

RESTORING RELATIONSHIPS IN MATHEMATICS

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After two of the most challenging years in recent history, students need connection more than ever. All classes must find ways in which we can attend to students' socio-emotional needs while engaging them in learning content. As educators, we can help students build better relationships with others, understand the content, and begin the healing process from an ever-changing world that continues to greatly affect all our lives. "Rehumanizing Mathematics," a movement spearheaded by Rochelle Gutiérrez, has asked math educators to rethink every part of our system to ascertain that we are "1) acknowledging some of the dehumanizing experiences in mathematics for students and teachers and 2) how students could be provided with windows and mirrors onto the world and ways of relating to each other with dignity" (Gutiérrez, *Abstract* 2015). Continuing this push, the newly adopted Wisconsin Standards of Mathematics, with equity at its core, asks teachers to make math collaborative, to bring in students' strengths and experiences to the classroom, and to provide responsive environments. Through Restorative Practices and especially Restorative Circles, teachers can use a time-tested structure to engage all students in conversations to increase math discourse and beliefs and attitudes.

What are Restorative Practices and Restorative Circles?

Restorative Practices, as defined by the International Institute of Restorative Practices, "[are] an emerging social science that studies how to strengthen relationships between individuals as well as social connections within communities" (*Home - IIRP graduate school*). In math, the present relationships—student to teacher, student to student, student to math,

teacher to class and even teacher to math—can benefit from this attention and progression. An educator can begin by identifying the current state of these relationships and whether there is a need to restore any harm done, maintaining the current state, or growth. An important perspective in Restorative Practices, and a good practice for education, is to make sure all the work is done *with* the students, rather than *to* or *for* the students, as seen in figure 1. In a math classroom, examples include high-demand tasks using Peg Smith’s Five Practices, Dan Meyer’s Three Acts, surveys, and Restorative Math Circles as a way to make sure students are part of the decision-making process.

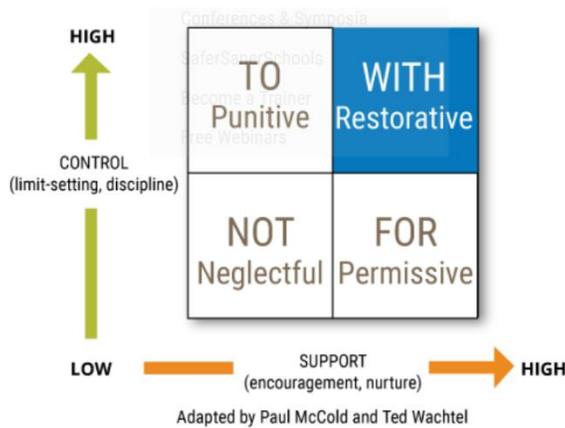


Figure 1.

There are informal and formal structures present in Restorative Practices as seen in figure 2 (Costello, B., Wachtel, J., & Wachtel, T. 2010). Affective statements, a place to start Restorative Practices, are expressions of personal feelings which can emphasize boundaries, provide feedback, and build empathy.

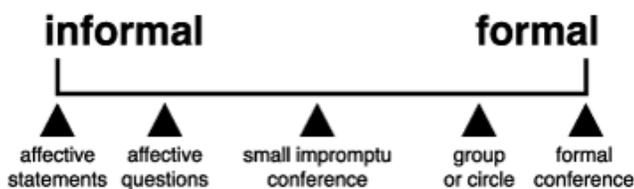


Figure 2.

Teachers can model this for students using an “I” statement with a feeling and an explanation. This practice humanizes the teacher and strengthens relationships with the students. Affective questions benefit the responder and receiver with the accountability placed on the respondee and are used as part of the more formal structures: impromptu conferences and circles. Some math classroom examples of these question types include the following:

- What can we do as a community for you to feel more comfortable in this environment?
- How are you feeling about (latest math concept) on a scale of 1-low to 5-high?
- What can I do to support you in math?

The affective questions in a small impromptu conference are used to quickly restore any harm done to or between a few people. A teacher could use the list of questions below to rightfully place the blame on the challenging behavior (not the person), restore the harm done, and move forward. If a more formal structure is needed, a formal conference or harm circle could instead be used.

- What happened?
- What were you thinking of at the time?
- What have you thought about since?
- Who has been affected by what you have done?
- In what ways have you been affected?
- What do you think you need to do to make things right? (White, 2012)

Circles, also listed on figure 2, have a structure based in Aboriginal communities and are used to conduct a discussion toward a purpose. The physical structure has participants sitting in a circle around a centerpiece with a talking piece also present to help facilitate the conversation and provide equity. Any Restorative Circles, including Restorative Math Circles, include a purpose, an opening to start the circle, a question related to checking in on the current state of

each participant, a community-building question, and a closing. Although these components should be present for a circle to be Restorative, there is flexibility for the circle leader to add other components or questions to reach the purpose of the circle. Throughout the circle, the circle leader will ask questions in a progressive way to get participants to present, addressing and taking actions against issues.

Why Restorative Math Circles for me?

When I learned about Restorative Practices and Restorative Circles, I was drawn in because I saw Restorative Practices as a strong connection to the student-centered approach I wanted for my class, and I saw Restorative Circles as a link to the people in the circles and the math content discussed. I knew I needed to try something different if I wanted different results and bring in more contributors to the math conversations. It also felt like a natural next step to what I had tried in the past.

With previous exposure to Socratic seminar, a content discussion taking place in a circular sitting arrangement, I enjoyed how natural a conversation felt in a circle where everyone could see the speaker. When trying the Socratic seminars in my class, using math-related questions only, I found the circle sitting arrangement alone did not influence the math discourse more than the regular classroom setting. It was just a discussion and did not engage students like I was hoping. Separate from Socratic seminars, I also attempted to engage more students by incorporating community building activities. I would try the activities periodically and often separate from the content. Without a continuous effort, I did not feel like it influenced the community as much as it could. Thinking it may be the relationship the students had to math, I also used Jo Boaler's YouCubed [Week of Inspirational Math](#). The material was

great to try to change attitudes and beliefs but again, without a cohesive approach, it was added only sometimes after the first week and then fell off completely. Without a strong structure and progression, I did not maintain it like I would have liked.

Finding Restorative Practices provided a strong foundation to the vision for my math classroom and any concept I added. Restorative Circles were flexible enough to include content becoming Restorative Math Circles, and through these I had a way to actively change beliefs and attitudes toward math and increase community, trust, and math discourse.

How to Implement Restorative Math Circles in the Classroom

Many math educators using a student-centered approach of “with” their students are already using Restorative Practices. To develop the community while also bringing in math content, educators can use Restorative Math Circles. Figure 3 below depicts the physical setting to consider when adding Restorative Math Circles to a practice. By adding the key elements noted in figure 3 below to a Socratic seminar or a question-based discussion, a circle can be Restorative and can also be used to facilitate math content discourse.

- Seating — During the circle process, a circle seating arrangement with minimal barriers is ideal but not necessary. The circle structure is flexible and beneficial with desks if needed. A quick standing circle is also beneficial depending on the purpose of the circle. During online instruction, a circle on the screen with names placed around also works well.
- Circle Agreements — At the start of introducing restorative circles and restorative math circles to a community, the circle leader—the teacher to start the practice— can introduce a set of already developed agreements and ask if the circle participants need something added or if they accept them, which can be done by a thumbs up signal. A list of suggested circle agreements are:
 - Speak With Respect
 - Listen With Respect
 - Assume Good Intentions
 - Confidentially

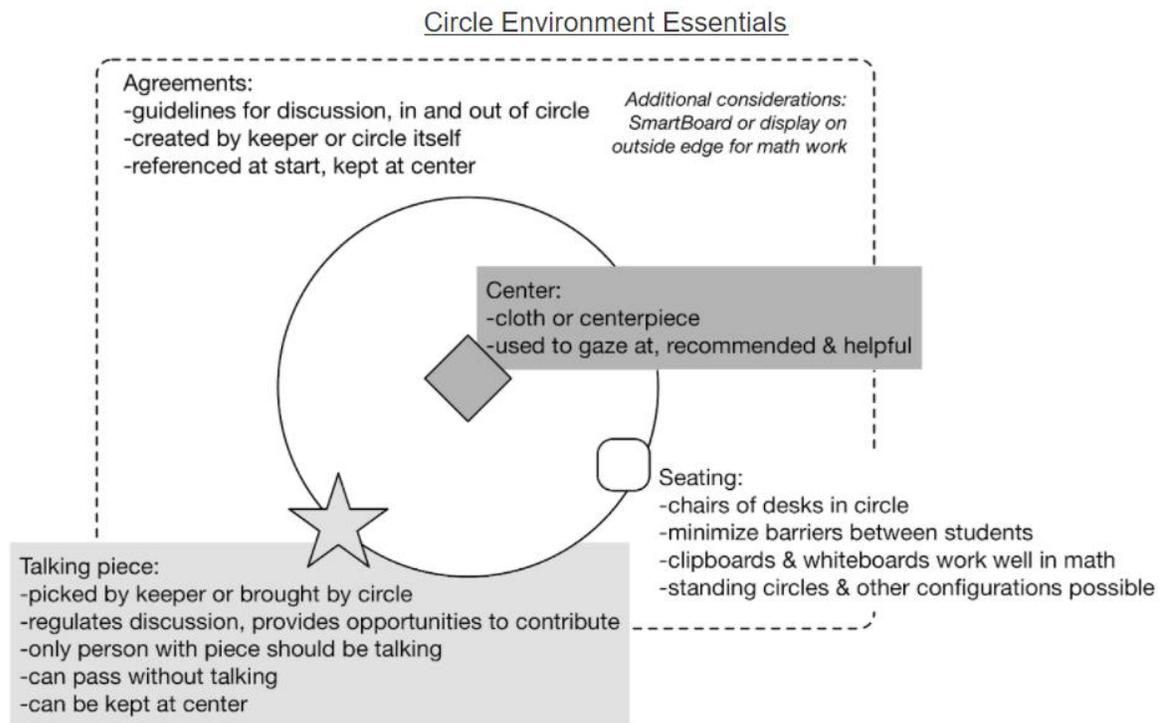


Figure 3.

- **Talking Piece** — This is placed at the center of the circle to start the circle. One to a few intentional pieces that can handle the wear of being held are ideal pieces, and could have a relationship to the circle leader, the circle participants, or nature. This serves as the indicator of who is supposed to be talking at any given time. The circle leader may choose to start the round of a question to show an example of what is expected or may ask a participant to start. The first participant chooses the direction after that, giving each participant a chance to speak on the given question. If needed, a talking piece may go around a few times for the same question if participants need to add to their answer to the question. After the question has gone around the desired number of times, it is placed back in the center of the circle. This process repeats for each question unless the circle leader/teacher chooses to suspend the talking piece for a question and do a popcorn style response. For each circle, it is desired that the talking piece be used for at least one question (to create equity and inclusion of all participants) but can then be suspended as needed depending on the desired purpose of the question or due to time restrictions.
- **Centerpiece** — Like the talking piece(s), this is placed in the center of the circle at the start of the circle and has meaning to the circle leader/teacher, the circle participants/class, or nature. It is meant to be a ritual part of a circle and also offer a focus to gaze at for the participants.

- Math Content Additions — If using a Restorative Math Circle (discussed in next section), additional items may be used to facilitate the math discussion. If participants/students would be writing and are sitting in chairs, they may use clipboards. If a question needs a visual or center place for work to be done, a large whiteboard or smartboard can be added to the circle, forming a horseshoe-like shape. As mentioned previously in the seating arrangement section, Restorative Circles are flexible to meet the needs of the discussion.

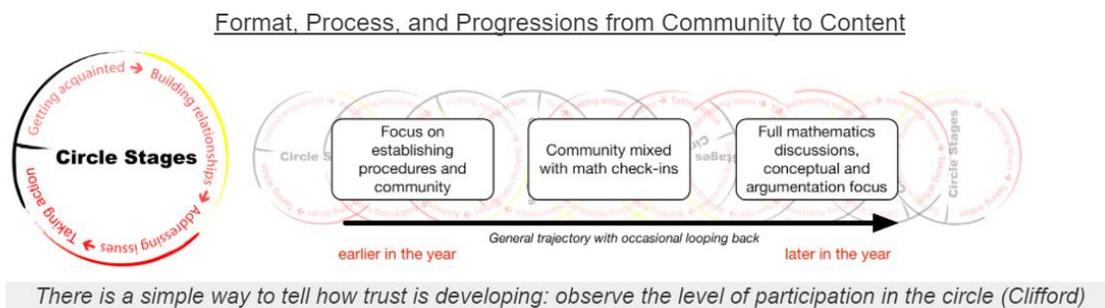


Figure 4.

Figure 4 lists the Circle Stages or goals for each of the questions in each circle to attain — the caveat to this being the community needing to be ready or building toward this. The circle stages also serve as a benchmark for a circle leader or teacher to gauge the stage of their class or community. If a community is at the Getting Acquainted stage, this will be part of the purpose, and the circle leader will work at the stage and stop or attempt part of the next stage (if the community is ready) and stop. If a community is at the Building Relationships stage, they will again go through the Getting Acquainted stage by using a check in, something present at every circle and discussed in the circle template in the next section. This process continues until the circle leader feels the community can work through all Circle Stages.

The right section of figure 4 is related to the ideas above and can serve as a guide for the progression of the Circle Stages related to math content. The farthest right part of figure 4 illustrates what should be the first focus: establishing procedures while in the Getting

Acquainted and Building Relationships stages. The middle part of figure 4 illustrates a suggestion for the teacher to work on, leading to an Addressing Issues circle stage. This can be done by having the circle template set up to go through the first two stages with appropriately selected questions (discussed in next section) and then completing a check-in on how the circle participants feel related to the current math topic. As this process goes well, the circle leader could, once the Restorative Math Circle has had questions related to the first two stages, reach Addressing Issues/Taking Action by having students discuss a “Which One Doesn’t Belong” type of question or by using a circle to launch or debrief a high-demand task. A circle could be done where students work through all Circle Stages by doing a few problems related to the current math topic together while in the circle (which might be done with the talking piece suspended). Restorative Circles could also be a great tool when setting up or debriefing a social justice lesson. *High School Mathematics Lessons to Explore, Understand, and Respond to Social Injustice* by Berry et. al. has a list of Debriefing Questions at the start of each lesson and Taking Action Questions at the end of each question which could be made into a Restorative Circle just by the physical structural elements mentioned earlier and adding an opening, a purpose, a check-in question, and a closing (discussed in next section).

Restorative Circle or Restorative Math Circle Template

- * is used to mark a required part of any Restorative Circle and should be present
 - ***Purpose:** Early in the circle process, the purpose might be building procedures and community. Later, it might focus more on mathematics. Add check-ins on math content as the level of trust increases, for longer durations and with a progression of more procedural to more conceptual. Math Practice 1 and 3 as good goals for the circle process. Purpose of the circle is explicitly considered at each stage of a circle.

- ***Opening:** Circle agreements reviewed, purpose of circle given, and circle opened. Possible openings: quotes, things to consider during circle, mantra.
- ***Scaled check-in on current state (Getting Acquainted):** (day, week, semester, etc.) Using a 1-5 scale, assess (and reset if necessary) the community and build trust as community members to get to know each other better. Encourage comments on why that number, with a reasonable limitation to length (e.g., one sentence, one word).
- **Community building question(s) (Building Community):** A strong community building question has the potential to increase the trust level in the community without placing community members at an unnecessary place of vulnerability, including the circle keeper. Different questions may be sensitive for different communities.
- **Bridging to Math check-in/Self Scoring (Addressing Issues):** Using a 1-5 scale, have students self-assess their current state with respect to mathematics.
- **Content (Taking Action):** Mathematics work includes board work (placing whiteboard or projector at the edge of the circle), discussion of problems, engaging in a cognitively demanding task, examining student work, launching a lesson
- **Check-out:** Use a scale or a response-limiting method (one sentence, one word) to reflect on the content of the circle.
- ***Closing:** Marks the end of the circle process. Examples: passing a high five or “I appreciate you” around, quote, reflection on purpose of circle, story link-up (one student starts a story, other students link up to continue and then finish story)

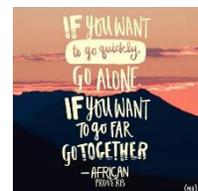
Example of a First Circle

Purpose: Build Community

Opening: If you want to go quickly go alone, If you want to go far go together - African Proverb

Check-in: 1-5 How is your day going? Why?

Community building questions: What is your favorite subject in school?



Affective question to Address an Issue: How have you felt about math in the past?

Affective question to Take Action: What do you need present in this class to be successful?

Closing: Pass around a smile or pass around “I appreciate you”

Conclusion

With many reasons present to not return to “normal” after these challenging years, I ask you to look into a “window” and think about “Rehumanizing Mathematics”. What students are we not reaching and why is it? What does looking into a “mirror” on this tell us? With data to support, about two thirds of my students say that Restorative Math Circles helped in a math classroom. Comments included: safe, comfortable, ready to learn, hear what other people think, help understand, and give everyone a chance to communicate. With about two thirds of a class saying that circles help in their math classroom, I do not think circles are necessary for every student, but I can be an important tool in every math classroom. The shift to opening the window for Restorative Practices and Math Content Circles can be small steps by including some of the techniques mentioned above and always working “with” students. Circles are versatile to meet the needs of teachers and students with the opportunity to improve math attitudes and beliefs while increasing math discourse.

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