Learning, Sense of Self, and Yoga in a High-Poverty Urban Elementary School

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Abstract
This paper builds on three premises: that one’s sense of self has a profound effect on success in school and life; that sense of self can be “unpacked” to determine the components of self critical to school and life success, and that sense of self is changeable, malleable, and thus, largely learned. This paper explores the possibility of using an intervention, in this case a school-wide yoga program, to help urban children growing up in poverty learn to see themselves as able to accomplish difficult tasks, as able to belong in and contribute to a learning community, and as able to engage in and focus on relevant activities. The data indicate that yoga intervention positively affects the children’s sense of self by providing instruction and safe opportunities to develop a sense of accomplishment by meeting challenges through perseverance, to develop a sense of belonging by behaving peacefully as members of a learning community, and to develop a sense of engagement by focusing intently during demanding activities. The study found that, with classroom teachers practicing yoga with their children, lessons learned during yoga carried over into academic classrooms and beyond. The paper is based on observations and interviews conducted over a two-year period in a second-, third-, and fourth-grade classroom before, during, and after participation in weekly yoga instruction.
**Introduction**

This paper is built on three premises. The first is that one’s sense of self has a profound effect on success in school and life. The second is that sense of self can be “unpacked” to determine the components of self critical to school and life success. The third is that sense of self is largely learned; it is changeable and malleable. Children develop a sense of self primarily through social interactions and exploration of their physical environment. Most children successfully learn culturally appropriate skills, knowledge, and dispositions, and in doing so, they see themselves as functioning members of their culture. This learning occurs smoothly when it is accomplished in naturally occurring social and cultural contexts such as the home, community, and neighborhood. In these contexts, most children do not display learning disabilities; they do not withdraw and refuse to learn; they do not drop out (Spindler and Spindler 2000b; McDermott 1989). Introduce formal schools, and the situation changes; many children see themselves, and are seen by adults, as unwilling or unable to learn. It is clear that the act of going to school affects children’s sense of self, but it is important to understand which components of self are critical to success in school.

This paper describes how one simple intervention—a school-wide yoga program—provides a kind of learning that helps children see themselves as capable of learning. Through participation in weekly yoga classes, an entire population of high-poverty, urban elementary-school children had the opportunity to learn to see themselves as capable of persevering through difficult physical activity; as contributing members of a peaceful, nonviolent community, and as being able to focus and find relevance in important work. According to teachers and children, they were able to carry these lessons into the academic classroom and beyond. The yoga program affected their sense of self by teaching them tools and strategies to make both academic and non-academic learning more successful.

The data are analyzed through a framework that identifies three critical components of one’s sense of self: sense of accomplishment, sense of belonging, and sense of engagement. The knowledge, skills, and attitudes associated with these components of self are learned through social interaction and explicit instruction in multiple contexts, school being one of the most critical contexts for children’s learning. This framework and its relationship to learning are described in more detail below.
Conceptual Framework

Sense of Self and Success in School and Life

Schools and classrooms serve as a critical context in which children develop their sense of self. In schools and classrooms children learn how to see themselves outside of the comfort of family and other caretakers. They refine their sense of self through explicit teaching and through social interactions with adults and peers. Children take very different lessons from their school and classroom experiences. Some children derive positive lessons from the classroom; they learn to see themselves as able to accomplish difficult tasks, as important, contributing members of the school and classroom community, and as capable of being engaged in challenging and relevant classroom activities. Other children are less fortunate; they learn to see themselves as incapable of doing the work of school, as unwelcome or worthless outsiders to the community, and as being unable to focus on and engage in schoolwork. Students derive lessons about themselves from assessments of their academic and social performance and from interactions with teachers and peers (Ladson-Billings and Tate 1995; Mehan 1980; Schaffer and Skinner 2009).

Children quickly learn to read the subtle and not-so-subtle messages sent by teachers and peers and use these lessons to shape their beliefs about potential success. Considerable research over many decades points to patterns in which poor, minority, and disabled students receive messages that they cannot learn (Erickson and Mohatt 1982; Fine 1991; Heath 2012; McDermott 1974; Ogbu 1978; Spindler and Spindler 2000a; Suarez-Orozco 1987), while more privileged, white, achievement-oriented children can learn. As George and Louise Spindler concluded in their classic story of Roger Harker, a California fifth-grade teacher, teachers often unconsciously send messages to students that those who most resemble themselves are more worthy. They wrote that Roger “was informing Anglo middle-class children that they were capable, had bright futures, were socially acceptable, and were worth a lot of trouble. He was also informing lower-class and non-Anglo children that they were less capable, less socially acceptable, less worth the trouble” (2000a: 205).
Key Components of Sense of Self

Research indicates that successful children learn three important lessons in school that become cornerstones of their sense of self: I am capable of accomplishing goals through hard work; I belong and contribute to the classroom community; and I am capable of enjoying and engaging in the process of learning (Finnan 2009; 2013). These three characteristics serve as the key components of the conceptual framework guiding this study; a sense of self encompasses one’s sense of accomplishment, sense of belonging, and sense of engagement.

A sense of accomplishment describes our confidence in our ability to do what is culturally required and valued. It is at its most intense when we succeed at something we find challenging. This usually involves persisting at tasks that we were not sure we could successfully master. A sense of accomplishment requires “instrumental competence,” the cultural understanding of how to perform the activities that are tied to acquisition of possessions, recognition, power, status, or satisfaction (Spindler and Spindler 1989). In other words, we accomplish something relevant in our culture. The task must also be deemed “challenging” within the social and cultural context; this requires self-awareness of strengths and limitations. A sense of accomplishment also requires confidence, what Alfred Bandura describes as self-efficacy, the belief in one’s capacity to accomplish tasks (1977). We experience a sense of accomplishment most intensely when successful completion of a task confirms our competence and builds confidence that had previously been tentative.

A sense of belonging, another critical dimension of self, describes our confidence in ourselves within social situations and in our ability to make and contribute to relationships with others. In Maslow’s (1943) “hierarchy of needs,” belonging is next in importance after physiological and safety needs. It is connected to place and to one’s comfort in and acceptance within a place (Erickson and Mohatt 1982). It encompasses feelings of inclusion and exclusion or “us v. them” (Warriner 2007) and requires knowledge of the power and politics that determine the cultural knowledge and behaviors needed to belong. In most United States classrooms, belonging typically calls for assimilation to middle-class, white expectations (Suarez-Orozco 1987; Hemmings 2000; Hoffmann 1998; Ladson-Billings and Tate 1995).

A sense of engagement is another key component of self that helps us believe that we can do and enjoy the things that are valued in society. While a sense of accomplishment is oriented toward an outcome, a sense of engagement is oriented toward the act of doing or learning; it is at
its highest when we lose ourselves in a task or activity. Losing oneself in an activity necessitates complete focus on that activity. A sense of engagement resembles Csikszentmihalyi’s flow (1997; 2000); we enjoy the experience of challenging ourselves. We focus less on the outcome and more on the process. We also need the “interactional competence” to be able to communicate and interpret in culturally appropriate ways to build a sense of engagement (Erickson 1997; Mehan 1980), and the activity or task must be relevant to our lives.

**Sense of Self as Learned**

If a sense of accomplishment, belonging, and engagement are learned, it is important to understand where and how this learning takes place. Considerable learning occurs in the course of everyday social interactions outside of school. It is through these interactions that we learn to see ourselves as functioning members within our communities and as culture bearers. There is no explicit curriculum to follow; the skills and knowledge are not purposefully taught, but children learn because they want to be members of the community and appropriate behaviors are rewarded when displayed. This cultural learning includes such behaviors as how to address elders, handle disputes, interact with the opposite sex, control emotions, organize time, complete chores, etc. As David Lancy and Annette Grove (2011) describe, by middle childhood children learn to have *sense* or the capacity to pay attention, follow directions, and take initiative (295). Out-of-school learning occurs through observation and collaboration in ongoing community activities (Gaskin and Paradise 2012; Lave and Wenger 1991; Rogoff 1990; 2003), through play (Bergen and Fromberg 2009; Chick 2010; Long, Volk and Gregory 2007), as a byproduct of completing increasingly demanding chores (Chick 2010; Lancy 2012), and through engagement in relevant community or out-of-school activities (Heath 2012).

When learning moves into the venue of schools and classrooms it becomes removed from everyday adult community endeavors and has the potential to lose its relevance for many children (Rogoff 2003). The explicit function of schools is to teach academic content (i.e., academic or cognitive learning) through explicit instruction in subject areas such as in language, mathematics, sciences, social studies, music, physical education, and health. It is typically developed and transmitted by adults to children and is usually graded and tested. Fredrick Erickson defines academic instruction as “instruction with aims for the content of learning that are deliberate and intentional” (1982: 149). In the United States and many other countries,
content standards define the academic learning expected of students at each grade level and standardized tests are used to assess students’ academic learning.

Considerable learning also occurs in schools without explicit teaching. Some of this learning, referred to as the “hidden curriculum” favors some children over others by projecting messages that white, middle-class children are capable of learning while minority, low-income children are not. Teachers are often unaware that they perpetuate this hidden curriculum, believing that they are fair to all students. However, low-income, minority children quickly learn that the behaviors, attitudes, and values they bring to school are not those rewarded in school (Giroux and Penna 1983; Jackson 1968; LeCompte 1978). This hidden curriculum continues to reproduce social inequalities and constrain social advancement efforts (Bowles and Gintis 1976; MacLeod 2009).

In addition, schools expect children to arrive with skills and knowledge that help them learn academic content and behave appropriately in class. This learning is described as non-academic or non-cognitive learning. This kind of learning includes academic behaviors (going to school, doing homework, organizing materials, participating, and studying), academic perseverance (grit, tenacity, delayed gratification, self-discipline, self-control), academic mindset (I belong in this academic community; my ability and competence grow with my effort; I can succeed at this, and this work has value to me), and learning strategies (study skills, metacognitive strategies, self-regulated learning, goal-setting) (Farrington et al. 2012). Academic mindsets are most closely related to sense of self in that they describe “beliefs, attitudes, or ways of perceiving oneself in relation to learning and intellectual work that supports academic performance” (p. 28). Non-academic or non-cognitive learning is very important because it continues through life and is a better predictor of job success in the United States than academic learning is (Levin 2012).

In sum, through academic and non-academic learning, explicit and implicit teaching, and in multiple contexts, we develop our sense of self. We develop a sense of accomplishment through self-awareness, self-efficacy, and persistence in pursuit of challenging and personally relevant goals. We develop our sense of belonging by learning to live harmoniously with others and by contributing to the social group. We develop our sense of engagement by learning to focus and sustain a commitment to meaningful activities. The following study examines a school-based yoga program’s influence on children’s developing sense of self. The study
analyzes the yoga curriculum for explicit connections to the framework described above (sense of accomplishment, belonging, and engagement) and presents evidence of student behavior observed in yoga classes consistent with this framework. In addition, it presents evidence from interviews and observations of carry over of yoga lessons to student behavior and attitudes in the academic classroom and beyond the classroom.

The Study

I conceived this research project in fall 2010 when I learned that an inner-city school near my university was offering 40-minute yoga classes once a week to all students, kindergarten through fifth grade. I am a regular yoga practitioner and have personally experienced the positive feeling of mastering difficult poses and the calming effect of the overall practice. I also have noticed that on several occasions during yoga practice solutions to complex problems emerged. Given my positive experience with yoga, I thought that it would be interesting to study the effects of yoga on elementary-aged students. Data collection occurred during spring semesters during the 2010-2011 and 2011-2012 academic years.

The School, Classrooms, and Yoga Program

The School

Montgomery Elementary School (Montgomery ES)\(^1\) is housed in an imposing three-story brick building near the center of a small southeastern United States city. A major thoroughfare runs next to the school, cutting off the community it serves from the more affluent downtown. The school has a population of 400 students in grades Pre-K-6; 93% of these students receive free or reduced price lunch, and 94% are African American, reflecting the neighborhood composition. Most of the students live in a public housing project walking distance from the school, and are affected by many of the stresses associated with living in public housing (e.g., high unemployment, crime, drug use, family instability). Montgomery ES has been actively seeking antidotes to the negative effects of poverty on the children, not only to improve students’ academic performance, but also to help students in all aspects of their lives; the yoga program is one such effort.

\(^1\) All names have been changed.
The Classrooms

The research was conducted both years in the same second-, third-, and fourth-grade classrooms. Class size fluctuated but never exceeded 20 students in each class. The second-grade teacher has been teaching second grade at Montgomery for several years and is actively seeking ways to improve her students’ academic skills, especially in reading and math. By district policy, she spends 90 minutes a day teaching reading/language arts, and 60 minutes teaching mathematics. She taught reading immediately after yoga class during each observation. There is no “down time” in this class, and it follows the same schedule every day except when students have their 40-minute yoga class. She actively supports the yoga program and always participates with her class.

The third-grade class is one of two Third Grade Academy classes at Montgomery. The school district established Third Grade Academy classes to serve students scoring significantly below grade-level in math and reading. The Academy classes are small; this class both years served fewer than 15 students. The Academy students attend school an extra hour each day. During the additional hour, students receive extra reading and math support using scripted intervention curriculum designed for at-risk students. Because the students are academically struggling, the teacher believes it is especially crucial for her students to develop confidence and see themselves as worthy, welcome, and valued members of the classroom. She welcomes the physical and mental stimulation of the weekly yoga practice because it provides a break from her highly focused and quick-paced academic instruction.

The fourth-grade teacher has taught fourth grade for two years, looping up with his Third Grade Academy students in 2010. His students also attend school an extra hour each day. He has a more relaxed pace in his teaching than the second- and third-grade teachers, but has successfully moved his students to grade level or above both years of this study. On the whole student behavior is not a problem, and the class follows a simple set of expectations: “If there is a problem, we look for a solution. If there is a better way, we find it. If a classmate needs help, we give it. If we need help, we ask. WORK HARD. BE NICE. MAKE NO EXCUSES.”
The Yoga Program

The yoga program began as an early childhood intervention in October 2008. Through external support and a group of volunteer yoga instructors, it expanded during the 2009-2010 school year so that all classrooms, kindergarten through fifth grade, receive at least one yoga class a week in addition to regularly scheduled physical education and recess. It is designed to involve students in a non-competitive activity that improves strength, flexibility, and balance, both physically and mentally (YogaKidz, 2012). The program also provides teachers in-class ideas for short yoga strategies or “yoga snacks.” Classroom teachers can choose to use these to smooth transitions, energize students, and focus thinking.

The 40-minute yoga classes vary by instructor and age of students, but they follow a similar structure. Students go to one of several available rooms (e.g., physical education rooms, art room, media center), remove their shoes, and walk quietly to their yoga mats. The yoga instructor has already set up mats and placed a name card in front of each mat. Usually using a chime, the instructor quiets the class. Following a brief greeting, the instructor describes the day’s theme, e.g., managing anger, relaxation, flexibility, kindness. They then begin with some stretching and breathing exercises. Once warmed up, they move through a series of standing, seated, and inversion poses that encourage flexibility, balance, and grounding. Classes end with a relaxation period in which students lie on their backs with eyes closed. The instructor typically returns to the theme to guide the relaxation and ends the relaxation period with a chime. The classroom teacher participates with the students and occasionally takes over the role of yoga instructor.

Research Questions

This study is guided by a conceptual framework portraying the sense of self as learned and malleable with three components that profoundly influence school and life success: sense of accomplishment, sense of belonging, and sense of engagement. To ascertain if learning related to these components occurs as a result of participation in yoga classes, we designed the study to address the following four research questions:

1. Are features of accomplishment, belonging, and engagement explicitly taught in yoga classes?
2. Is there evidence of students demonstrating accomplishment, belonging, and engagement during yoga class?

3. Is there evidence that learning during yoga class related to accomplishment, belonging, and engagement is carried over into the academic classrooms?

4. Is there evidence that learning during yoga class related to accomplishment, belonging, and engagement is carried over beyond the classroom?

**Method**

During the spring semester in 2011 and 2012, a team of researchers engaged in data collection and analysis. Three researchers were assigned to one of the three academic classrooms. The researchers followed a similar routine for observations over both four-month data collection periods. They arrived at the classroom approximately an hour before the assigned weekly yoga class and took notes on classroom activities and interactions. Most days the researcher entered the room, noted the time, number, and location of students, and began to script as much of the classroom discourse and activity as possible. They accompanied the teacher and students to the yoga class and alternated between taking notes and practicing yoga along with the students and teachers. They returned with the students to the classroom for additional observations following the yoga class. Each observation period lasted approximately three hours. Following the observation period the researcher typed up field notes and submitted them to the lead researcher for review and comments.

The lead researcher conducted interviews with the three classroom teachers, the yoga instructors, the principal, and several physical education coaches. Each semi-structured interview lasted approximately 40 minutes. Questions were designed to elicit opinions and observations on the effect of yoga on students’ learning, social interactions, and sense of self. We also developed a set of interview questions for students. Student interviews were conducted with the permission of the teacher when students had completed assigned work. The adult responses were audio recorded, and the student responses were recorded in writing. In addition to observations and interviews we asked students to write essays to writing prompts. During the first year, the fourth-grade teacher initiated this activity and in the second year we developed prompts related to yoga for the three classrooms.
Although all of the researchers were aware of the conceptual framework guiding this study, each researcher was encouraged to modify the framework in analyzing his or her data so that the framework could be changed or altered based on the data. The researchers reviewed their field notes, student interviews, and the teacher, principal, and yoga instructor interviews looking for patterns and outliers. This process was iterative and reflected not only the conceptual frame provided by the lead researcher but ideas emerging from the data. Each researcher wrote up his or her findings into reports presented to the teachers, principal, and yoga instructors. The lead researcher worked from these reports, the field notes, interview transcripts, student essays, and feedback from participants to analyze and present the findings below.

The data analysis followed the guidelines outlined in Miles and Huberman’s (1984) classic sourcebook on qualitative data analysis. With observation, adult and student interviews, and student written narratives to analyze, it was important to triangulate between these data sources. Data were initially coded by the three broad constructs under investigation: accomplishment, belonging, and engagement. Once this initial coding was completed, data within each domain were reviewed and further sorted. The first sort was to determine patterns emerging in the data for each construct that would define the construct in relation to this body of data. The second sort was to separate data by where it was manifested: yoga class, the classroom or school, and outside the classroom. This process allowed new understandings of the three constructs to emerge.

**Findings**

Students and the fourth-grade teacher quickly remove their shoes and find their yoga mats. The yoga instructor greets them and tells them that they are going to focus on the light within. She rings the chime and all assume Child’s Pose\(^2\). As they are in Child’s Pose she tells them to breathe in and out—to let their backs expand. She says that they should focus on breath. She mentions that in the winter, since there is less light, that it is important to find the light within. “Remember to breathe.” She moves them into their first Down Dog. She tells them to hold Down Dog and breathe in and out. “Now, step your feet between your hands, soften your knees and stretch your spine. Slowly rise. Stretch your feet; lift your toes. Breathe in and out.”

The yoga instructor begins a very fast flow, repeating a sequence of Baby Cobra, Down

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\(^2\) All names of poses are commonly used in yoga practice.
Dog, Mountain, King Cobra, Down Dog to Mountain. As students are doing the poses she stops saying the name of the pose and regulates the movement by just saying “breathe in” and “breathe out.” At the chime, all students assume Child’s Pose. The instructor says, “Slither onto your bellies so we can do Bow Pose. This is a heart opener, and it opens the light. It shouldn’t hurt so I shouldn’t hear any groans.” She has them sway side to side and listen to their heartbeats. They move into another flow involving lifting a leg to the sky and placing it between hands, then going into High Lunge and Down Dog. A heavy girl seems reluctant to do it, but as she looks around and sees all others doing it, she joins. They repeat this series several times. The flow continues.

They begin to slow down; the instructor has them do “knees to chest”; “It’s now time to find total relaxation.” Students get on their backs and extend their legs and arms, and close their eyes. “I may give you a little of my energy, so don’t be scared.” The yoga instructor circles the room and adjusts students who are squirming and wiggling. Eventually all of the students are still. She reminds them to keep eyes closed. After the chime, she asks them to sit up, and they say together, “May the peace in my thoughts, may the peace in my words, may the peace in my heart be with you.” She thanks them for practicing and asks them to thank their neighbor.

This yoga lesson describes a typical class. The lesson has a theme (light within) and a rhythm that is familiar to the students (introduction, yoga flow, relaxation). Some students participate more fully than others, but none of them disrupt the class. Most students try to complete physically challenging poses, but no one is critical of less than perfect attempts. The class, including the classroom teacher as a full participant, moves through this flow as one body.

**Explicit Teaching and Observed Behavior in Yoga Classes**

The yoga program follows a set curriculum developed by staff at Yoga Kidz that is designed to increase students’ physical, emotional, and mental fitness (Yoga Kidz 2012). Yoga Kidz maintains that their forty-minute lessons improve:

- physical fitness—flexibility, coordination, strength, and body awareness;
- emotional fitness—self-esteem, confidence, self-acceptance, stress reduction, well being, and self-control; and
- mental fitness—focus, concentration, memory, respect for others, self-expression, spatial awareness, and motor skills.
These objectives are translated into themes presented in individual lessons. The yoga lessons are typically structured around a brief introduction to the day’s theme, a series of yoga poses, and a relaxation period during which the key points of the theme are repeated. Often, yoga instructors draw connections between the theme and the students’ experience during the flow of yoga poses. Analysis of field notes from yoga lessons over the two-year research period indicates that nearly all of the third- and fourth-grade classes’ lessons (29 of 30) were explicitly guided by a theme (some of the themes built over several lessons), but themes were rarely introduced in the second-grade classes. Most of the themes connected to either a sense of accomplishment, belonging, or engagement as outlined below:

- themes related to a sense of accomplishment included the importance of self-awareness, long- and short-term goal setting, perseverance, and confidence;
- themes related to a sense of belonging included self-respect, respect for others, acceptance of self and others, finding a calm and safe inner place, creating space to avoid acting on anger, peaceful interactions, honesty, gratitude, compassion, sportsmanship, and communication; and
- themes related to a sense of engagement included focus and stability, being grounded, finding quiet for focus, connections of body to earth or body to mind, and patience.

In most cases, these themes were used at the beginning of the yoga class. Children sat cross-legged on their mats while the yoga instructor introduced the theme. The instructors varied in how they introduced the themes: one instructor used puppets to make his points; another often brought in books with stories connected to the theme, while others engaged students in a dialogue about their feelings related to the theme. The following exchange in a third-grade lesson exemplifies how a theme was presented:

**Yoga instructor**: This whole month we are talking about respect. [She has a definition written on the board]

**Student 1 reads**: Respect: accepting who you are but also accepting the way others are.

**Yoga instructor**: It’s about noticing and accepting people for who they are. Yoga is about acceptance.

**Classroom teacher**: Think about, for example, the lunch room. Sometimes I hear people say, ‘eww’ or ‘that’s gross’ about other people’s food. Being respectful means accepting
other people and what they are doing; worrying about yourself and not worrying about others.

Yoga instructor: Who does yoga and who can do yoga?

Students: Us, siblings, our teacher, people who care about their bodies, babies...

Yoga instructor: So, who can do yoga?

Students: Everyone!

Yoga instructor: Yoga accepts everyone—it is noncompetitive. What does noncompetitive mean? Think about the root—compete. What does it mean to compete? [students struggle with the meaning]

Yoga instructor: When you compete at something, you play because you want to win.

Classroom teacher: Who are you competing against in yoga?

Student 2: Yourself.

Classroom teacher: How can you compete against yourself?

Students: Remembering to breathe, staying focused, better posture, etc. (field notes 3/12/12)

Students clearly displayed behaviors during yoga instruction that reflected these themes and were consistent with the accomplishment, belonging, and engagement framework. In relation to displaying behaviors related to a positive sense of accomplishment, we observed many examples of children demonstrating perseverance. They struggled at first with poses, but they kept trying and eventually mastered them. One example is an arm-balancing pose, Crow. The third-grade teacher described how good her students felt once they could master Crow:

I know that some of them didn’t think they could do the crow pose. When they see the instructor do some of those poses, they’re like, ‘I’m not going to be able to do that’ and then when they realize they can and the more they try and the more they’re focusing on something and using their breathing, it gives them a sense of accomplishment to accomplish something that when they first looked at it, seemed impossible. It’s not just in academics, so it makes them feel proud that they can accomplish things if they try.

Children also proudly described how they mastered difficult poses. A fourth-grade boy summarized sentiments of other children about favorite poses; he said he likes to do “Crow and Down Dog because you try and try until you get it right.” Another fourth grader wrote, “We practice yoga because if we keep on practicing our yoga we will get better at it. Yoga is not
about being perfect at yoga poses; yoga means to make our blood flowing calmly.” There were certainly children who refused to try difficult poses or who gave up easily. The yoga instructors patiently worked with these children, and according to the yoga instructors, many eventually tried the difficult poses.

Many of the yoga poses encouraged students to be more self-aware, especially of their reactions to physical challenges and to their bodies. Often instructors began the classes drawing attention to breath, calling on students to be aware of how their breath moves through their bodies. They also encouraged students to be aware of their reactions to certain poses and gave them tools to work through frustration and discomfort. As one of the yoga instructors said:

*Overall the benefits of doing yoga are vast. Physically you’re working the whole body and you’re creating an awareness of your body as you’re working on it. With kids, maybe it’s a little more subtle, but starting early it gets in there somewhere, and it’s imprinted, resonates, and creeps in a little later, because in general, as a yoga practitioner, noticing the imbalances in your body, maybe my right arm is stronger than my left, or I can balance on my leg, and at the same time creating balance. I think with yoga practice the breath is really important; it really helps to ground you and center, and also, maybe to notice that you’re not grounded or not centered, so it’s really full-circle.*

As described above, many of the themes address students’ sense of belonging. This is not surprising since a hallmark of yoga instruction is finding inner peace and peace with others (Stone and Lyengar, 2009). Consequently, peace, kindness, and finding one’s “inner light” were messages conveyed in most lessons. The instructors typically began and/or ended each class with the following “peace *mudra*” ("May there be peace in my thoughts; may there be peace in my words; may there be peace in my heart"). We observed only one or two displays of anger within the yoga class over the two-year observation period. We did observe multiple acts of kindness with children offering to help classmates or the yoga instructor. As one student stated in an interview, “Yoga has made me care about others because if my classmates are in a bad mood, it makes me go over and cheer them up. Yoga just tells me to be a good person.” Another student said, “Yoga has helped me deal with difficult situations because when somebody is messing with me after yoga class, my mind is telling me to just ignore him or her. My mind doesn’t want me to make any trouble.”
Some of the lessons explicitly taught students how to calm themselves and avoid acting on anger. For example, one instructor focused his lesson on creating space so that students do not pick up on other people’s anger and do not inflict their anger on others. He drew an analogy to clearing brush around a forest fire; with space, the fire will go out. Throughout the yoga flow, he stressed how poses such as “ragdoll” (forward bend) allow space in the back and that yoga “gives you space in your mind.” Nearly every lesson we observed pointed out the importance of focusing on breath to create calm and relaxation.

Students’ sense of engagement during yoga was primarily manifested in their ability to focus and to stay connected. With very little prompting, students would find a “drishti,” or focal point, to stare at during difficult balance poses. Their ability to focus benefitted them in individual poses and in partner poses. The following excerpt from field notes with the second grade class illustrates how students used focus:

*The yoga instructor told them to pick a letter from the wall in front of them for focus [they practice in the media center and “Reading” is spelled on the wall]. She directed them to balance on one leg [the other leg held straight out in front] and lift up the opposite arm. Most students did this very well. They repeated this on the other side. After balancing on each leg they balanced on the first leg again but this time they moved their heads like a pigeon.*

*They then moved to tree pose [one foot on the opposite calf or thigh]. Once they did tree on each side, they remained in tree pose touching someone near. They kept their focus on the letter on the wall.*

Although focus and connection are important during the active segments of the yoga practice, focusing and connecting during relaxation is often difficult for elementary-age students. Many of the students resist complete relaxation on the yoga mat. Although most lie still and follow the instructor’s words to relax and look within, a few fidget, look around at classmates, and move from side to side. One of the yoga instructors shared a strategy for determining if students are engaged in the final relaxation: “Even when I’m reading the guided reading stuff at the end, I’ve tried to do ones where they’re moving, so I can tell if they’re really thinking and listening to me, so you know, ‘Squeeze your fist,’ ‘put your hand on your chest,’ and some of them I can see them doing it, and they’re listening.” On several occasions, during relaxation, complete silence was observed in the room. It takes a great deal of focus and personal
responsibility for a young child to remain still for an extended period of time. One of the physical education coaches attributed their reluctance to relax on the mat to their lives outside of school. She said that their environment does not allow them to relax; they are always on the defense. She put herself in the role of a child and said, “And you want me to close my eyes and trust that no one’s going to touch me or be on my mat?” It’s almost putting them in a state of vulnerability.”

**Carry Over of Yoga Learning in and beyond the Academic Classrooms**

Although it is useful for students to have the opportunity to build a sense of accomplishment, belonging, and engagement in yoga classes, it is more important that they carry this learning into the academic classroom and beyond. We observed in academic classrooms before and after yoga instruction for evidence of increased self-awareness and perseverance, calm and cooperative behavior, focus and connection. Since the school as a whole and the three academic classrooms in particular were very organized, productive, and inviting learning environments, it was difficult to attribute positive behavior in the academic classroom specifically to yoga instruction. However, interviews with the principal, teachers, yoga instructors, and students point to a number of examples in which lessons learned during yoga influenced behavior outside of yoga class. Some of the carry over is likely attributed to the participation of classroom teachers in the yoga class because they are able to remind students of the yoga themes and experiences. The availability of “yoga snacks,” suggested short classroom activities, also helped reinforce yoga learning or redirect student behaviors. For example, the fourth-grade teacher found that because he participated in the yoga lesson, he could often draw on the themes in his academic lessons and in helping individual students with their behavior:

> Not only is it [the theme] parallel with the content I’m teaching, but it directly pertains to a student who is having a difficult week, with whatever this theme is, whether it’s compassion, or not giving up, and I really try to have the students not make any excuses for anything. And yoga really helps with that, how it’s just you and your mat, and you have to pull yourself through, and you have all these other encouraging individuals around you that are doing it. It really just helps reinforce my message and it really helps students, who might not always agree with me, see that someone else is also saying this is important.
The third- and fourth-grade teachers both commented on how the yoga class sets a positive tone for the day or the week. During the second year of the study, the fourth-grade class had yoga and physical education on Monday mornings, and the teacher commented that the physical activity and positive message from yoga helped him and his class transition from the weekend into the week’s work. The third-grade teacher said that she was glad she had yoga in the morning and described how yoga set a good tone for the day:

*There have been some days, luckily yoga’s at 9:00, so we get to base our whole day on how we feel afterwards.*

*There have been a couple of times this year when we’ve gone and it’s kind of been crazy before we go and then the whole rest of the day is just calm. I think it’s just because we are in there focusing on it so much and you know, there’s not as much pressure as there is in here.*

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The three classroom teachers emphasized the importance of developing caring, peaceful relationships in the classroom, and they used lessons from yoga instruction to reinforce their efforts. Children were observed taking several deep breaths when they were angry and recommending that classmates take deep breaths. During the first year of the study the fourth-grade teacher explained that outside of school “our population tends to argue a lot over little things. They don’t really disagree peacefully, but that’s not really an issue with us anymore. They want everyone to be successful, and I kind of think they see that their individual success promotes group success.” During the second year of the study he extended this thought to include the importance of all students learning anger control strategies as well as having the teacher learn the same strategies alongside the students:

*My kids this year have really embraced the role of the peacekeeper, where they will remind me of some things. I get passionate about things, and they’ll tell me, they’ll check me, which is a rare thing for a child to do that to the teacher, but it’s really something that yoga teaches; I mean I’m their equal in yoga, I’m doing the exact same thing they are, and even if they can’t handle their anger appropriately, or they can’t resolve conflicts appropriately, if they can’t practice the strategies that we’ve taught, they can at least tell you what they are, so they might need a little prompting, but from there they can practice them.*
I’ve noticed that they don’t sulk as much anymore when they’re in trouble, they don’t see it as a personal thing, where [it’s] me against them, and they can really recover a lot easier.

One of yoga’s primary advantages in the classroom is focusing attention onto their work. Many students mentioned that yoga helps them focus on their work; they often use breathing strategies to calm themselves and focus. One said, “If you are about to do a test you can take deep breaths. Sometimes it helps you remember.” Another said that yoga “helps me think before I just blurt out an answer. I’ve learned to think about something first, like a question the teacher asks.” A fourth-grade girl said, “I like yoga because it helps me focus in class and on my work. When I’m in class I pay more attention to my teachers because of yoga. When we do the yoga poses my mind is more focused. I do much more better than I did before.” A third-grade girl said, “When I’m struggling, I try to remember the poses and the breathing to help me pay attention.”

Teachers and children reported that “yoga snacks” helped children regain focus and served as reminders of successes in yoga class. Teachers used “snacks” to focus children before tests, to regain children’s attention, or to provide an opportunity to move around. As the third-grade teacher explained:

I’ll have them stand in mountain pose and work on being grounded to help them stay focused and worry about themselves and I’ll let them with a partner push each other forward and backward and side-to-side and if they’re really grounded, then they’re not going to move around a lot.

We do a lot of focus poses and balance poses where they have to focus on a spot and just recently they did something in yoga where they pull out a “bow” and for a whole minute the only thing they can focus on is their thumb. So, I’ll let them do that and I’ll go around and try to distract them—just to get them to remember how hard it is to stay focused, how much it takes, so that way they can practice it more often.

We worked with the third-grade teacher to conduct a small experiment to see if “yoga snacks” improved students’ academic performance on oral language and math tests. For most of the year the teacher gave the tests without engaging in “yoga snacks” prior to the tests. For seven weeks, she did a short “yoga snack” before each test. Students’ performance on the oral language tests increased an average of 5.08 points and 4.64 points on the math test.
For many children who are easily distracted, knowing that they could focus was an important first step to being engaged in learning. For those with serious attention issues, yoga practice was usually not enough to significantly change behavior.\(^3\) We observed children who were easily distracted in the classroom and during yoga practice, and they did not seem to benefit from yoga practice. However, observations and interviews revealed that children with serious attention issues were only a small percentage of children in each classroom and teachers indicated that yoga seemed to help even these children.

Interviews and observations indicated that the yoga program contributed to creating a positive social and academic learning environment across the entire school. Yoga was one of many programs at Montgomery ES that helped students develop a positive sense of accomplishment, belonging, and engagement. For example students had the opportunity to work with community volunteers on urban gardening, creative writing, and reading tutoring. They had multiple opportunities, including yoga, to gain self-awareness. The fourth-grade teacher commented on students’ self-awareness saying:

... the self-awareness, that’s something that’s recurrent in yoga, always thinking about you and your actions and how your actions affect others around you. [the yoga instructors and the teacher] have a really powerful message of self-awareness, but also how self isn’t, you know, that self-awareness is really meaningless without the community around you.

I don’t know, I guess the kids... and we have it in the Green Heart program, and the Sidewalk Chalk, and they just have a lot of exposure to volunteers that are just really selfless, and I think that they’re starting to understand that, you don’t only improve yourself you improve your community, and everything’s interconnected, and I guess yoga’s the only time where you can sit there and think about that on your own, and we don’t sit there and do a whole lot of that in the classroom.

They also learned a shared set of behavioral expectations outlined in the Positive Behavior Intervention System (PBIS 2011) that shared with yoga a focus on the positive and a belief that many disruptive children can learn emotional control, particularly anger control. In sum, the school culture and other interventions supported and reinforced the lessons learned in yoga. The

\(^3\) Research with children identified with Attention Deficit Disorder and other disorders indicates that they benefitted from regular yoga practice (Bronsman 1982, Kalayil 1988).
principal recognized that many children had to be explicitly taught key non-academic skills. He noted the irony in our willingness to provide extra help to students struggling academically, but not to students struggling socially or emotionally; he said, “If they don’t know how to respond when they feel angry, we typically don’t teach them; we just say go home, you’re suspended for a few days because you can’t be angry here.” This is not true at Montgomery Elementary School.

Through these multiple interventions and intense focus on academics during classroom instruction, students’ performance on state tests continuously improved. Montgomery ES received a grade of B on its 2012 report card, a significant achievement for a school serving a very high-poverty population (South Carolina Department of Education 2012). Yoga’s emphasis on self-awareness and perseverance likely contributed to students’ sense of academic accomplishment and ultimately to their academic performance. However, too many factors come into play to draw any direct correlations.

Since seeing oneself as a contributing member of the community requires that students behave according to community expectations, reductions in discipline referrals, suspensions, and expulsions speak to students’ sense of belonging at school. The principal reported that discipline referrals during the 2010-2011 academic year went down 50%, and suspensions were also reduced. Yoga contributed to this through its emphasis on peaceful interactions and lessons designed to redirect anger. In addition, the yoga instructors initiated the Peace Patrol to encourage peaceful conflict resolution. Every week a child from each classroom was recognized for exhibiting positive behavior and was given a beaded bracelet designating that he or she was a member of the Peace Patrol. These children agreed to step in to ensure a peaceful environment throughout the school; they took on a leadership role in the classroom and in the school. Several children and teachers described times when Peace Patrollers stepped in and broke up fights, exhorting the combatants to “use their yoga breaths” rather than their fists.

The community in which the Montgomery students live has many characteristics, such as high unemployment, drugs and alcohol addiction, and unstable homes, that contributed to the stress and anger many students brought to school. Teachers, the principal, and yoga instructors commented on how yoga provides tools to increase self-awareness and to redirect anger. As one yoga instructor said:

*Yoga helps to slow the chain of the brush fire before it happens, hit the pause button, take their breaths and realize that there’s another voice inside them, there are other options,*
instead of just acting out—reacting out really…. Their role models [males in the community] are … it’s a lot of explosive and quick reactivity.

The housing project where most of them live is crowded; violence flares up frequently, and they learn quickly that it is important to appear tough. Yoga instructors and classroom teachers suggested that children’s increased self-awareness, self-control, and willingness to persevere in the face of challenges helped them overcome difficult home or community situations. Another yoga instructor said:

Well, you can apply [life lessons taught in yoga] directly to these poses, why we’re putting you in challenging situations and the correlation to life situations and how you respond and react to things. It gives you a very hands-on way to talk about things that could be abstract or kind of complicated; it kind of brings it down to a very concrete thing.

Children provided numerous examples of how they used breathing or did yoga poses when they were angry with adults and siblings. For example, a fourth-grade girl said, “I like yoga because it helps me at home, and my grandma tries to get my blood pressure running high. She makes me mad. It helps me because I can go in a different room and do some poses and deep breathing and then go back, and then I will say I’m sorry for whatever.”

Teachers in low socioeconomic urban schools often complain that children are easily distracted and frustrated. These teachers often overlook the demands placed on high-poverty children and the environmental challenges in their homes and communities. Two of the teachers commented on how some of the lessons from yoga carry over to the home, allowing children to find focus amid distraction. The fourth-grade teacher said:

I give my kids a lot of work, in and out of school, and it’s a pretty difficult task to do independently. A lot of them, like in math, they’re learning stuff their parents don’t know. So to hold a nine- or ten-year-old kid accountable for a massive amount of work on a daily basis is pretty powerful… These kids are accountable for themselves only, and they go home to all kinds of distractions, just for them to find space to think and do their work [voice trails off].

The third-grade teacher added that the biggest impact practicing yoga had on her children was the acceptance that they are responsible for themselves—that they must find their own focus and reason to persevere. She continued:
Just understanding that they have control over their overall wellness; that nobody else is going to take care of them except for themselves. I didn’t realize that. I always had my mom, my dad; they were always taking care of me and guiding me, and some of these kids don’t have that, so it’s more important for them to realize that.

Discussion

Montgomery ES could easily resemble the many schools serving urban, poor, minority children documented in decades of research that illustrates their deleterious effect on children’s sense of self. Designed to encourage white, middle-class, achievement-oriented behaviors and attitudes (McDermott 1974; Ogbu 1978; Spindler and Spindler 2000) or to perpetuate social inequity (Bowles and Gintus 1976; MacLeod 2009), many poor or minority students draw the lesson from school that they are incapable of accomplishing important academic tasks, that they do not belong in the school or classroom setting, and that they cannot or will not focus on activities with questionable relevance to their lives. While many scholars and advocates for the poor have become increasingly pessimistic about the likelihood that school will provide poor and minority children real opportunities to engage in important academic and non-academic learning (Heath 2012), this study indicates that there are still pockets of hope within high-poverty urban schools.

This study illustrates that behaviors and attitudes associated with key components of sense of self can be taught and learned, and that the lessons learned through non-academic interventions influence students’ behavior and attitudes in the academic classroom. Through a weekly yoga program, students at Montgomery ES were presented with themes that are similar to non-cognitive factors that have been found to improve student academic performance (Farrington et. al 2012). Themes that were especially effective addressed self-awareness, persistence, calm and peaceful interactions, ability to control anger, and focus and grounding. Students had the opportunity to work with the themes through demanding physical yoga poses in the context of a supportive, peaceful community. Unique to this intervention, the classroom teachers became a part of the community of practice (Lave and Wenger 1991) by engaging in the yoga practice with their students. Since they joined in the practice together, teachers and students could return to lessons learned in yoga and apply them to situations in the academic classroom.

This study illustrates the power of non-academic interventions within the school context. Although Montgomery ES is under intense pressure to improve student academic performance,
the school administration and faculty understood the benefit of non-academic learning to students’ sense of self and ultimately to academic performance. Many children develop a positive sense of self through activities outside of school (e.g., athletics, environmental activism, drama, community service, etc.), but students like those at Montgomery had few opportunities to participate in such out-of-school activities. In addition, in-school interventions reach a larger number of children and allow for more direct influence on the academic classroom. For this to be effective, teachers must buy into the intervention, and be willing to “get on the mat” with their children. It also requires a school culture insistent on doing everything possible to ensure that all children develop a positive sense of accomplishment, belonging, and engagement.
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The conference, organized by Kellogg Faculty Fellow and Professor of Anthropology Susan Blum, witnessed inspiring discussion and collaboration between leading scholars of education from several disciplines and nations.

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