



Math: Math and Justice

What if teaching percentages were about people's lives?

Mike's class wondered why jars of coffee and piles of coffee beans were needed in a math lesson. Mike explained that they were going to do "coffee math" and learn about percentages and the Miza Castro family from Guatemala.

"I wanted my class to do their math based on real situations, and to cut down on the tendency to reduce people to statistics. By making it more personal, I hoped to engage the students and let them see how relevant math is, and how math skills can be used to understand important issues of justice and fairness.

"I gave the students some data about non-fair trade coffee; then I adapted the story of Felipe Miza Castro and his family from a fair trade website (http://www.fairtrade.org.uk/producers/coffee/felipe_miza_castro.aspx). We used various items to visually represent the different amounts received by various people involved in the process of coffee production (<http://www.newint.org/easier-english/Foodhunger/Coffee/unfair.html>). We drew on a paper coffee cup what the various percentages would be in terms of money if a cup of coffee cost \$2.

(The site <http://www.pbs.org/frontlineworld/stories/guatemala.mexico/images/coffee.swf> allows students to allocate amounts but the teachers needs to do a brief summary of the text). We turned these amounts into percentages.

"We then looked at the difference fair trade made to the family's life, and talked about how our choices could affect their life. I changed my teaching style, consciously using names more frequently, to reinforce the personal emphasis."

What's going on here?

Mike **saw** his math lesson in a new way; he saw it as a time to explore values, particularly justice, and to make math personal and relevant. People are never just numbers.

Mike **engaged** students in exploring math in a more personal context, and to adopt an outward-looking focus on the wider world. He also encouraged them towards empathy and moral engagement.

He **reshaped his practice** by using objects to raise interest, choosing his examples carefully, and focusing on his use of language (consciously using names).

How do I do this myself?

- Elementary example
- Secondary example

What does this have to do with faith, hope, and love?

Sometimes learning can feel disconnected from people; handling data and manipulating figures can seem a world away from what is really important. Ultimately, **faith** is not just an abstract set of beliefs, but a relationship with God: we are to **love** God and love our neighbor. The Bible stresses the connections between people, their responsibility to each other, and the need to pursue justice in a frequently unjust world. What we do in one part of the world affects other people far away. Christian love means we can never talk about people in terms of just numbers. That does not mean we can never work with numbers on their own; it just means that we may need reminders that in some cases the numbers can represent people and require us to think about care and justice.

What difference does it make?

Mike's way of teaching reminds the students that numbers can be about people and their lives, and can also raise questions about fairness and our responsibility to others. It also helps to reduce the separation of learning and life.

Where could we go from here?

It sometimes helps to give timely reminders in other aspects of math that people and their lives cannot be reduced to numbers and treated accordingly. That does not mean that all math has to become personal; it is a case of making some lessons personal as a reminder. Graphs, charts, and percentages are obvious candidates, but geometry also impacts people's lives. Lines on paper can represent where some people have to live, and can represent fair or unfair boundaries.

Digging deeper

Math is not value free, an area of life where Christian values do not apply: there is no such thing as neutral ground. All life is God's, and Christian values affect everything. Mike chose to explore justice. In the Bible, God calls people to follow "justice and only justice" (Deuteronomy 16:20). In her song (Luke 1:51-52), Mary reflects on a God of justice who humbles the proud and lifts the poor. Jesus welcomed the marginalized and mixed with the poor, the rejected, people labeled sinners by others (Matthew 9:10-12). God's justice shows itself in acting on behalf of the powerless (Psalm 72, 7, 12), often represented as the orphan, the widow, and the stranger—those with no one to defend them and who are often treated unfairly. God expects his people to be just, making justice and righting wrongs their aim (Isaiah 1:13-17).

Charity is no substitute for justice withheld. St. Augustine

In the moral sphere, every act of justice or charity involves putting ourselves in the other person's place and thus transcending our own competitive particularity. C. S. Lewis

Faith is not an abstract set of beliefs that are practiced by individuals on their own; it is a relationship practiced in community, and that community is worldwide. The Christian community spreads across time and space, so that there is a connection with people from around the world, and also with the past and the future. The Apostles' Creed talks of the "communion of saints" (communion here means fellowship).

Knowledge and knowing in the Bible are not just about information, facts, and figures; one of the words for knowledge used in the Bible covers personal experience and the closest of relationships.



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