



Math: Community and Math

What if math created a community in which all could achieve?

Jared worked hard to create a collaborative culture in his math units. He wanted to create a “math community” where the progress of the whole class mattered.

“I wanted the students to support each other in an appropriate way while still stretching the high-achieving students and giving them all the chance to work together. The climate could be summed up this way:

- It’s OK to make mistakes
- Students’ viewpoints are valued
- High expectations of every student, including courteous behavior (which I try to model)
- Creating opportunities for all to achieve
- Acceptance of personal, anecdotal contributions to lessons drawing on students’ experiences
- Balancing excellence and attaining high grades while being true to other values like ‘caring for my neighbor’
- Care and support for all students according to need

“I changed the layout of the room, with the more-able students often sitting alongside the less-able students when appropriate for the lesson. Those who completed their work early were allowed to look around and move to work with those who needed help in a peer-mentoring manner. I explained to the students why I was doing this—what kind of community climate I wanted us to build, one where we try to help others learn. On the other hand, I wanted to avoid having the high achievers become my teaching assistants. I wanted the help to flow in two ways, which is why anecdotal contributions were important; a range of students can contribute in that regard. This way of working is still

new for me; I need to work harder at assessing how groups work together, not just looking at how individuals achieve when they work together.”

What’s going on here?

Jared **saw** his math lesson as an opportunity to create a supportive math community.

He **engaged** students in moving their interaction with each other’s work from competition to collaboration, and in reflecting on why the changes were being made.

Jared **reshaped his practice** by changing the rules for class interaction and the layout of the room in order to affect the ethos. He was on his way to developing new evaluation strategies that matched his classroom ethos.

How do I do this myself?

- Elementary example
- Secondary example

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

“**Love** your neighbor as yourself” was demonstrated within the group, through encouraging the students to serve their neighbors. Appropriate recognition was still given to God-given abilities and gifts, but caring for students who learn less quickly was made part of the expectation. Students were encouraged to seek the good of others. Love was expressed as thanks and praise was given, acknowledging the contributions of each class member.

What difference does it make?

Collaboration in this way challenges a mind-set of individualism and autonomy. Common math classroom models can perpetuate individualism, competition, and a lack of awareness of others in the group. The result was that the more-able students continued to attain high grades in math, while the less-able students achieved more than previously. The attainment of the whole group was improved through a community emphasis, and the class atmosphere was changed.

Where could we go from here?

Jared could further build a sense of community in his math lessons with math news that is appropriate, introducing big questions relating to math (e.g., <http://www.calvin.edu/kuyers/math/index.html>) and math fun (<http://www.counton.org/thesum>) so that students don't just work together but discuss news items, have fun, and discuss issues of faith and values as they arise. The school can also extend this practice into other subject areas. Sometimes concerns are raised about the progress of able students if they are helping others, but explaining to others often helps clarify a student's thinking, and able students can still be given work at their own level.

Digging deeper

Modern economies tend to stress the individual and be based on competitive models. Although this has brought a certain type of freedom and economic progress, it can lead to a lack of connection with others and a lack of progress in the more communal aspects of living. This lack of connection can make it difficult to make choices with others in mind. The Bible stresses the connection between people.

We have all known the long loneliness and we have learned that the only solution is love and that love comes with community. Dorothy Day

There is a sense of mutual responsibility that is taken for granted in the Bible. When Cain asked, "Am I my brother's keeper?" he already knew the answer was yes. The Apostle Paul compares the church to a body where the parts are dependent on each other (1 Corinthians 12:12, 1 Corinthians 12:27) and where people bear one another's burdens and share their highs and lows (Galatians 6:2; Romans 12:15). This creates a strong

element of belonging both to God and each other. The community is to be careful to look after its weaker members ([1 Corinthians 12:21-23](#)).

Christianity is not a religion of lone rangers; faith grows and is practiced in community. Christian fellowship is an expression of the underlying community between Christians. Christ is the head of the community, and all are dependent on him. ([1 Corinthians 12:22](#); [Ephesians 1:22](#)). The Holy Spirit binds the Christian community together ([Ephesians 4:3](#)).



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