for free, who will buy it from us?

Connor: Napster is the gangster that will be recruited by the FBI. In a *Business Week* article, Kevin Conry, BMG marketing chief, admits to being intrigued by the idea of building a secure Napster-like service. The article continued on to predict that Napster might be bought and "stripped for parts" by one of its supposed enemies before it gets shut down.

Webmaster: If ripping and sharing MP3 files is considered a violation of copyright law, then the development and sale of MP3 hardware and digital rippers should be outlawed, as well. Other than specifically restricted material, ISPs (Internet Service Providers) should not be held accountable for what their subscribers' host on personal Web sites. Music files can be posted and hidden on any Web site by changing their file extension to an alternative extension that indicates that it is another type of file. Naming convention schemes can then be interpreted and decoded by members of the sharing group, resulting in file swapping.

Johnny's peer: I don't know why I (or Johnny) am getting in trouble for this. Every student in the school downloads music off the Internet. There are Web sites all over the place that allow us to get whatever music we want, and nowhere on it does it say it is illegal. I don't deserve this because I didn't do anything anyone else doesn't do.

University tech expert: We have spent thousands of dollars to erect firewalls within our university to avoid this problem. It was not only Napster that was sued by the Music Association, but also several universities. Liability scares use, and we must try to block the use of such programs.

Bob: I am a university senior, and I don't see what the big deal is. I download songs all of the time. The CDs make great stocking stuffers for my friends at Christmas when I am low on cash, and when one of them wants a CD that I have downloaded, then I can sell them a CD that costs me $1 to make for around $3.

Artist's lawyer. Students don't need education when it comes to what is right and wrong. They are high school and college students—not idiots. They know when they are getting something they are not paying for. If the vending machine is broken and they take the chocolate, they know that it is stealing.

Rich: I see this as a case of dot.communism. The Web is a place where you share everything with everyone. In order to be able to be educated, I must think that I am doing something wrong. I am not taking anyone's property.

Prof. C. S.D. Forrester, history teacher: Concepts of copyright are well established in the U.S. Constitution. Would we open the doors of the publishing house and offer their books free for the taking? It is robbery whether done physically or digitally.

Skeptic: I think that this is only the beginning, and I think that poor Johnny is only one in a series of pseudoinnocents who are going to be stuck in the middle. With a new answer to Napster, Gnutella, people will be able to download several kinds of media files. "We've only just begun."

Note. Written by Daniel and Jennifer Williamson with assistance from the ICPS Facilitators: Sarah Feuerbacher, Kathi Hopkins, Rick Strot, Margaret Thompson, and Mary Witte

After the skit, students were divided into seven groups. Each group had a facilitator and a counselor. Our group had 14 students, 7 boys and 7 girls. Most students appeared quite enthusiastic about the conference and were eager to produce the required products, which included a banner, a skit, a PowerPoint presentation, and a pamphlet. Most of our students worked well together, with occasional disagreements and personality clashes.

Upon entering our classroom, students were assigned their first creativity challenge. They participated in a warm-up/welcome activity that involved interviewing someone they did not know and making a desk tag that reflected what they had learned from the interview. Initially, the students were fairly quiet and sedate. After the activity, which required simple data gathering and analysis of information, in addition to creativity, they were much more vocal and animated. The activity had the added benefit of identifying any artistically gifted students, which would be important to developing one of the required products. It also gave us a glimpse of some of the personalities in our classroom.

From the beginning, Ryan was extremely vocal; he spoke loudly and fre-quently. He was the first to write his answers to data-finding questions on chart paper, and he expressed strong, detailed opinions about the mess. He was technologically proficient and owned and operated the MP3 player discussed in the mess. Amanda, who was very artistic, continued to work on her desk tag design throughout subsequent activities until she had finished. She was shading a giraffe skin pattern all over the paper. Jennifer, who initially sat next to Ryan, appeared rather shy and quietly observed all that was going on from her desk. Kandy was very enthusiastic and quickly volunteered to read aloud statements students had written on the chart paper. She had a deep, loud voice and liked to express her ideas. Chel, who had participated in the conference before, had an aggressive personality. She was direct when expressing her ideas or questions and quickly confronted those she questioned or with whom she disagreed. However, at the same time she valued consensus. This was demonstrated as she helped to create one of the group banners. She was hesitant to add anything to the banner upon which she felt the group had not agreed. While this was not our entire group, the descriptions should provide a sense of some of the personalities and potential group dynamics.

The facilitator introduced the theme, the generalizations, and a written version of the mess. Students were then asked how they wanted to proceed, giving them choice and ownership in the activities. They decided to read the mess silently and then debate its significance. To give structure to the debate and the information that flowed from it, students were asked to follow a problem-solving process designed to help them understand the mess, determine the facts, identify the problem, and create solutions. The process followed Isaksen and Treffinger's (1985) model:

1. mess finding (skit);
2. data finding (who, what, where, when, why, and how);
3. problem finding (we + verb + object, so then);
4. idea finding (unique ideas);
5. solution finding (criteria); and
6. acceptance finding (using the solution).

To address the data finding step of the process, students were asked to write answers to a series of questions on chart paper that had been posted on walls around the room. They quickly read the mess and eagerly wrote their responses. They seemed to enjoy the physical movement as they worked. The questions to which they responded are listed below:

- Who is involved?
- What problems exist?
- Where does it exist?
- When did it become a problem?
- Why is it a problem?
- How does my perspective of the problem influence my behavior?

After listening to answers written in response to our questions on the chart paper, students engaged in a heated debate about downloading music from the Internet. They strongly felt that current copyright law was "dumb" and that

music companies shouldn't come after everyone. Most believed that the practice of using equipment like MP3 players to obtain music was not or should not be illegal.

Next, students were given some independent study and in-depth learning opportunities, as suggested by Kaplan (1979). They were told they would be required to attend an "expert" session to obtain more information to add to the data-finding phase of the problem-solving process. They were briefed about the purpose of each session and what they might learn. Students chose the sessions they were to attend. Before our group broke up to become experts, they discussed the types of questions they wanted answered in each session. Some of the questions included: What jurisdiction does the U.S. have on Internet sites outside of its borders? Who started Napster? Is anything but a copyright being violated when individuals download music from the Internet? What is the function of the banner and what materials may we use to make it? What specific things must the brochure contain?

Upon returning, students orally presented all of the new information they had obtained. They expressed many strong opinions about the law, and they collectively felt that, if the law was not appropriate, correct, or did not make sense, it did not need to be obeyed. Our classroom debate next turned to the problem-finding phase. Given all they had learned and discussed so far, students were asked to identify the main problem(s) on a sticky note and attach it to a piece of chart paper. Some of their responses included:

- Is it ethical to download music and should it be ethical?
- The moral decay of today's society leads to the justification of stealing music.
- Government failed to prevent the downloading of music.

- People downloading music instead of buying it hurts the economy.
- You can't stop the passage of information, which the music has become when it is put on the Internet.
- Only one of thousands is being punished for a crime. You should not randomly select who to punish, but go after the most abusive offender.
- People think they have the right to download and listen, so later they don't buy junk.

The students were now prepared for some problem-solving challenges and would spend the rest of the weekend attempting to solve a real-world problem that had significance in their lives. These challenges would require higher level thinking skills, including analysis, synthesis, and evaluation. After a group discussion of each of the problems listed, they were compared and contrasted and then placed into four groupings: (a) public, (b) economic, (c) stopping the information flow, and (d) ethics. Next, students made a case for supporting one of the groupings and condensing the related ideas in the grouping into a problem statement. Our group chose the ethics grouping, which contained these three related ideas: (a) greed, (b) the exploitation of art, and (c) the lapse of ethical values/morals.

The first problem statement created by our group was: In what way might we strengthen our ethical values so art is not exploited through downloading? Upon reflection and discussion, our students thought that strengthening ethical values was too broad a problem to tackle. The second problem statement was the one chosen: In what way might we make the music industry more user-friendly so that artists' works aren't exploited? This problem statement was completed at the end of a very long day.

The next day, students arrived bright and early and were assigned a new cre-

ativity challenge: the creation of our team name. Our team name was supposed to be an acronym that was related to our problem and possible solutions. Students brainstormed and created B.E.A.R.S. (Basically Everyone Accepting Ripped Songs).

Students were then directed to create solutions to the problem that had been identified the day before. They were given the following guidelines: (a) solutions must relate back to the problem; (b) solutions must be something that can actually be accomplished; and (c) solutions should be flexible, original, and elaborated. As before, students were asked to create individually a solution on a sticky note and attach it to chart paper. Some of our solutions included:

- Make the music industry more user-friendly by allowing customers to pick and choose without buying the whole CD.
- There should be a way to order songs directly from the stores.
- Make a CD downloading system customized and personalized.
- Create a downloading system where you pay by the song and artists get some of the money.

The solution agreed upon by the group was: B.E.A.R.S. desires to create a downloading system where the buyer pays a fee per song or a monthly usage fee out of which a percentage will be paid to record companies and/or artists with copyright ownership.

Finally, with the problem and solution agreed upon, students were free to complete the day by choosing a creativity challenge: creating a banner, skit, PowerPoint presentation, or pamphlet reflecting the problem statement and solution. Each of the classroom groups was given the same materials to create these products (the rubric used for each of these products is included at the end of the article). The challenge was how to create the most unique or interesting

Research and Interdisciplinary Understanding

- *Most important problem identified*: The solution of this problem would have a great impact on the fuzzy situation.
- *Greatest evidence of research support*: The products demonstrate that the team used existing research on the subject under study.
- *Greatest understanding of issues in topic area*: The products demonstrate that the team used existing research and identified the major issues in the field.
- *Best interdisciplinary perspective of issues*: The products integrate several different disciplinary perspectives—social, psychological, environmental, technological, economic, historical, political, governmental, ethical, legal, or religious.

Presentation of Product

- *Best teamwork in developing presentation*: All of the team members are used in the presentation. Each team member has an opportunity to show his or her individual strengths or talents.
- *Most original presentation of the solution*: The solution shows unusual insight with reference to the fuzzy situation and is rare among the solutions presented.
- *Best methods of communicating solution to audience*: The team considers the audience by communicating its ideas clearly and in understandable language.
- *Most appropriate to the audience*: The team considers the audience in the sophistication of the ideas presented and the professional use of language.
- *Best dramatic presentation*: The presentation clearly discusses the specific, underlying problem selected and why it is significant and the specific solution or solutions that the group devised. The problem and the solu-

tion are well articulated and explained by the group and are easily understood by the audience.

- *Best brochure*: The brochure clearly discusses the specific, underlying problem selected and why it is significant and the specific solution or solutions the group devised. The brochure is appropriate for the intended audience and is neat, organized, correctly written, and easy to read. It is attractively "packaged" in a way that will capture the reader's attention and is written in an informative, engaging, and convincing manner.
- *Best banner*: The banner dramatically communicates to a large audience the key aspect of the problem or solution using effective symbols and other clear visual imagery. Design elements such as color, line, shape, and lettering effectively capture the viewers' attention, and the form enhances the message. The banner demonstrates creative use of materials. It is appropriate for the target audience.
- *Best PowerPoint*: The PowerPoint clearly enhances the dramatic presentation by graphically or visually supporting and communicating the significance of the specific underlying problem selected as well as the specific solution or solutions which the group devised. Design elements such as color, line, shape, and lettering do not distract from the message. It is appropriate for the target audience.

Future Use and Benefits

- *Most ethical and beneficial to all future users*: The team considers the productive, positive, growth-producing potential of the solutions opposed to its destructive, negative potential.
- *Most feasible solution to implement in the future*: The team considers the ease with which the solution could be implemented. For example, how much money, technology, training, and personnel would be required?

Figure 2
Definitions of Terms on Scoring Sheet

Note. Written by ICPS facilitators: Tracy Weinberg, Mary Witte, Jan Ward, Peggy Leeman, B.K. Dean, and Susan Johnsen.

products with the same materials given to everyone else (the pamphlet designed by our group is also included at the end of the article). Our group created two banners. One read: B.E.A.R.S. Against Illegal Burning. The second was a delightful illustration of a Smokey the Bear-type figure putting out a fire with a bucket of water. His belt buckle said "Anti-Music Burning." The play featured two silly fishermen talking about a lawsuit in the local courtroom and what may happen to a local boy. Then, the rest of our group participated in an abbreviated mock trial on stage.

Each of the seven groups presented their four required products to the entire group of conference attendees as the final activity of the day. These products represented a synthesis of all the infor-

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mation that had been learned and analyzed over a 2-day period. The products represented our group solution that was interdisciplinary and required multiple media. Awards were given to those groups who created the best banner, pamphlet, skit, or PowerPoint presentation, which were evaluated using the rubrics in Figure 2.

While the focus of the conference was to create solutions to the problem of Internet piracy, it is interesting that many students seemed to feel that the most important things they learned contributed to their affective development. In response to the student evaluation question "What was the most important thing you learned?," the most frequent response was the value of teamwork or working as part of a group. If the success of the conference can be measured in terms of student participation and satis-

faction, this conference was a success. Approximately half of the more than 100 attendees had participated before, an indication that they were happy with past experiences. In addition, with regard to evaluation requests for improvement suggestions, the most frequent response was that the conference should remain the same.

In conclusion, for the teacher of gifted children, whether in a traditional classroom setting or pull-out program, the conference offers actual training and practice in implementing an interdisciplinary curriculum using the creative problem solving process. Other obvious benefits include a weekend of interaction with other teachers of the gifted and gifted students from across the state. For the gifted student, the conference provides an excellent opportunity for social interaction, as well as academic challenges. GCT

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