



Reflections of TIME

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!!!☺Congratulations to all graduating seniors☺!!!

Mathematical

Misrepresentation in Media

By: Quratul Ain (Annie)

In this age of technology, there is a growing need for mathematics scholars, teachers, and students. Unfortunately, there is a lack of math majors across the country. Why is this happening? The most influential technology in the lives of many students is television. Television affects students on a daily basis. Students apply what they see on TV to their lives without being aware of it. As mathematics educators we should ask, "How is mathematics being presented on television?"

One of the most popular cartoons that young students like is "Spongebob Square Pants." The name of the show misrepresents the definition of a square. When students listen to the name and look at the cartoon they might think, "Oh, that's what a square looks like!", but the shape of Spongebob's pants is rectangular. As youngsters, their early education is important to create a foundation for more advanced concepts. However, if the foundation is not stable in a subject area, then students may become discouraged about the subject. In this case, the young students will learn that a square looks like a rectangle, but on the contrary, a square contains properties of a rectangle but not all rectangles can be considered squares.

Most teenagers love to watch movies. The blockbuster movie, "A Beautiful Mind," is well known in mathematical society. A lot of teachers asked their students to go and see this movie since it was related to math. If we look at the publicity shoots of this movie, there is a picture of Russell Crowe and an equation stating $0 < \pi < 1$. This is another misrepresentation of math!

There are many other movies that misrepresent mathematics. For example, in the classic movie "The Wizard of Oz", when the scarecrow gets a brain, he tries to recite the formula for the Pythagorean theorem but he makes a mistake: "The sum of the square roots of any two sides of an isosceles triangle is equal to the square root of the remaining side." The correct version of the Pythagorean theorem is, "The sum of the squares of the legs of a right triangle is equal to the square of the hypotenuse." In the movie, "Never been Kissed," one scene has a sign that says $\pi = 3.15$. π is actually only approximately equal to 3.14. It is very unfortunate that one of the most influential media portrays mathematics incorrectly.

What can we do about this? There are programs like "Cyberchase," broadcast on PBS that are very

educational for young students and even teenagers. Also, in the Star Trek television series and movies there are many valid examples of mathematics. Mathematics is all over the media. It is our responsibility to make our students aware of the beautiful mathematics that surrounds us. It will open our minds to mathematical possibilities and give us a deeper appreciation for mathematics.

Voice From the Field

By: Rocío Saborido

"So how has your first year been, rookie?" This was the question that I was asked one morning in the copy room from a weary veteran. It was such a pleasure to be able to look him straight in the eye and say, "Great!" with utmost satisfaction. Being a teacher is a remarkable blessing.



I was very fortunate to be employed by Oceanside High School just over a year ago, when I had only begun student teaching. It was a great privilege to have undergone such a thorough and meticulous education in the TIME 2000 program. I often find that many college graduates feel they are not really prepared to begin any type of job, but you, future TIME 2000 graduates, will be excellent at what you do.

The first year, anyone will tell you, is very trying. When I have asked "Courtney" to please stop talking and pay attention about 10 times in one forty minute period, or when "Michael" just won't give up being the class clown, all while I'm trying to teach them how to solve algebraic fractions, I really feel like pulling my hair out (or theirs). But there is no feeling like hearing "Jamie" say, "Ms. Saborido, can I request you for next year? You're my favorite teacher." Or having "Chris" finally come in for extra help and actually understand probability. That just makes me want to work ten times as hard and puts a smile on my face for the rest of the week.

My favorite teaching tool is definitely the computer. I absolutely love using Geometer's Sketchpad, TI-Interactive!, and of course, PowerPoint, to create lessons. I had been a very visual learner in high school, but did not have the benefit of technologies other than the graphing calculator. My students now see problems come to life with motion, sounds, and movies. They learn mathematics for life, and I can show them exactly how math is everywhere just by the click of a mouse. In fact, I become so excited about teaching these lessons, that my excitement is often transmitted to my students! It's amazing to see their eyes light up when they are able to understand a difficult problem, and when they are able to see how it applies to their lives. I recently used a map of Oceanside to

teach coordinate geometry. I copied the map into a GSP document, and put a grid over it. They loved looking for the coordinates of their street. Don't underestimate the power of motivation!

I love the fact that I am still at Queens College, getting my Masters degree in Mathematics Education, and I still feel very much a part of the TIME 2000 program. Presenting at the NCTM conference this past April with my former peers and dear friends, in front of 200 seasoned professionals, was a phenomenal experience (especially as a first year teacher!) I often look to the TIME 2000 webpage for inspiration, just to remind myself of all that I learned, and to keep my beliefs strong. My advice to future teachers is to remain positive and help students grow to love mathematics through your own enthusiasm!

Fermat's Last Theorem

By: David Chow

About 350 years ago, a French mathematician named Pierre de Fermat proposed a simple looking theorem in the margin of Diophantus's *Arithmetica*, a Greek text on number theory, but left the world for many years puzzled because he decided not to provide a proof. Under the problem, he wrote, "I have a truly marvelous demonstration of this proposition which this margin is too narrow to contain." Unfortunately, Fermat died before ever providing the proof of the theorem. As a result, this infamous theorem is known as Fermat's Last Theorem.

The theorem states that the equation $x^n + y^n = z^n$, where n is an integer greater than 2, has no integer solutions for x , y and z . It is known that there are infinitely many integer solutions that satisfy the equation $x^2 + y^2 = z^2$. The next question would be, "Are there also integer solutions that satisfy the equation for all powers of n ?"



Many great mathematicians tried to prove that Fermat's Last Theorem was correct. The case where $n = 3$ was proven by Euler in 1770, but his proof was incomplete. The case where $n = 4$ is elementary and was done by Fermat himself. The case where $n = 5$ was proven both by Dirichlet, who had just turned 20, and by Legendre who was over age 70. However, no formal proof was provided by any of these mathematicians.

Until 1993, Dr. Andrew Wiles, a 40 year-old English mathematician from Princeton University, had stirred up a great amount of excitement by announcing in a lecture at Cambridge

University that he had proved Fermat's Last Theorem. Although the mathematical community did not accept his first draft of the proof, they accepted the revised version of Wiles' proof in September of 1994.

According to Andrew Wiles, "I don't believe Fermat had a proof. I think he fooled himself into thinking he had a proof. But what has made this problem special for amateurs is that there's a tiny possibility that there does exist an elegant 17th-century proof."

Top Ten Things to Remember in Your Job Search

By: Sylvia Liu

TIME 2000 students attended LIMAÇON, a professional conference for mathematics teachers, at SUNY, Old Westbury, on March 12, 2004. TIME 2000 was the largest undergraduate group in attendance. After the keynote address by NCTM President, Johnny Lott, the participants attended three sessions. Of the three sessions I attended, I found the "Top Ten Things to Remember in Your Job Search" the most important and useful. All of us will eventually be looking for a job and I know that many students are dreading the résumé and interview. Richard A. Kollar, from SCOPE, suggested the top ten things to remember in your job search. Whether you're a freshman or a senior, it's time to be prepared!

10. Prepare yourself. Know who you are. Questions to keep asking yourself include: What do I know best? Where have I been? How have I prepared? Make sure you know the dates and the grade levels that were involved.

9. Be prepared on paper - otherwise known as your résumé. Make sure that it is no longer than 2 pages. Start with the most current experience and work backwards. Include your GPA (if you think it will help), your student teaching experience, other related experiences, special skills, and references. The best people to refer to are cooperating teachers and administrators from your student teaching experience. You should have between 3-6 references. If you want to include parents of the students that you have tutored, just choose one. You can bring your portfolio but do NOT take it out unless asked. If you have an updated resume, call the secretary and fax it in. Make sure that your résumé focuses on education. Also, be sure to spell check and proofread.

8. Prepare yourself. Use a mirror. Think about how you are dressed, how well you speak. Use a tape recorder or a camera to help you. Make sure you are saying exactly what you mean to say. Practice what you think will be asked. They will be looking for people who have a passion for working with children and an ability to communicate with them. When you speak, listen to how many times you say: "uh"; "basically", "ok", "you know?" Cut those out of your sentences. Use eye contact to show a sign of confidence

7. Prepare yourself in your content area. You might have to do a writing sample.

There may be a demonstration process where you are given a topic to teach a class. You will usually (but not always) have at least a week to prepare. Make sure to be creative and effective.

6. Prepare yourself. Know the district that you are hoping to teach in. You can find information on the internet or talk to the parents and students of those who are within the district. Research the district's report cards or math results. You have to prove that you are interested and prepared.

5. Prepare your outfit. You need to demonstrate that you are a strong role model. You must be perceived as a professional. Check the details. Make sure your buttons are buttoned correctly and your fly is zipped, etc. Women - Pantsuits or skirts. Men - Suit with tie.

4. Remember the goal. No matter what, smile. Know that it is worth every bit of anguish. Think of your future students.

3. Improve your posture. Take your coat off and relax. Follow the directions. Be attentive. Are your hands on or off the table? Are you shaking your leg?

2. Be a good listener. If you have a question about the question you've been asked, ask them to repeat it. Keep your eye on the interviewers' faces. Make them feel as if they're part of the answer. Don't jump into a hard question. Let the person finish their question and think for a moment to enhance your answer. If you don't know the answer, a good response is, "I'm not familiar with that topic. It would be something I will research." Maintain composure. Remember that when you're a teacher, you must be able to handle situations.

Last but not least,

1. Be yourself and smile. Have a sense of humor. Show off your warmth and passion.

Reflections of TIME Presents: Dr. Eddy

By: Venessa Singhroy

The most recent addition to the TIME 2000 staff is Dr. Jennifer Eddy. Her extensive experience, academic training and personality blend together to form a distinct style of teaching that is offered to those TIME 2000 students currently taking Multicultural Education in a Pluralistic Society (SEYS 340). The course itself is unique because it is focused on language, literacy and multiple approaches to learning as they relate to math instruction.



Dr. Eddy is particularly attentive to highlighting this aspect of the course because her prior experiences as a student who had mathematical apprehensions has made her empathetic to those students who experience similar difficulties. She describes an initial aversion to mathematics engendered by instructors using a regimented approach to teaching during her grammar school years. "That kind of stress can make someone feel so bad, that they even do poorly on subjects they like! I didn't want that to happen to anybody, so I use approaches that help all kinds of learners...give them freedom to make

mistakes and let them know that it's ok and part of the process," says Dr. Eddy. It was not until her graduate studies at the University of South Florida and Columbia Teachers College, after certain theoretical courses required an in depth analysis of the structures of language using sophisticated mathematics, that she began to feel comfortable in mathematics and realized an adeptness in it that she had thought she lacked.

As a result, Dr. Eddy emphasizes the importance of offering multiple learning approaches to students. According to her, we should, "Look at our approach to content, how we like to organize information; some people like a linear format while others tolerate ambiguity better. I look at it as we have different ways of organizing thoughts and we should not be closed off if [students] think there is one way to learn it." After providing students with various approaches, she stresses that it is then their responsibility to select the approach that best facilitates their learning.

To convey these concepts, Dr. Eddy integrates her personal interests as well as her training into her lessons. For example, her knowledge of psycholinguistics and second language acquisition coupled with her affinity for the Spanish language provide her with invaluable insight about the dynamics involved in teaching to a culturally variegated group. In her opinion, "If a teacher has experience in learning another language [he/she] has a better perspective on meaning and thought... [and] can add to repertoire." Other interests include a love of theatre that began as a child when her mother, a director and choreographer of her own musical theater company, introduced her to different types of music and encouraged her participation. Dr. Eddy says of her style of instruction, "there is an aspect of performance there," as she lists musicals that are among her personal favorites, including 'Singing in the Rain', 'West Side Story' and all productions by Rogers and Hammerstein.

Dr. Eddy expresses having found her niche here at Queens College and enjoys the courses that she teaches. Speaking of TIME 2000 students in particular she says, "What is fascinating, working with all of you, there is a knowledge of what you are doing in [your] questions and lesson plans. It must be the hallmark of the program that there is the reflection."

TIME 2000 Grads Speak at NCTM

On Thursday, 22 April 2004, four TIME 2000 graduates, John Chae, Eric Glatz, Rocío Saborido, and Irina Zavurov, were on the program for the 82nd Annual Meeting of the National Council of Teachers of Mathematics in Philadelphia, Pennsylvania. The title of their session was "Creating PowerPoint Lessons that Engage Secondary Mathematics Students." Visit the TIME 2000 website, www.qc.edu/time2000, to view and download the entire presentation.