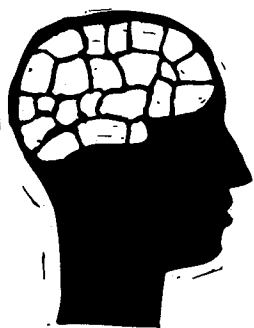


Reasoning, Resilience, & Responsibility

Jeanine C. Cogan
Rena F. Subotnik



***In what ways can this model be used
to empower teachers and students in
positive ways?***

The Other 3Rs (Reasoning, Resilience, and Responsibility) training allowed me to push my students more in my day-to-day teaching. I noticed I was becoming more resilient as an educator.

Other 3Rs 3rd Grade Teacher

Educators today want to enhance academic achievement without sacrificing other important values and skills. Every teacher knows that no matter how intelligent or academically accomplished a student is, he needs social and emotional skills to succeed optimally in school and in life. A child who earns stellar grades but cannot collaborate with peers may struggle in reaching her goals.

Background on Other 3Rs Project

The Other 3Rs Project (www.apa.org/ed/cpse/threershome.html) began with an investigation into the most important psychological components of academic success (Cogan, Sternberg, & Subotnik, 2006). The research pointed to reasoning, resilience, and responsibility. The objective of the project was to integrate these components into a useful problem solving model that could, with practice and guidance, be applied both inside and outside the classroom.

Reasoning incorporates critical thinking or good intellectual functioning and is one of the strongest predictors of academic success and resilience. Expression of developed skill in reasoning is embodied in logical and thoughtful approaches to problem solving. When students learn to solve problems successfully they experience positive outcomes including increased academic achievement (Sternberg, 1999).

Resilience is important for both success in life and student learning and is reflected in an individual's ability to approach stumbling blocks as challenges to overcome, rather than obstacles that hinder progress. To be resilient is to keep going, persevere, and even capitalize on setbacks. Although some factors that support development of resilience, such as a positive family environment, are beyond a teacher's reach, resilience is a teachable skill (Benard, 1995).

Responsibility is also associated with improved student outcomes (Eccles, 2006; Zimmerman, 2006). When individuals are responsible, they are accountable for the consequences of their actions and inactions, ideally seeking outcomes that reflect the common good (Sternberg, 1999).

Since reasoning, resilience, and responsibility are each related to student success, we designed the Other 3Rs Project to incorporate strategies for teaching the three in unison. Skills of **reasoning** offer students a toolbox of strategies to solve problems. **Resilience** helps students focus on overcoming learning obstacles rather than feeling despair over failure. Skills of **responsibility** help them take charge of their achievement through effort and self-regulation.

Assumptions and Definitions

Three fundamental assumptions are central to the Other 3Rs Project.

1. Reasoning, resilience, and responsibility can be learned.
2. Once learned and internalized, reasoning, resilience, and responsibility lead to improved problem solving skills in academic

Jeanine C. Cogan is Assistant Director of the Other 3Rs Project at the Center for Psychology in Schools and Education at the American Psychological Association.

Rena F. Subotnik is Director of the Center for Gifted Education Policy at the American Psychological Association

Reasoning continued

and social domains.

3. The Other 3Rs derive their greatest power when they interact in the course of problem solving.

To help students better understand the meaning of the terms, we present them in the following ways:

Reasoning

What strategies would help me solve this problem?

Resilience

Challenges are normal. We all have them.

What can I learn from this stumbling block or set back?

How can I approach this challenge in a different way?

Responsibility

It's up to me to create the results I want.

How I act matters.

I will listen and care about what you have to say.

I care about what is good for all of us, not just for me.

I will help if you want or need it.

I'm glad I can ask you for help.

Testing the Other 3Rs Project in a Real School Setting

The goal of the Other 3Rs Project was to investigate whether promoting the interaction of reasoning, resilience, and responsibility in the form of a problem solving model would have a positive impact on both teachers and students. In 2003, the American Psychological Association (APA) was funded to design and pilot a professional development intervention that integrated reasoning, resilience, and responsibility into a standards-based 3rd grade public elementary school curriculum.

In order to have the most impact in terms of time and money, we focused on activities with teachers rather than on direct services to students. We designed two sets of monthly five-session professional development experiences for teachers. The first set of sessions was based on the Other 3Rs Project, and the second set, a comparison group, focused on memory skills. The mnemonics training was a rigorous and well researched instructional program developed at Yale University and was selected because it had been shown to be effective in increasing achievement of students at various grade levels.

Session 1 was an overview and introduction to the concepts and problem solving model. In sessions 2 through 5 teachers practiced applying the Other 3Rs Problem Solving Model to the curriculum within two subject/interpersonal areas each session, as follows:

- | | | |
|-------------|-------------|----------------|
| • Session 2 | Mathematics | Reading |
| • Session 3 | Mathematics | Interpersonal |
| • Session 4 | Mathematics | Science |
| • Session 5 | Mathematics | Social Studies |

Each session included the same components: 1) review and discussion, 2) introduction of new material, 3) hands on practice, 4) brainstorming applications to the existing curriculum.

The Other 3Rs professional development materials offered sample lessons that infused reasoning, resilience, and responsibility into existing curriculum standards. The centerpiece of this training was a new problem solving model that encouraged students to reason well, be resilient in the face of challenges, and take responsibility for their learning (See Figure 1.). Although there are many available problem solving models, they are missing explicit references to resilience and responsibility that students must access, in order to persist with problem solving until a solution is found.

Collaborative Design

Too often professional development for teachers is designed and implemented from the top down rather than collaboratively. In order for us to generate an optimal professional development program, we invited many players to the table including

- Researchers on reasoning, resilience, and responsibility—to provide scientific evidence for the project goals
- Professional development experts—to design a thoughtful set of sessions for participating teachers
- Curriculum developers from the school district—to create model lessons that employ district curriculum standards
- Teacher trainers—to facilitate the professional development sessions
- Program implementation experts—to help us find an ideal number of schools to represent the district
- Design and evaluation consultants—to assess the quality of the products and services we provide and the effectiveness of the intervention
- Elementary school teachers and principals—to advise us on how to negotiate the ins and outs of the district including permissions, etc.

Individuals from the Montgomery County Public Schools (MCPS) in Maryland, where the project was conducted, played a key role in every step of the process from designing the curriculum, to teaching it, to successfully implementing the project.

The Other 3Rs Project was tested in 17 MCPS elementary schools. Forty-three 3rd grade teachers from the 17 schools, balanced by school characteristics, were randomly assigned to receive either the Other 3Rs intervention or the comparison that focused on mnemonics. The average years of experience for participating teachers was 9.6 years.

Project Outcomes for Teachers

In comparison to teachers in the mnemonic sessions, teachers attending the Other 3Rs sessions perceived greater self-efficacy in their ability to influence children's learning, even in the context of

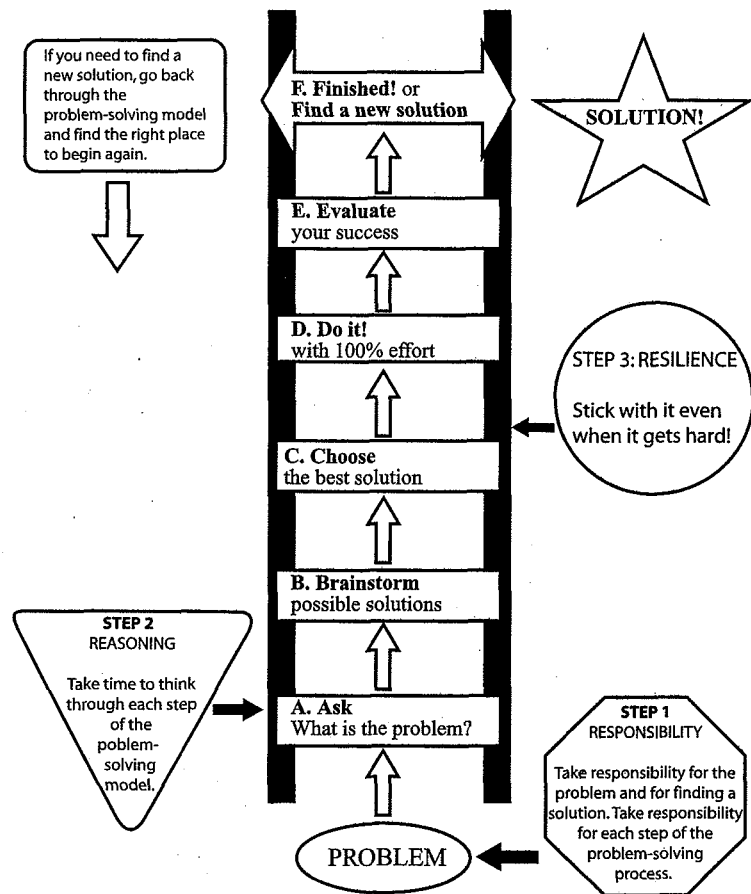


Figure 1. The Other 3Rs Problem Solving Model

decreasing student achievement and increasing student anxiety about testing. They also expressed greater confidence in their ability to help children use reasoning skills to solve problems, to become more resilient learners, and to be more socially responsible. Teachers in the Other 3Rs training held significantly stronger beliefs that resilience can be taught than teachers in the comparison group.

In addition to gathering survey data, we conducted focus groups with the teachers after the training sessions were completed. The following are some sample open-ended responses that elaborate on the main findings:

1. Teachers attending the Other 3Rs sessions perceived greater self-efficacy in their ability to influence children's learning than teachers in the comparison group, particularly in empowering students to take charge of their own learning.

I use the 3Rs Model to help empower the kids to become independent learners and problem solvers and to encourage them to be accountable and responsible for their own learning—to take owner-

ship. If there is a behavior or management issue I refer to the Other 3Rs Problem Solving Model to discuss how we can solve this.

2. Teachers attending the Other 3Rs sessions expressed greater confidence in their ability to help children use reasoning skills to solve problems, to become more resilient learners, and to be more socially responsible.

After the training, students do not give up as easily as they used to. It (the Other 3Rs Model) has also helped me as the educator to pinpoint specific vocabulary and slogans to push my children to become more independent learners. Students are more likely to read a question twice to reason through a problem without immediately raising their hands for my assistance.

3. Teachers attending the Other 3Rs sessions demonstrated a stronger belief that resilience can be taught.

I had a student who was really struggling with an assignment so he put his head down and gave up. I brought him to the Other 3Rs bulletin board we made as a class and showed him what he had put up about resilience. He then smiled and set a goal of

what he wanted to complete.

Additional lessons emerged from the focus groups with teachers attending the Other 3Rs sessions:

1. The sessions provided teachers with a way to "teach" behavior skills.

I enjoyed being able to 'teach' behavior skills. I like to have the common vocabulary to communicate expectations and give feedback to my students. It is easy now to say, 'Don't give up; be resilient' and not have to explain what that means. Or I might say, 'Are you being a responsible 3rd grader?' if I want the student to change a particular behavior. It aids self reflection of the learner.

2. The Other 3Rs had a positive impact on classroom climate.

The Other 3Rs allowed/encouraged a platform where the students were made aware of personal and social behaviors that positively and negatively affected the culture of the class. They were offered a language to communicate about skills essential to the success of the individual as well as the whole. The problem solving process will carry them across curriculum and real life. Hearing my kids say, 'Come on, you can do it!' or 'Resilience leads to success!' is rewarding. My students have developed a wonderful sense of being a '3rd grade family.' It's hard to say what is truly behind the camaraderie, but I feel the 3Rs definitely helped. The impact in my classroom is more clearly seen in social responsibility—students started looking out for each other.

3. Some students were using the Other 3Rs Problem Solving Model not only in their learning but in their interactions with each other.

Three girls who have been unable to get along all year have finally become friends. They used the Other 3Rs Model to work out their differences and are working towards a continued friendship.

Clearly, the Other 3Rs Project had a positive impact on participating teachers by way of their increased ability to influence students' learning. When teachers feel efficacious they spend more time on their instruction, display persistence in the face of failure, and tend to be more committed to their profession (Coladarci, 1992). It is not surprising that teacher self-efficacy is also associated with student achievement and motivation.

Implications for Talent Development

Participating teachers in the Other 3Rs Project commented that the model was as useful for high achieving students as it was for on-grade level and low achieving students. As one teacher summarized, "Some of these kids have one way of trying to solve a problem, such as math, and they have a hard time conceiving of other approaches." This teacher found it helpful for high achieving students to brainstorm a list of strategies for solving a problem, as it "opened their eyes to more possibilities."

Although many gifted students are outstanding

achievers in school, we cannot claim that they are better prepared than their classmates to deal with unexpected obstacles or social dilemmas. The discrepancy between academic and social/emotional coping abilities is especially obvious during transitions between stages of school and when gifted students are brought together for special services. When challenge increases, students may lean on their previously effortless recall or reasoning strategies. When these reliable resources fail, or the source of the problem is less predictable, new strategies and persistence are needed.

Athletes and musicians are assisted in their development with psychological strength building (Subotnik & Jarvin, 2005). Our academically able students need similar support. According to Gagne (2005) and Tannenbaum (1986), the development of giftedness involves a concerted effort on the part of the talented individual, interacting with supportive adults and peers, to enjoy his strengths in creative and productive ways. The Other 3Rs is a mechanism for teaching problem solving that can resonate for all children. Perhaps, in a more targeted way, the Other 3Rs can help gifted children become, like their teachers, more self-efficacious. ♦

References

- Benard, B. (1995). *Fostering Resilience in Children*. Urbana, IL: ERIC Clearinghouse on Elementary and Early Childhood Education.
- Cogan, J.C., Sternberg, R.J., & Subotnik, R.F. (2006). Integrating the Other 3 Rs into the School Curriculum. In R.J. Sternberg & R.F. Subotnik (Eds.). *Optimizing Student Success with Other Three Rs* (pp. 227-240). Greenwich, CT: Information Age.
- Coladarci, T. (1992). Teachers' Sense of Efficacy and Commitment to Teaching. *Journal of Experimental Education*, 60, 323-337.
- Eccles, J.S. (2006). A Motivational Perspective on School Achievement. In R.J. Sternberg & R.F. Subotnik (Eds.). *Optimizing Student Success with the Other 3 Rs* (pp. 119-226). Greenwich, CT: Information Age.
- Gagne, F. (2005). From Gifts to Talents. In R.J. Sternberg & J.E. Davidson (Eds.). *Conceptions of Giftedness* (pp. 98-119). New York: Cambridge University Press.
- Sternberg, R.J. (1999). Theory of Successful Intelligence. *Review of General Psychology*, 3(4), 292-316.
- Subotnik, R.F. & Jarvin, L. (2005). Beyond Expertise. In R.J. Sternberg & J.E. Davidson (Eds.). *Conceptions of Giftedness* (pp. 343-357). New York: Cambridge University Press.
- Tannenbaum, A.J. (1986). Giftedness: A Psychosocial Approach. In R.J. Sternberg & J.E. Davidson (Eds.). *Conceptions of Giftedness* (pp. 21-52). New York: Cambridge University Press.
- Zimmerman, B.J. (2006). Enhancing Students' Academic Responsibility and Achievement. In R.J. Sternberg & R.F. Subotnik (Eds.). *Optimizing Student Success with Other Three Rs* (pp. 179-198). Greenwich, CT: Information Age.