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Running head: RECESS TEAM TRAITS THAT AFFECT RECESS QUALITY

Characteristics of the Recess Team that Mediate Recess Quality

Christina McChesney

Merrimack College

2020

MERRIMACK COLLEGE

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Abstract

This evaluation assessed the significance of recess team and Recess Coach (RC) characteristics on the quality of recess at elementary schools implementing the Playworks TeamUp program. Recess quality was measured by Great Recess Framework (GRF) data collected by Playworks staff across 18 regions. Three GRF factors: Student Behavior, Adult Engagement and Supervision; and Transitions were evaluated along with each of the individual GRF items that comprise them. Schools were characterized using Recess Team Member Surveys. Results indicate that neither recess team size nor Recess Coach's time on the recess team relative to length of employment are significant predictors of recess quality. Results indicate that select GRF factors were significantly different depending on whether the school's RC played one or more of the following roles: Administrator, P.E. teacher, or classroom teacher. Administrator RCs were associated with higher scores on Student Behavior, Transitions, and one of the GRF items comprised within the Adult Engagement and Supervision factor: Adult Behavior. P.E. teacher RCs were associated with lower scores on Student Behavior, and Transitions. Classroom teacher RCs were associated with higher scores on one of the GRF items comprised within the Transitions factor: Transition from Recess. These results suggest that administrators are a valuable resource for influencing student behaviors, improving recess transitions, and promoting adult modeling of positive culture, while classroom teachers may have valuable insight related to the transition from recess. It also suggests that Playworks staff may encounter challenges when empowering RCs, who are P.E. teachers.

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Characteristics of the Recess Team that Mediate Recess Quality

Daily scheduled time for unstructured and active play is the norm for the majority of elementary school children. However, how much time is allotted for recess and the quality of activities available to engage in at recess vary greatly from school to school. School districts consistently experience pressure to enhance students' academic performance and standardized test scores. At times this has meant that recess time has been cut in favor of increased classroom time. McMurrer (2007) reported that one out of five school districts had reduced recess in elementary schools by 50 minutes/week on average since the enactment of No Child Left Behind in 2001. However, research shows that recess time and the physical activity it promotes are associated with positive cognitive, behavioral, and social implications for students.

When recess does occur, its potential for facilitating student growth is often untapped. Through the Playworks TeamUp program, the non-profit Playworks teams up with schools to change this. Playworks provides professional development opportunities and continued consultation services to each school's recess team. Because each school has different resources available to them, this recess team and its members, are significantly different from school to school. By understanding the ways these differences can impact program implementation, Playworks can better support these schools and recess teams. The goal of this evaluation is to identify possible advantages and challenges associated with team and team member characteristics.

Literature Review

Recess is about more than addressing the physical health of students. However, such a time dedicated to physical activity has become increasingly valuable to children in America. In

the early 1970's, four percent of children age six to eleven were considered obese. By 2016, this figure had more than quadrupled at 18.4 percent (National Center for Health Statistics, 2018).

While physical activity is relevant to physical health concerns like obesity, research also suggests that it can have positive cognitive implications (Pellegrini, & Smith, 1993). Sibley and Etnier (2003) conducted a meta-analysis of studies that evaluated “the relationship between physical activity and cognition” (p. 245) in children. This meta-analysis included 44 studies for which experimental and control group averages were available to calculate true effect size (ES). They observed a positive relationship between physical activity and cognitive performance, with “the significant overall effect of 0.32” (p. 251).

The type and duration of physical activity varied from study to study. For example, a study by Brown in 1997 (as cited by Sibley, & Etnier, 2003) involved daily strength training over a six-week period, while another by Caterino and Polak in 1999 (as cited by Sibley, & Etnier, 2003) involved 15 minutes of stretching and mild aerobic exercise. Neither the type nor duration of physical activity significantly moderated the effect observed on cognition, suggesting that cognitive performance can benefit from any physical activity. The type of cognitive assessment that displayed the greatest effect size (ES) was perceptual skills with an ES of 0.49. The effects on intelligence (IQ) and academic achievement, which are often a priority for educators, were also significant with ESs of 0.34 and 0.30 respectively (p. 253).

Recess, as well as periods of Physical Education, provide students with valuable opportunities for physical activity during the school day. A meta-analysis of sedentarism in US schools found that students are sedentary, expending less than or equal to 1.5 metabolic equivalents (METs) of energy for an average of 63.1 percent of the school day (Egan, Webster, Beets, Weaver, Russ, Michael, Nesbitt, & Orendorff, 2019). Students spent 44.7 percent of

recess sedentary. However, not all recesses promote physical activity equally well. For example, Lassiter and Campbell (2019) evaluated the impact of a school-wide walking program and found that during implementation of the program, the average number of students who spent 75 percent or more of recess engaged in sedentary activities was significantly lower than it had been prior to implementation.

Egan et al. (2019) found that students spent an even lower percent of time sedentary in physical education (38 percent) than they did in recess. However, increased physical activity is only one of the ways that recess can benefit students and classrooms. Research suggests an association between breaks from academic work such as recess and positive classroom behavior outcomes (Trambley, 2017; Jarrett, Maxwell, Dickerson, Hoge, Davies, & Yetley, 1998; Barros, Silver, & Stein, 2009). Furthermore, some argue that the socialization that happens within the relatively unstructured time of recess is essential to children's social skill development (Jarrett, 2002; Ramstetter, Murray, & Garner, 2010; Pellegrini & Smith, 1993).

Novelty Theory of Recess

Many educators and parents prescribe to “the idea that children may need or benefit from periodic changes from sedentary class work” (Pellegrini, & Smith, 1993, p. 56). It could be argued that all people, though possibly particularly children benefit from periodic breaks. This concept is supported by novelty theory and Beryne's (1966) work on “exploratory behavior” (p. 25) in higher order animals. Those who prescribe to the novelty theory of recess argue that because recess provides children opportunities for independent discovery, specifically “diversive exploration” (p. 26), it has positive behavioral and cognitive outcomes.

Berlyne (1966) observed that higher order animals, including humans, spend a significant amount of time playing and entertaining their curiosity, during which the senses explore items or

incidents that have no direct biological significance, meaning they are not indicative of danger nor associated survival or reproduction. In such cases, the appeal of a stimulus or pattern of stimuli appears instead to lie in its collative properties or its “novelty, surprisingness, incongruity, complexity, variability, and puzzlingness” (p. 30). Berlyne (1966) labels such behavior “exploratory behavior” (p. 25) and identifies two types: “specific exploration” and “diversive exploration” (p. 26). In specific exploration, an animal is motivated to investigate novel and complex stimuli out of curiosity or the potential discomfort that can result from uncertainty. However, in other instances of exploration known as diversive exploration, the animal does not seem to pursue information or clarity, rather the aim is to obtain “stimulation from any source that can afford an optimum dosage of novelty, complexity, and other collative properties” (Berlyne, 1966, p. 32). Pursuing optimal stimulation is the objective.

The novelty of stimuli decreases over time and the most satisfying dosage of novelty has been found to depend on an animal’s level of arousal. Berlyne, Salapatek, Gelman, and Zener (1964, as cited by Berlyne, 1966) found that rats that were significantly aroused, either by a noisy environment or by injection with stimulant drugs, preferred familiar stimuli, while rats that were less aroused preferred novel stimuli.

Adults and children alike occasionally experience restlessness, particularly when sitting for a prolonged period of time. The novelty theory of play reason that periodic recesses or breaks provide a change in environment that satisfies children’s natural drive to obtain novel stimuli. In fact, studies have found that an animal’s drive to engage in diverse exploration is particularly strong after spending a prolonged period of time in a monotonous environment (Jones, Wilkinson, & Braden, 1961; Butler, 1962, as cited by Berlyne, 1966). People who prescribe to the novelty theory of recess propose that when children have breaks from academic work,

opportunities to engage in diversive exploration benefits the learning that happens in the classroom.

Behavioral Benefits of Periodic Breaks

Breaks in academic learning, including but not limited to recess, have been associated with better classroom behavior. For example, in class “brain breaks” have been associated with decreased instances of problem behaviors (Trambley, 2017). Barros, Silver, and Stein (2009) explored a possible relationship between access to recess and teacher ratings of classroom behavior in third grade classrooms. Using a data set from the Early Childhood Longitudinal Study, children were grouped into two categories, those with none or minimal amounts of recess (fewer than 15 minutes) and those with some recess (greater than 15 minutes). Classroom behavior was defined by a single five-point scale, “Teacher’s rating of classroom behavior” (TRCB), where 1 signifies “misbehaves very frequently and is almost always difficult to handle” and 5 signifies “behaves exceptionally well” (p. 433). Multivariate regression analysis indicated that the TRCB scores of those students who received some recess were significantly greater than those of students who had no or minimal recess, even after accounting for potential confounding variables such as location or parent education level.

Other research has looked specifically at classroom behavior post-recess. Jarrett, Maxwell, Dickerson, Hoge, Davies, and Yetley (1998), observed fourth grade students' classroom behaviors before and after a weekly, randomly assigned recess period. Researchers also assessed behaviors during these same time frames on days when students did not receive recess. The kids did not know which day of the week this recess period would be. During behavior assessment, the researcher would observe each student for five seconds and then document their behavior as one or more of the following "W" for working on task, "F" for

fidgety, and "L" for listless. While "behavior during the pre-recess period did not differ on recess and non-recess days," (p. 124) assessment of post-recess behaviors revealed that "the children worked more" and "were less fidgety" (p. 124) on days when they had recess.

However, not all recess time impacts classroom behavior the same. Lassiter and Campbell (2019) found that post-recess TRCB were significantly higher than pre-recess ratings during the implementation of a school-wide walking program. This was not true of teachers rating of classroom behavior pre and post recess prior to program implementation. During the implementation of this walking program, there was also a significant decrease in number of sedentary students at recess. This suggests that the behavioral benefits of recess may depend at least in part on the nature of the activities that students engage in during recess time. However, more research is needed to confirm what types of activities may be more beneficial than others.

Social Development Theory of Recess

Recess often serves as a relatively unstructured time in which students can interact with peers with relatively little supervision. Those who prescribe to the social development theory of recess argue that during this time, children develop social skills that ultimately prepare them for adult life and that this skill development is possible because of the relatively unstructured peer interactions that take place during recess. Without adults to lead children through activities, the children themselves are responsible for keeping the games going, which means exercising communication and problem-solving skills (Jarrett, 2002; Ramstetter, Murray, & Garner, 2010). Recess also provides children opportunities to practice presentation management skills, for example, "keeping status even after losing a game" (Pellegrini & Smith, 1993, p. 60). However, not all of the social strategies that can be practiced by children during unstructured recess periods are equally desirable. Manipulation skills that may be potentially harmful to other children can

also be practiced at recess, such as the exclusion of particular children from a group or activity (Pellegrini & Smith, 1993).

Evidence suggests that children's play is imitative of adult behaviors and reflects culture-specific values (Eifermann, 1970, as cited by Sluckin, (1981/2017). Over the course of a year, Eifermann (1970 as cited by Sluckin, 1981/2017) observed the schoolyard play of children within two types of cooperative farming communities in Israel, moshavs and kibbutzim. Although there is some collective community support in both types of communities, individuals in a moshav have significant economic independence, while "the kibbutz family is totally subordinated to the community" (Sluckin, 1981/2017). The games played by kibbutz children were more cooperative and egalitarian in nature than those played by children at schools in moshav communities. On kibbutz playgrounds "it is not that competition as such is shunned, but rather that its potential impact is overcome by the children playing games which stress a good deal of co-operation within sub-groups" (Sluckin, 1981/2017).

Adult modeled and imposed gender roles likely account for at least some of the gender differences observed in play. Some have proposed that this gender specific play at recess, prepares boys and girls for gender roles in adulthood (Pellegrini & Smith, 1993). Lever (1975) observed that boys and girls participated in significantly different types of play activities; Boys played competitive games with formal rules and objectives more often than girls did. Girls often engaged in cooperative interactions characterized by having "no explicit goal, no end point, and no winners" (p. 481). Additionally, boys played in groups that were larger and more age-heterogeneous than those in which girls played. Lever (1975) suggested that participation in these formal games that involve groups of children of various ages prepares boys, particularly

older boys, for leadership roles in adulthood. Furthermore, since children's play reflects adult roles, the play of children should change as adult gender roles shift (Pellegrini & Smith, 1993).

How children spend their time at recess may be related to social skill development. Haapala, Hirvensalo, Laine, Laakso, Hakonen, Kankaanpää, Lintunen, and Tammelin (2014) found that students' physical activity level at recess was significantly related to certain social factors. Their study included 1,463 fourth, fifth, seventh, and eighth grade students across 19 schools, who self-reported their physical activity at recess as well as multiple "school-related social factors" (p. 5). In fourth and fifth grade students, significantly positive associations were found between physical activity at recess and relatedness to school. In all grade levels, "physical activity at recess was positively associated with peer relationships at school" (p. 5).

Recess Climate

While unstructured nature of recess can create valuable opportunities for children to practice resolving conflicts themselves and developing social skills, it can also present opportunities for bullying. Instances of bullying most often occur "outside the notice of adults" (Doll, Song, & Siemers, 2003, p. 171). In their discussion of how the ecology of a classroom can either "support or discourage bullying" (p. 161), Doll, Song, and Siemers (2003) observed that "when legitimate conflicts are left unresolved, or simply because an opportunity presents itself, children may resort to intimidation in order to prevail over or dominate classmates" (p. 163). Adult engagement at recess that supports effective conflict resolution is essential to preventing bullying.

Such adult engagement may be direct intervention when conflicts do arise. Adults can also support conflict resolution indirectly by fostering an inclusive environment and by providing support for human agency. More inclusive classrooms, where more children have friends, have

fewer conflicts. Furthermore, those conflicts that do occur in inclusive environments escalate less frequently (Newman, Murray, & Lussier, 2001, as cited by Doll, Song, & Siemers, 2003). Adults may promote friendships by inviting children to join games, ensuring games are played by inclusive rules, and creating opportunities for children to play together in organized games. Ensuring an inclusive environment sometimes requires limiting the practice of harmful social skills. Adults might intervene for example, when a child acts to exclude another from a group or activity. Excluding another child involves practicing manipulation, which however undesirable it may be, is a social skill (Pellegrini & Smith, 1993). Educators, therefore, not only would do well to provide opportunities for students' social skill development, but also have a responsibility to direct and correct this learning. Furthermore, if no adult objects to such a practice, not only is the inclusiveness of the playground in jeopardy, but an adult's reaction or lack thereof to what is potentially bullying behavior sends messages about its acceptability to students (Hoover & Hazler, 1994, as cited by Holt & Keyes, 2003).

Greater support for human agency within a classroom increases the likelihood that children are able to resolve conflicts on their own. This concept can also be applied to the playground. "Human agency refers to the collective self-systems that make it possible for children to become effective managers of their daily lives" (Doll, Song, & Siemers, 2003, p. 170) and is associated with children's "behavioral self-control" (p. 171), "self-efficacy" (p. 172), and "self-determination" (p. 173). A set of clear guiding rules or agreements regarding behavior at recess supports students' behavioral self-control, or their ability to manage their own behavior. The establishment of consistent and inclusive rules regarding how to play a specific game can serve a similar purpose. Furthermore, incorporating rule-following and conflict resolution strategies into routines can also support students' behavioral self-control (Doll, Song, & Siemers,

2003). For example, when there is a conflict about which of two players is 'out' in a rotational game such as four-square, students can use rock-paper-scissors to decide who will get to stay in and who will line up to play again. In such instances, rock-paper-scissors is much more likely to be used and its outcome is more likely to be respected, if adults have established a routine of using this strategy to resolve simple conflicts.

A child's self-efficacy is their set of beliefs "about their ability to learn and be successful" (p. 172) within a setting. A child's sense of self-efficacy can be strengthened when teachers and classmates assure them "that they are socially adept and likable" (p. 173). At recess, children and adults can do this for players that get out in a game by telling them, "good job, nice try" or by giving them a high-five. The last factor related to human agency discussed by Doll, Song, and Siemers (2003) is self-determination or a student's ability to navigate themselves through the making of their own daily decisions. Adults can promote self-determination by encouraging students to set goals, make choices, and solve problems for themselves, while also encouraging them to reflect on their own actions and skills along the way. Children with strong self-determination skills not only "are accountable for their treatment of others" (p. 174), but those who are victims of bullying behavior, can also "learn to think about their actions as sources of control" (p. 174).

Previous research suggests a relationship between high-functioning recess and positive recess climate. A 2015 study (London, Westrich, Stokes-Guinan, & McLaughlin) evaluated the recess quality and school culture of six schools, which were, for the first time, implementing the Playworks Coach program, a recess program intended to produce a high-functioning recess. London, Westrich, Stokes-Guinan, and McLaughlin (2015) identified each school as having either a high-functioning recess or a low-functioning recess at the end of the school year.

According to the American Academy of Pediatrics criteria for quality recess, the researchers defined a high functioning recess as "(1) appropriate games, space, and equipment were made available to students and (2) adults intentionally supported student's development of pro-social skills" (London, Westrich, Stokes-Guinan, & McLaughlin, 2015, p. 55). The recess climate of each school was also evaluated via school staff survey responses and with the following components in mind, "student engagement, physical and emotional safety, and positive relationships with adults" (p. 56). Four of the schools were identified as having high-functioning recess and two as having low-functioning recess.

Looking at survey questions related to recess climate, they compared the average responses from teachers at the four schools with a high-functioning recess to those from teachers at the two schools with a low-functioning recess. Of those teachers at schools with a high-functioning recess, 91.9 percent ($n = 62$) reported that children felt more included at recess and 87.1 percent ($n = 62$) reported that conflicts at recess had decreased since Playworks had been implemented. Significantly ($p < 0.01$) lower percentages of teachers at schools with a lower-functioning recess reported these same changes to recess climate at 59.2 percent ($n = 29$) and 55.5 percent ($n = 29$), respectively. Additionally, 97.8 percent ($n = 62$) of teachers at schools with a high-functioning recess reported that "coach played alongside students often or very often" (London, Westrich, Stokes-Guinan, & McLaughlin, 2015, p. 57), while only 52.3 percent ($n = 29$) of teachers at schools with low-functioning recess did ($p < 0.01$).

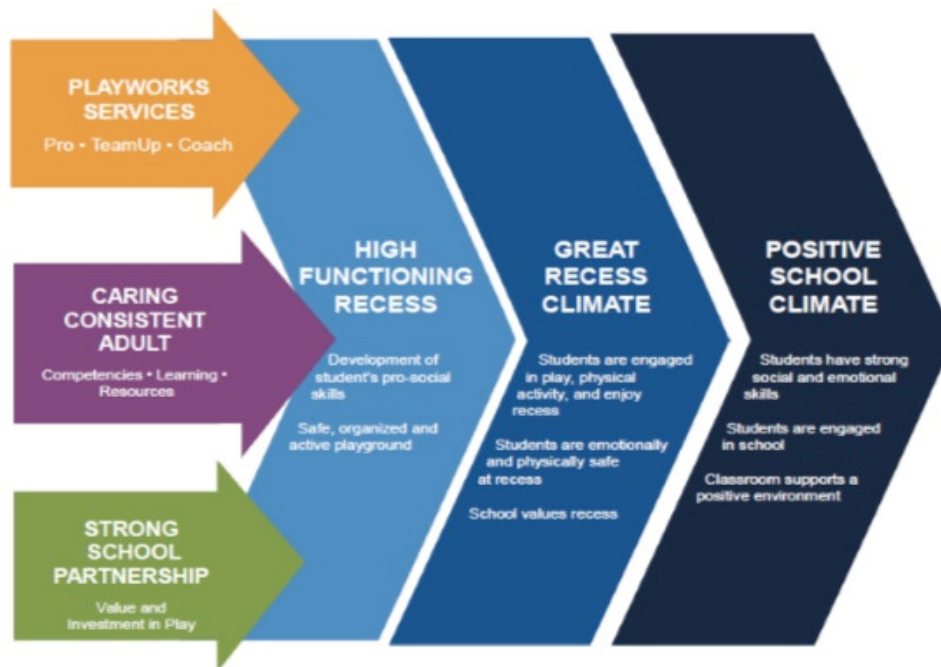
At six schools, teacher surveys were also used to measure the Playworks Program's impact on the classroom and overall school climate. At least 70 percent ($n = 93$) of teachers reported an increase of each of the following in the classroom since Playworks had been implemented: children's use of the conflict resolution strategy, ro-sham-bo (comparable to rock-

paper-scissors), students' use of positive language, and students' demonstration of inclusive behavior. The program's impact on school climate was also observable and significantly mediated by whether recess was high or low functioning. The majority of those teachers surveyed at schools with a high-functioning recess reported that children felt more physically safe (86.2%, $n = 62$) and emotionally safe (89.6%, $n = 62$) since Playworks had been implemented. Again, these percentages are significantly higher ($p < 0.01$) than those of teachers surveyed at schools with a lower-functioning recess: 50 percent each ($n = 29$).

Playworks and Team-Up

The mission of the national nonprofit, Playworks is “to improve the health and well-being of children by increasing opportunities for physical activity and safe, meaningful play” (Playworks, 2020). According to the Playworks Theory of Change, change begins with three short-term outcomes: education through Playworks services (Coach, TeamUp, or Pro services); securing the resource of a caring consistent adult at recess; and a strong school partnership. Together these factors enable the intermediate outcome of a high functioning recess. A high functioning recess then breeds a great recess climate. This great recess climate ultimately extends beyond the playground, producing an overall positive school climate. Great recess and school climate are long term outcomes of the program. These changes in recess and school climate are associated with outcomes such as a decrease in disciplinary incidents and bullying, which supports classroom learning by improving transition time and student focus.

Figure 1: Playworks Logic Model (Brown, Newman, Bauman, Schwartzhaupt, & Liu, 2018)



Playworks provides schools across the United States each with one of the following: Playworks Coach, Playworks TeamUp, and Playworks Pro services. The Playworks Coach program is the most extensive service offered by Playworks. In this program, a Playworks Coach (PC), who is employed and trained by Playworks, works full-time to coordinate the Playworks programming at one individual school. Each aspect of the program is meant to contribute to a high-functioning recess. In Class Game Times (CGTs), students learn new games, which can then be introduced at recess. The same happens during developmental leagues. The Junior Coach Leadership Program (JCLP) produces fourth and fifth graders who have learned to lead games and facilitate conflict resolution at recess.

Perhaps most importantly, the PC plays the role of a caring consistent adult, who children can trust, depend on, and play games with. They are present at each recess, where they model and coach children to use positive communication and sportsmanship. They give high-fives often and explicitly incorporate high-fives into games. They use intentional language such as, “good

job, nice try” when someone gets out in a game. Additionally, they teach and enforce consistent and inclusive rules that minimize the opportunity for the exclusion of any child, whether because of social standing or skill level. They also incorporate ro-sham-bo, or rock-paper-scissors, into games and then encourage children to use the tool when a conflict might otherwise result for example, when deciding who will go first in a game.

In order to reach more students at more schools, Playworks has developed Playworks Pro and Playworks TeamUp services. The Pro service consists of a week of full day trainings provided by Playworks staff to an individual school and its teachers and staff. Playworks TeamUp schools receive ongoing support from Playworks throughout the school year. In the TeamUp program, each individual school, with the guidance of Playworks, is responsible for identifying and overseeing a Recess Coach (RC), who serves as the caring consistent adult at recess; a Recess Manager (RM), who oversees the work of the RC and recess team; and other recess team members that support recess. Playworks provides ongoing support to this RC as well as to other recess team members, who ultimately support the day-to-day functioning of recess, including the supervision of Junior Coaches.

One way that Playworks supports school staff at TeamUp schools is by providing them with opportunities to participate in Playworks trainings. All new and returning Playworks staff attend multiple days of trainings at the beginning of each school year and in some regions, RCs are invited to join a portion of these. Playworks also coordinates with each individual school to plan trainings specifically for its teachers and staff. Additionally, Playworks employs Site Coordinators (SCs), who each serve as a consultant at up to four TeamUp schools. During the school year, SCs spend one out of every four weeks at each school. During this week, they fulfill some aspects of direct program implementation. For example, they lead CGTs and an afterschool

Junior Coach Leadership training. However, they do not play the role of the caring consistent adult at recess. Instead they observe recess, identify challenges and areas for growth and then work closely with the RC and other team members to develop solutions.

Another short-term outcome in the Playworks theory of change is a strong school partnership, which is characterized by willingness on the part of school leaders to invest in and prioritize play in their school and a willingness on the part of Playworks to accommodate the school's unique needs. A school's investment of funding into Playworks services reflects a value of play at some level; however, investment cannot stop there. This is particularly true for TeamUp schools, at which factors impacting program implementation, such as RC accountability, payable training hours, and the prioritization of RC presence at recess are in the hands of school administrators. Playworks aims to empower not only the RC, but the school's entire recess team, a member of which ideally is the principal or other school administrator. One way that Playworks supports these school leaders is by helping them to identify which individuals to make their schools' RC. Some schools hire a Recess Coach specifically for this role. Others identify a group of individuals to serve this purpose. Some schools opt for an existing staff member to take on this role, such as an individual from within their existing team of part-time recess supervisors. Other schools give this responsibility to a classroom teacher, physical education teacher, teaching assistant, administrator, or classified staff member. Taking on this role presents different challenges for each individual, who each has a unique skillset, personality, and potential set of responsibilities outside of recess.

The implementation of Playworks programming, including the consultant based TeamUp program, can have a significant impact on the quality of recess. London and Standeven (2016) measured quality of recess using the Great Recess Framework (GRF). They analyzed this GRF

data for schools implementing Playworks TeamUp and found that on average, schools' second assessments scored 9 to 10 percent higher on each of the GRF components of safety, engagement, and empowerment. London and Standeven (2016) also individually examined one Team Up school in each of five regions. Comparing these schools' changes in GRF scores reveals that the Team Up program can have very different impacts in different schools. For example, one school observed a change in the empowerment component of the GRF of greater than 45 percent, while another experienced no change in this competency.

Playworks began using the Great Recess Framework (GRF) to evaluate recess at TeamUp schools in the 2015 to 2016 school year at two time points, one each in the spring and fall semester (London & Standeven, 2016). The GRF includes 22 items on a four-point scale. Development of the GRF as an observational tool for assessing recess began with a team of researchers and professionals from within Playworks. They worked together to choose items to include in the framework, which reflect characteristics that are believed to promote physical movement and pro-social behavior at recess. In order to test the validity of the GRF, Massey, Stellino, Mullen, Claassen, and Wilkison (2018) used "exploratory structural equation modeling (ESEM)" (p. 5) to examine the GRF observations of 649 recess periods across 495 schools. This examination "suggested a four-factor model was most suitable for the data" (p. 6). The four factors were, "(1) structure and safety; (2) adult engagement and supervision; (3) student behaviors; and (4) transitions" (p. 8).

In addition to GRF observations made by site coordinators, teachers and other staff at TeamUp schools were surveyed. The Robert Wood Johnson Foundation (London & Standeven, 2017) evaluated these surveys and found that of staff surveyed, 88 percent reported improvement in "students' familiarity with playground games" (p. 11). Additionally, staff reported increases in

conflict resolution strategy use, student to student cooperation, and students playing with students outside of their usual peer group, 79, 83, and 72 percent of staff respectively. Staff also reported decreases in the number of instances of bullying and the amount of time spent in class addressing recess conflicts, 61 and 62 percent respective (London & Standeven, 2017).

The Robert Wood Johnson Foundation (London & Standeven, 2017) also conducted school visits at five TeamUp school, through which they made observations related to the function that the school partnership plays in mediating change. They found that the TeamUp program was most supported and seemed to best line up with school culture when the principal of the school had initiated the partnership with Playworks as compared to when the program had been in place before the principal joined the school or when the idea to consider Playworks programming had come from the district. Although Playworks emphasizes the importance of a recess coach being present at each recess period every day, filling the position of Recess Coach to serve as the caring consistent adult at recess is ultimately the responsibility of school leaders. Some schools hire individuals specifically to be the recess coach, however situational factors, namely funding, may impede this. Sometimes the recess coach must fulfill other responsibilities, such as lunch supervision. This was the case in three of the schools visited by the Robert Wood Johnson Foundation (London & Standeven, 2017). Furthermore, in each of the four schools, which had recess coaches, the hours these individuals were able to work were “capped by district policies” (p. 9). This limitation hinders the school’s capacity to benefit fully from Playworks services such as professional development for recess coaches and other recess team members.

Because the Playworks theory of change includes a competent and skilled caring consistent adult as one of the three factors necessary for a high functioning recess, Brown, Newman, Bauman, Schwartzhaupt, and Liu (2018) hypothesized that the “attitudes,

competencies, and skills ... of Recess Team Members ... were related to the quality of implementation” (p.3). Recess team member attitudes, competencies, and skills were measured using the recess team member survey, which was composed of 60 items, each on a nine scale. Survey items addressed themes such as, “value of play,” “beliefs about student learning,” “influence in school,” “self-efficacy,” “mindset,” “social and emotional competence,” “support for student social and emotional development,” “motivation for implementation,” and “support for Playworks” (Brown, et al., 2018, p. 4-5). Researchers used 544 survey responses for recess team members at 223 schools. The quality of implementation and changes in it over time, were measured by GRF assessments.

Brown, et al. (2018) found “significant but weak correlations between recess team members’ value of play and the aspects of a quality recess (safety and structure, transitions, and overall quality)” (p. 10). Similar correlations were also found “between recess team members’ support for Playworks and the aspects of a quality recess (safety and structure, adult engagement and supervision, transitions, and overall quality) (Brown, et al., 2018, p. 10). Correlation analysis supported no relationship between recess team traits and changes in the quality of recess. Still, “t-tests indicated that schools exhibiting low quality safety and structure at the beginning of the year and high quality safety and structure at the end of the year had higher adult social and emotional competence compared with schools that remained low quality in safety and structure” (Brown, et al., 2018, p. 12).

Recess Team Types and Program Implementation

Payne, Gottfredson, and Gottfredson (2006), utilized survey data from the National Study of Delinquency Prevention in Schools (Gottfredson et al., 2000, as cited by Payne, 2006) to identify the effects of school and program factors on the intensity of implementation of school

interventions aimed at increasing safety and/or to addressing/preventing problem behaviors, such as illegal activity, drug use, tardiness, etc. The data used, represented 544 schools, which were implementing intervention practices that were programmatic in nature, such as training, counseling, coaching, classroom practice improvements, “activities to change or maintain culture, climate, or expectations for behavior,” and “intergroup relations and school-community interaction” (p. 227).

For each school, Activity Coordinator surveys provided measures related to intensity of implementation. Intensity of implementation was represented by three factors, including the following two measures: “Level of use by school personnel” and the “frequency of operation” (p. 228). Level of Use was indicated on a scale between “at least one person in the school knows something about it” and “one or more persons is conducting activity on a regular basis” (Payne, Gottfredson, & Gottfredson, 2006, p. 228). Frequency of Operation was indicated on a scale between “special occasions once or twice a year” and “continually throughout the year” (p. 228). Additionally, because of different availability of the intensity measures for the various programs, a composite scale termed, intensity, represented three measures: “duration, number of lessons or sessions, and frequency of student participation” (p. 229).

Additionally, both Activity Coordinator and Principal surveys provided 13 measures for school and program characteristics. An exploratory factor analyses was conducted for these measures. Three latent factors were identified, which accounted for 51% of variation in the survey measures, “Local Program Development Process, Organizational Capacity, and Integration into School Operations” (Payne, Gottfredson, & Gottfredson, 2006, p. 231). The Local Program Development Process describes the school’s process for selecting and preparing to implement the program. The Organizational Capacity factor includes measures such as

“teacher-principal communication” (p. 231). The Integration into School Operations factor describes the degree to which the program is incorporated into regular school happenings. It included two measures, one of which is concerned with how large a portion of the “activity coordinator’s job was his/her work related to program or activity” (p. 228). A model of school and program characteristics was produced, including the three factors described above as well as two observable measures, “Standardization and Principal Support” (p. 231). The Standardization measure describes the level of structured guidance was available for those implementing the program, related to factors such as the availability of a manual. The Principal Support measure describes the degree to which the Activity Coordinator perceives that the Principal facilitates or hinders program implementation.

A structural equations model (SEM) of “the direct effects of the school and program factors on indicators of implementation intensity” (p. 230) was estimated using the EQS Structural Equations Program (Bentler, 1995 as cited by Payne, Gottfredson, and Gottfredson, 2006). They found that Principal Support and Local Program Process Development were each positively associated with the school’s level of use of the intervention. Integration into School Operations and Standardization were each positively associated with Intensity, while Integration into School Operations was also positively associated with Frequency of Operation. Of these observed associations, those related to Principal Support and Integration into School Operations are particularly relevant to understanding the potential impact of recess team and Recess Coach characteristics on implementation of Playworks TeamUp.

The correlation between Integration into School Operations and each Frequency of Operation and Intensity suggests, “that programs that are integrated into normal school activities are more likely to be used often, have more lessons or sessions, have greater student

participation, and last longer” (p. 234). This Integration into School Operations not only reflects the degree to which the program is integrated into the regular school day, but also the degree to which responsibility for implementing the specific program is integrated into the job responsibilities of the activity coordinator. Within Playworks TeamUp, each school must secure an individual, who will serve as their Recess Coach (RC). Sometimes an individual is hired part-time specifically for the role of RC. Integration of RC responsibilities into the job description of a newly hired full-time school employee has also been considered. However, because of limited resources, schools often look within their existing personnel to fill this role. Sometimes there is a clear choice, an individual whose existing role is largely compatible with the responsibilities of RC. Such a role would likely involve this individual being present on the playground during recess periods, as a part of the school’s pre-Playworks recess team. Integration of certain RC responsibilities may be particularly challenging for teachers, for whom recess often serves as a break in the workday and on whom the responsibility typically falls to facilitate structured class time immediately preceding and following recess.

The positive relationship between Principal Support and the level of use by school staff, suggests that at schools where the principal is supportive of the program, the school is “likely to make more extensive use of the programs they have chosen” (p. 233). Administrators such as principals are often encouraged though not required to play a role on the Playworks RT. The most common role on this team that administrators take on is that of the Recess Manager, which involves supporting the program through goal setting, holding team members accountable, and behind-the-scenes problem solving. However, some administrators play the role of Recess Coach. Participation on the RT, particularly as RCs, demonstrates an administrator’s support for the program.

Methodology

Research Questions

The primary goals of this evaluation will be to examine recess team characteristics that may have an impact on recess quality. All analysis will be done using the Great Recess Framework (GRF) rubric. Research questions include:

1. Does the number of people who identify as being on the recess team affect the quality of recess (as measured by GRF factors)?
2. Does the Recess Coach's time on the recess team relative to length of employment affect the quality of recess (as measured by GRF factors)?
3. Does the Recess Coach's role at the school affect the quality of recess (as measured by GRF factors)?

Materials

The following secondary data sources will be used, Recess Team Member Surveys; and Great Recess Framework Assessments (Spring and Fall). Recess Team Member Surveying was performed by Playworks. This Recess Team Member survey addressed various topics, including the individual's value of play; and confidence in their own abilities to influence students, i.e. to motivate students; and their "motivation for implementation" (Brown, Newman, Bauman, Schwartzhaupt, & Liu, 2018, p. A1). We characterized schools based on their recess teams/Recess Coaches, by utilizing the following pieces of data from this survey: role at school; years worked at school; years served on recess team; and role as it relates to Playworks.

The Great Recess Framework is a 23-item assessment tool used to assess recess at TeamUp schools at least two times a year, in the Spring and Fall. It is completed by Playworks staff, often a Site Coordinator or Program Manager. While the GRF does provide some insight into adult

behavior on the playground, it is not specific to the recess team members. It serves as a measure of recess quality.

Procedure

The original Great Recess Framework (GRF) data set contained GRF entries for 305 TeamUp schools. All midpoint entries were removed, leaving only Spring and Fall GRF entries. Doing this did not eliminate any schools. Next 44 schools, which had fewer than two entries for either the Spring or the Fall timeframe were removed. This left 261 schools, for which average Spring and average Fall scores were calculated for each of the 23 GRF measures. Using 12 of these 23 GRF measures, three GRF factors were calculated: Student Behaviors; Adult Engagement and Supervision; and Transitions. These factors were used by Brown, Newman, Bauman, Schwartzhaupt, and Liu (2018) in their analysis of how recess team members' values and attitudes relate to recess quality. The Student Behaviors factor was composed of five GRF items/measures: Game Initiation; Physical Altercations; Student Communication; Rules: Students; and Conflict Resolution. The Adult Engagement and Supervision factor was composed of four GRF items/measures: Adult-to-Student Ratio; Adult Positioning; Adult Engagement; and Adult Behavior. The Transitions factor was composed of three GRF items/measures: Transition to Recess; Transition from Recess; and Physical Activity.

The AIR data set originally had 911 data entries. Of these, 266 entries were removed either because they contained responses to 50 percent or fewer of the survey items and/or were from individuals who did not identify as being on the recess team. One hundred and one additional entries from individuals who identified as being on the recess team but did not identify as being a recess coach, recess manager, nor other recess team member were also removed. In their analysis of this data set, Brown, Newman, Bauman, Schwartzhaupt, and Liu (2018)

determined that these individuals “did not serve in a role that is typically considered a recess team member” (p. 6). This left 544 entries. In total 201 schools had sufficient data in both the GRF and AIR data sets. Among these 201 schools, 478 individual recess team members were represented in the AIR data set.

Each school’s number of responses in the final AIR data set was used to estimate the number of individuals on its recess team. This estimate of the number of individuals on the recess team was integrated into each school’s GRF data. A bivariate correlation in SPSS, using a two-tailed test of significance was conducted to evaluate the relationship between this estimate of the number of school personnel engaged in program implementation and each of the GRF measures of interest.

Within the AIR data set, there were 46 Recess Coaches from 41 schools who had worked at their school for five years or longer. These coaches were characterized based on the number of years they indicated being on the school’s recess team relative to the time they indicated being employed at the school. Time on the recess team relative to employment was meant to represent the degree to which the RC role was integrated into this individual’s job responsibilities. This representation was an estimation and was based on the assumption that integration of RC responsibilities into the jobs of individual’s whose existing role at the school is unrelated to recess, will be more challenging and therefore likely less fully realized.

The 46 coaches and their schools were grouped into one of two groups. Group 1 consisted of coaches who had worked on their school’s recess team for a least 50 percent of the time they had worked at the school. Group 2 consisted of coaches who had worked on their school’s recess team for less than 50 percent of the time they had worked at the school. Five schools had two RCs, who had each been at the school for five or more years. In two instances,

the two RCs at the same school fell into different groups than one another. In these two instances, the RCs were removed from the data set. After eliminated these RCs, there were 42 RCs, representing 39 schools, which were assigned to either Group 1 (n=21) or Group 2 (n=18).

In total, there were 122 schools with a Recess Coach (RC), of which 29 schools had two or more RCs. This left a final count of 93 schools that were included in the database for analysis which were then characterized based on their Recess Coach's role at the school. Fifteen RCs who identified as being an Administrator in some capacity were isolated from these 93 schools. Of these 15 Administrators, three also identified themselves as having an additional role at the school, including one individual who identified as being a classroom teacher. These 15 administrators represented 15 schools which were labeled Admin Coach. The remaining 78 schools were labeled Non-Admin Coach. This was repeated for classroom teachers and physical education (P.E.) teachers. There were 10 RCs who identified as being a classroom teacher, of which six identified as having an additional role at the school such as paraprofessional, teacher assistant or instructional aide, and special education teacher. These 10 classroom teachers represented 10 schools, which were labeled Classroom Teacher Coach. The remaining 83 schools were labeled Non-Classroom Teacher Coach. There were 12 RCs who identified as being a P.E. teacher, of which none identified as having an additional role at the school. These 12 P.E. teachers represented 12 schools, which were labeled P.E. Coach. The remaining 81 schools were labeled Non-P.E. Coach.

Table 1: Recess Coach and School Role

	ROLE	NON-ROLE	TOTAL
Administrators	15	78	93
Classroom Teachers	10	83	93
P.E. Teachers	12	81	93

Results

Select cases in the revised database were analyzed against three GRF factors: Student Behavior, Adult Engagement and Supervision, and Transitions; as well as the individual GRF measures that compose them. These are as follows: Student Behaviors (Game Initiation; Physical Altercations; Student Communication; Rules: Students; and Conflict Resolution); Adult Engagement and Supervision (Adult-to-Student Ratio; Adult Behavior; Adult Positioning; and Adult Engagement); Transitions (Transition to Recess; Transition from Recess; and Physical Activity).

Evaluation Question 1: Does the number of people who identify as being on the recess team affect the quality of recess (as measured by GRF factors)?

In the revised dataset, there were 201 schools that were analyzed against the first evaluation question. Size of recess team ranged from one to ten team members. Those recess teams with seven or more team members were considered outliers. This analysis focused on team sizes of one to six recess team members. A bivariate correlation in SPSS, using a two-tailed test of significance was conducted to evaluate team size against each of the GRF measures of interest using the Fall; and the combined (Spring and Fall) data. No significant findings occurred across any of the GRF factors or measures.

Evaluation Question 2: Does the Recess Coach's time on the recess team relative to length of employment affect the quality of recess (as measured by GRF factors)?

There were 39 schools that were analyzed against the second evaluation question. This analysis focused on schools that had Recess Coaches, who had worked at the school for five or more years. Group 1 consisted of 21 schools with a recess coach or recess coaches, who had served on the recess team for at least 50 percent of their time employed by the school. Group 2

consisted of 18 schools with a recess coach or recess coaches, who had served on the recess team for less than 50 percent of their time employed by the school. Using Fall GRF data, an independent samples t-test was conducted in order to compare the scores between Group 1 (n = 21) and Group 2 (n = 18) on each of the GRF measures of interest. The same tests that were conducted using the Fall data, were repeated using the combined (Spring and Fall) data, where Group 1 (n = 42)/Group 2 (n = 36). All of the independent samples t-tests conducted were found to be statistically non-significant.

Evaluation Question 3: Does the Recess Coach's role at the school affect the quality of recess (as measured by GRF factors)?

There were 93 schools that were analyzed against the third evaluation question. This analysis focused solely on those schools with a single RC represented in the AIR data set. Using the Fall data, independent samples t-tests were conducted in order to compare the GRF scores between the Admin Coach (n = 15) and Non-Admin Coach (n = 78) groups. These tests were repeated in order to compare the Fall GRF scores between the Classroom Teacher Coach (n = 10) and Non Classroom Teacher Coach (n = 83) groups and then once more to compare the Fall GRF scores between the P.E. Coach (n = 12) and Non P.E. Coach (n = 81) groups. In total 45 independent samples t-tests were conducted using the Fall data. These 45 tests were repeated using the combined Spring and Fall data (refer to tables 2 through 7).

The independent t-test conducted to compare the Fall Adult Engagement and Supervision scores between the Admin Coach (n = 15) and Non-Admin Coach (n = 78) groups was found to be statistically non-significant. However, scores on one of four GRF measures that compose this Adult Engagement and Supervision factor, Adult Behavior, were found to be significantly different between these groups. For the independent t-test conducted to compare the Fall Adult

Behavior scores between the Admin Coach ($n = 15$) and Non-Admin Coach ($n = 78$) groups, Levene's test for equality of variances was found to be significant, $F = 4.85$, $p = 0.030$. Because of this, a t statistic not assuming equal variances was computed. This was found to be statistically significant, $t(28) = 2.76$, $p = 0.010$. These results indicate that in the Fall, the Admin Coach group ($M = 3.47$, $SD = 0.52$) scored higher on Adult Behavior than did the Non-Admin Coach group ($M = 3.03$, $SD = 0.78$).

For the independent t-test conducted to compare the Fall Student Behaviors scores between the Admin Coach ($n = 15$) and Non-Admin Coach ($n = 78$), Levene's test for equality of variances was found to be significant, $F = 5.30$, $p = 0.024$. Because of this, a t statistic not assuming equal variances was computed. This test was found to be statistically significant, $t(39.45) = 3.04$, $p < 0.01$. These results indicate that in the Fall, the Admin Coach group ($M = 3.49$, $SD = 0.23$) score higher on Student Behaviors than did Non-Admin Coach group ($M = 3.25$, $SD = 0.46$).

The independent t-test conducted to compare the Fall Transitions scores between the Admin Coach ($n = 15$) and Non Admin Coach ($n = 78$) groups was found to be statistically significant, $t(91) = 2.19$, $p < 0.05$. These results indicate that in the Fall, the Admin Coach group ($M = 3.53$, $SD = 0.42$) scored higher on Transitions than did the Non-Admin Coach group ($M = 3.21$, $SD = 0.54$).

The independent t-tests conducted to compare each the Fall Adult Engagement and Supervision; the Student Behavior; and the Transitions scores between the Classroom Teacher Coach ($n = 10$) and Non-Classroom Teacher Coach ($n = 83$) groups were all found to be statistically non-significant. However, scores on one of three GRF measures that compose the Transitions factor, Transition from Recess, were found to be significantly different between these

groups. For the independent t-test conducted to compare the Fall Transition from Recess scores between the Classroom Teacher Coach ($n = 10$) and Non-Classroom Teacher Coach ($n = 83$) groups, Levene's test for equality of variances was found to be significant, $F = 7.10$, $p = 0.009$. Because of this, a t statistic not assuming equal variances was computed. This test was found to be statistically significant, $t(18) = 3.36$, $p < 0.01$. These results indicate that in the Fall, the Classroom Teacher Coach group ($M = 3.65$, $SD = 0.41$) scored higher on Transition from Recess than did the Non-Classroom Teacher Coach group ($M = 3.13$, $SD = 0.78$). The independent samples t-tests comparing these groups' scores on the remaining two GRF measures that compose the Transitions factor were found to be statistically non-significant.

The independent t-test conducted to compare the Fall Adult Behavior scores between the P.E. Coach ($n = 12$) and Non-P.E. Coach ($n = 81$) groups was found to be statistically non-significant. The independent t-test conducted to compare the Fall Student Behavior scores between the P.E. Coach ($n = 12$) and Non P.E. Coach ($n = 81$) groups was found to be statistically significant, $t(91) = -2.71$, $p < 0.01$. These results indicate that in the Fall, P.E. Coach group ($M = 2.98$, $SD = 0.32$) scored lower on Student Behavior than did the Non-P.E. Coach group ($M = 3.33$, $SD = 0.44$).

The independent t-test conducted to compare the Fall Transitions scores between the P.E. Coach ($n = 12$) and Non P.E. Coach ($n = 81$) groups was found to be statistically significant, $t(91) = -2.50$, $p < 0.05$. These results indicate that in the Fall, P.E. Coach group ($M = 2.92$, $SD = 0.46$) scored lower on Transitions than did the Non-P.E. Coach group ($M = 3.32$, $SD = 0.52$). Additionally, Fall scores on one of three GRF measures, which compose this Transitions factor were also found to be significantly different between these groups. The independent samples t-test comparing the P.E. Coach and Non-P.E. Coach groups' Fall scores on the Transition from

Recess is statistically significant ($t(91) = -2.79, p < 0.01$). These results indicate that in the Fall, the P.E. Coach group ($M = 2.63, SD = 0.64$) scored lower on the Transition from Recess than did the Non-P.E. Coach group ($M = 3.27, SD = 0.75$).

Table 2: Contrast of the Fall Scores of Admin Coach Schools with the Fall Scores of Non-Admin Coach Schools

Variable	Admin Coach		Non-Admin Coach		t	df	p	95% CI		Levene's test for equality of variances	
	M	SD	M	SD				LL	UL	F	Sig
STUDENT BEHAVIOR	3.49	0.23	3.25	0.46	3.04	39.45	0.004	0.08	0.40	5.30	0.024
Student Communication	3.31	0.48	2.92	0.62	2.30	91.00	0.024	0.05	0.73		
Physical Altercations	3.71	0.25	3.60	0.55	1.19	46.17	0.241	-0.07	0.29	5.53	0.021
Rules/Students	3.43	0.46	3.12	0.54	2.09	91.00	0.040	0.01	0.61		
Game Initiation	3.70	0.41	3.58	0.65	0.71	91.00	0.483	-0.22	0.47		
Conflict Resolution	3.30	0.53	3.02	0.74	1.39	91.00	0.168	-0.12	0.68		
TRANSITIONS	3.53	0.42	3.21	0.54	2.19	91.00	0.031	0.03	0.61		
Transition to Recess	3.50	0.71	2.94	0.82	2.48	91.00	0.015	0.11	1.01		
Transition from Recess	3.37	0.77	3.15	0.77	1.01	91.00	0.314	-0.21	0.65		
Physical Activity	3.73	0.42	3.55	0.51	1.29	91.00	0.200	-0.10	0.46		
ADULT ENGAGEMENT & SUPERVISION	3.19	0.43	2.98	0.52	1.52	91.00	0.133	-0.07	0.50		
Adult to Student Ratio	3.47	0.79	3.22	0.72	1.19	91.00	0.237	-0.16	0.65		
Adult Positioning	3.50	0.82	3.28	0.71	1.08	91.00	0.284	-0.19	0.63		
Adult Engagement	2.33	0.79	2.38	0.89	-0.18	91.00	0.857	-0.54	0.45		
Adult Behavior	3.47	0.52	3.03	0.78	2.76	28.03	0.010	0.11	0.77	4.85	0.030
n	15		78								

Table 4: Contrast of the Fall Scores of P.E. Teacher Coach Schools with the Fall Scores of Non-P.E. Teacher Coach Schools

Variable	P.E. Coach		Non-P.E. Coach		t	df	p	95% CI		Levene's test for equality of variances	
	M	SD	M	SD				LL	UL	F	Sig
STUDENT BEHAVIOR	2.98	0.32	3.33	0.44	-2.71	91.00	0.008	-0.62	-0.10		
Student Communication	2.83	0.39	3.01	0.64	-0.91	91.00	0.366	-0.55	0.21		
Physical Altercations	3.33	0.49	3.66	0.51	-2.11	91.00	0.038	-0.64	-0.02		
Rules/Students	2.83	0.39	3.22	0.54	-2.39	91.00	0.019	-0.71	-0.07		
Game Initiation	3.21	0.75	3.65	0.58	-2.39	91.00	0.019	-0.82	-0.08		
Conflict Resolution	2.67	0.49	3.12	0.73	-2.09	91.00	0.039	-0.89	-0.02		
TRANSITIONS	2.92	0.46	3.32	0.52	-2.50	91.00	0.014	-0.72	-0.08		
Transition to Recess	2.67	0.49	3.08	0.85	-1.64	91.00	0.104	-0.92	0.09		
Transition from Recess	2.63	0.64	3.27	0.75	-2.79	91.00	0.006	-1.10	-0.18		
Physical Activity	3.46	0.58	3.60	0.49	-0.90	91.00	0.368	-0.45	0.17		
ADULT ENGAGEMENT & SUPERVISION	2.96	0.62	3.02	0.49	-0.38	91.00	0.704	-0.37	0.25		
Adult to Student Ratio	2.92	0.63	3.31	0.73	-1.77	91.00	0.080	-0.84	0.05		
Adult Positioning	3.21	0.72	3.33	0.74	-0.53	91.00	0.596	-0.57	0.33		
Adult Engagement	2.67	1.07	2.33	0.84	1.26	91.00	0.212	-0.20	0.88		
Adult Behavior	3.04	0.78	3.11	0.76	-0.27	91.00	0.789	-0.53	0.41		
n	12		81								

Table 5: Contrast of the Fall and Spring Scores of Admin Coach Schools with Fall and Spring Scores of Non-Admin Coach Schools

Variable	Admin Coach		Non-Admin Coach		t	df	p	95% CI		Levene's test for equality of variances	
	M	SD	M	SD				LL	UL	F	Sig
STUDENT BEHAVIOR	3.18	0.54	2.99	0.60	1.59	184.00	0.113	-0.04	0.42		
Student Communication	3.11	0.59	2.71	0.66	3.03	184.00	0.003	0.14	0.65		
Physical Altercations	3.66	0.40	3.50	0.64	1.79	62.90	0.079	-0.02	0.34	6.37	0.012
Rules/Students	3.07	0.77	2.82	0.78	1.57	184.00	0.118	-0.06	0.55		
Game Initiation	3.18	0.92	3.21	0.94	-0.13	184.00	0.894	-0.39	0.34		
Conflict Resolution	2.88	0.81	2.72	0.89	0.93	184.00	0.356	-0.18	0.51		
TRANSITIONS	3.01	0.77	2.90	0.65	0.75	184.00	0.454	-0.16	0.37		
Transition to Recess	3.02	0.87	2.71	0.85	1.81	184.00	0.072	-0.03	0.64		
Transition from Recess	2.77	0.93	2.76	0.92	0.06	184.00	0.956	-0.35	0.37		
Physical Activity	3.23	0.86	0.75	0.06	-0.09	184.00	0.930	-0.32	0.29		
ADULT ENGAGEMENT & SUPERVISION	2.89	0.53	2.74	0.57	1.33	184.00	0.186	-0.07	0.37		
Adult to Student Ratio	3.37	0.73	3.19	0.74	1.23	184.00	0.222	-0.11	0.47		
Adult Positioning	3.20	0.87	3.03	0.80	1.03	184.00	0.304	-0.15	0.49		
Adult Engagement	2.03	0.73	2.06	0.86	-0.17	184.00	0.869	-0.36	0.30		
Adult Behavior	2.97	0.85	2.69	0.88	1.61	184.00	0.110	-0.06	0.63		
n	30		156								

Table 6: Contrast of Fall and Spring Scores of Classroom Teacher Coach Schools with Fall and Spring Scores of Non-Classroom Teacher Coach Schools

Variable	Classroom Teach Coach		Non-Classroom Teach Coach		t	df	p	95% CI		Levene's test for equality of variances	
	M	SD	M	SD				LL	UL	F	Sig
STUDENT BEHAVIOR	3.08	0.60	3.02	0.59	0.43	184.00	0.666	-0.22	0.34		
Student Communication	2.68	0.78	2.79	0.65	-0.72	184.00	0.474	-0.42	0.20		
Physical Altercations	3.78	0.52	3.49	0.62	2.03	184.00	0.043	0.01	0.58		
Rules/Students	3.13	0.78	2.83	0.78	1.60	184.00	0.111	-0.07	0.66		
Game Initiation	2.88	1.04	3.24	0.92	-1.67	184.00	0.096	-0.80	0.07		
Conflict Resolution	2.93	0.98	2.73	0.87	0.96	184.00	0.340	-0.21	0.61		
TRANSITIONS	2.93	0.72	2.92	0.67	0.09	184.00	0.930	-0.30	0.33		
Transition to Recess	2.50	1.12	2.79	0.81	-1.12	21.47	0.274	-0.83	0.25	6.28	0.013
Transition from Recess	2.95	0.99	2.74	0.91	0.99	184.00	0.325	-0.22	0.65		
Physical Activity	3.35	0.80	0.76	0.06	0.65	184.00	0.517	-0.24	0.48		
ADULT ENGAGEMENT & SUPERVISION	2.77	0.60	2.77	0.57	0.04	184.00	0.967	-0.26	0.27		
Adult to Student Ratio	3.62	0.58	3.17	0.74	2.62	184.00	0.010	0.11	0.79		
Adult Positioning	2.87	1.05	3.08	0.78	-0.89	21.60	0.381	-0.72	0.29	6.57	0.011
Adult Engagement	1.98	0.91	2.07	0.83	-0.46	184.00	0.646	-0.48	0.30		
Adult Behavior	2.63	1.05	2.74	0.86	-0.57	184.00	0.570	-0.53	0.29		
n	20		166								

Table 7: Contrast of Fall and Spring Scores of P.E. Teacher Coach Schools with Fall and Spring Scores of Non-P.E. Teacher Coach Schools

Variable	P.E. Coach		Non-P.E. Coach		t	df	p	95% CI		Levene's test for equality of variances	
	M	SD	M	SD				LL	UL	F	Sig
STUDENT BEHAVIOR	2.93	0.33	3.04	0.62	-1.30	51.97	0.199	-0.27	0.06	7.63	0.006
Student Communication	2.77	0.39	2.78	0.70	-0.06	48.49	0.951	-0.20	0.19	6.79	0.010
Physical Altercations	3.27	0.59	3.56	0.61	-2.18	184.00	0.031	-0.55	-0.03		
Rules/Students	2.79	0.41	2.87	0.82	-0.77	54.68	0.445	-0.30	0.13	6.85	0.010
Game Initiation	3.21	0.74	3.20	0.96	0.02	184.00	0.982	-0.40	0.41		
Conflict Resolution	2.60	0.51	2.77	0.92	-1.30	48.93	0.201	-0.42	0.09	11.93	0.001
TRANSITIONS	2.78	0.46	2.94	0.70	-1.12	184.00	0.266	-0.45	0.13		
Transition to Recess	2.52	0.62	2.80	0.88	-1.91	38.47	0.063	-0.56	0.02	5.19	0.024
Transition from Recess	2.46	0.64	2.80	0.95	-2.28	39.77	0.028	-0.65	-0.04	8.12	0.005
Physical Activity	3.35	0.52	3.23	0.80	0.75	184.00	0.454	-0.21	0.46		
ADULT ENGAGEMENT & SUPERVISION	2.76	0.58	2.77	0.57	-0.10	184.00	0.922	-0.26	0.23		
Adult to Student Ratio	2.94	0.71	3.26	0.73	-2.00	184.00	0.047	-0.63	0.00		
Adult Positioning	2.90	0.75	3.08	0.82	-1.06	184.00	0.290	-0.54	0.16		
Adult Engagement	2.33	0.89	2.02	0.82	1.75	184.00	0.083	-0.04	0.68		
Adult Behavior	2.85	0.76	2.71	0.90	0.73	184.00	0.465	-0.24	0.52		
n	24		162								

Discussion

The finding that schools with an administrator as the RC, tend to have more organized transitions to recess may reflect a tendency for such tasks to align well with administrative roles. Administrators may likely already be thinking about how to move kids around safely and efficiently. They also may have greater agency to make decisions behind the scenes to support these transitions and when actively participating in these transitions, may be more likely to utilize that power. At schools where the RC is not an administrator, it may be beneficial for an administrator to occasionally play an active role in facilitating this transition to recess.

The difference in Student Behavior scores between the Admin Coach and Non-Admin Coach groups observed in the Fall may relate to the degree of formal authority associated with an administrative role. Students may naturally give administrators more respect than they would give teachers or part-time staff. Students may also pick up on and mimic the different manner, with which the adults at recess may regard this administrator. Additionally, students may respond to administrators differently for reasons indirectly related to their positions as administrators. For example, administrators may be older on average than teachers and other staff, which may contribute to students responding more readily to their direction and intervention.

While the Adult Behavior and Supervision factor did not differ significantly between the Admin Coach and Non-Admin Coach groups in the Fall, one of the four GRF items that comprise it did differ significantly between these groups: Adult Behavior. This Adult Behavior item reflects the percentage of adults at recess who model positive culture such as, language, inclusion, and conflict resolution. Of all the GRF items that compose the Adulting Engagement and Supervision factor (Adult Engagement; Adult Behavior; Adult Positioning; and Adult to

Student Ratio), this Adult Behavior item is the most strongly correlated with the Student Behaviors factor and each of the five GRF items that compose it. This suggests that the Admin Coach group's greater scores on Student Behavior may stem at least in part from greater modeling of positive culture by the adults at recess. Moreover, this underlines not only the relevance of positive adult modeling on student behaviors at recess, but also a potential advantage in engaging leadership in eliciting such adult modeling.

The one GRF measure, for which the Classroom Teacher Coach group had significantly different scores than the Non-Classroom Teacher Coach group was the Transition from Recess. This transition at the end of recess was significantly more organized at those schools, which had a classroom teacher as their RC. A classroom teacher's perspective may be especially relevant to the transition from recess since it is also a transition to class, and since most classes typically take place in classrooms. Furthermore, a classroom teacher is likely uniquely motivated to improve this transition because they are likely often on the receiving end of it. Not only do classroom teachers receive students from recess, but they receive them into relatively small indoor spaces. The experiences of a part-time staff member or even a full-time P.E. teacher, who do not directly engage with students in this classroom setting following recess are likely less impacted by the transition being chaotic.

The RC's responsibilities as a classroom teacher may, in some cases, mean that they aren't able to focus on facilitating this transition. However, in the case that this RC has a class of their own to receive off the playground following recess, there is a visible need for other recess team members to step up and support the transition from recess. Moreover, a teacher, who has a role on the recess team, such as that of a RC, likely has a working relationship with the other recess team members, making them well positioned to direct those efforts. At schools where

classroom teachers are not included on the recess team, engaging their perspective may positively impact this GRF measure. Furthermore, building rapport between classroom teachers and members of the recess team may be important to doing this effectively.

Additionally, it is essential that teachers who have classes to receive following recess are adequately supported with the recess-end of this transition. This includes P.E. teachers who have teaching responsibilities following recess. The need to support a RC, who is a P.E. teacher during this transition may not be as visible due to the fact that P.E. teachers often receive their classes outside on what is also the recess yard or playground. The teacher who is physically present on the playground during the transition from recess, may be misunderstood by other team members as being available to support with this transition, despite the fact that the individual has a class to receive. Therefore, it is important that leadership take into account the potential need to clarify responsibilities and properly support this P.E. teacher. A lack of support for P.E. teacher RCs may explain at least partially their significantly lower scores on the Transition from Recess Measure.

The P.E. Coach group scored significantly lower than the Non-P.E. Coach group on the Student Behavior factor as well as on four of the five individual GRF measures that compose it. There are a few potential factors that may help to explain this difference. Firstly, greater resistance to Playworks culture by P.E. Teachers may play a role. While some P.E. teachers may be great advocates for Playworks, others may not see the value of playing just to play. Of all the adults on a campus, the P.E. teacher is the individual most directly associated with play and games for a different purpose. Furthermore, Playworks staff coming in and suggesting changes to the way this individual operates at recess may be perceived as threatening to their values and skills as a P.E. teacher.

A lower level of support from administration is another possible explanation. After removing the Admin Coach group ($n = 15$) from the dataset, Crosstabulation revealed that the P.E. Coach group is significantly less likely ($p < 0.05$) than the non-P.E. Coach group to have an administrator on the recess team in some capacity. This crosstabulation analysis was not significant when comparing the Classroom Teacher Coach and Non-Classroom Teacher Coach groups. Lower administrator participation within this group may reflect an assumption that responsibility for recess is a natural extension of a P.E. teacher's job and that because of this P.E. teachers should require less support as Recess Coaches. In light of this possible assumption, Playworks staff may do well to emphasize the differences between P.E. and Playworks programming when entering into a school partnership. Additionally, it may also be helpful for Playworks Site Coordinators to be prepared to recognize and tactfully address misconceptions stemming from this assumption. Alternatively, lower administrator participation may reflect that administrations, which are less supportive of program implementation, may be more likely to choose P.E. teachers as the RC.

Limitations

One limitation of this evaluation is the use of number of survey participants as the measure of recess team size. Each school's Playworks Site Coordinator was responsible for providing Playworks Evaluation with the email addresses of those individuals who they considered to be members of the school's recess team. The number of email addresses submitted varied from region to region. In fact, crosstabulation revealed that the distribution of schools by the number of individuals who ultimately participated in the survey (team size) varied significantly across regions.

Another limitation of this evaluation is the use of Recess Coach time on the recess team relative to length of employment as the measure of the integration of RC responsibilities into this individual's role at the school. Without seeing job descriptions, it is difficult to ascertain to what degree recess responsibilities were an integral part of their employment understanding. Furthermore, other factors beyond integration of the role into this individual's job may be at play. For example, individuals who have been running recess one way for a long time, may in fact be more resistant to Playworks culture. Additionally, both research questions two and three characterize schools based solely on their Recess Coaches, who although an important player on the recess team are just that, one member on a team of people. Lastly, the small size of the data set also is a limitation of this study.

Implications for Future Projects

Because administrators can participate on the recess team in capacities other than that of RC, future projects might evaluate the impact of an administrator's participation on the recess team in any capacity or in another specific role such as Recess Manager. Additionally, survey questions that more directly reflect the degree to which, the RC role is integrated into an individual's responsibilities at the school may allow for a more meaningful evaluation of this factor's impact on recess quality.

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Appendix A – Relevant Items from the GRF Rubric

Scale	Item	1	2	3	4
Student Behaviors	Game initiation	Hardly any games are initiated by students	A few games are initiated by students	Some games are initiated by students	Almost all games are initiated by students
	Physical altercations	There were several physical altercations between students.	There were some physical altercations between students.	There were few physical altercations between students.	There were no physical altercations between students.
	Student communication	Hardly any communication (verbal or nonverbal) between students is positive and encouraging toward each other.	Very little communication (verbal or nonverbal) between students is positive and encouraging toward each other.	Most of the communication (verbal or nonverbal) between students is positive and is encouraging toward each other.	Almost all communication (verbal or nonverbal) between students is positive and encouraging toward each other.
	Rules: Students	There were several disagreements about rules between students that were disruptive to play.	There were some disagreements about rules between students that were disruptive to play.	There were few disagreements about rules between students that were disruptive to play.	There were no disagreements about rules between students that were disruptive to play.

Scale	Item	1	2	3	4
	Conflict resolution	Students demonstrate hardly any strategies for resolving conflicts on their own.	Students demonstrate a few strategies for resolving conflicts on their own, but a lot of adult support was needed.	Students demonstrate adequate strategies for resolving conflicts on their own, but some adult support was needed.	Students demonstrate strategies to resolve their conflict without adult intervention, or there was no evident conflict on the playground.
Adult engagement and supervision	Adult-to-student ratio	The adult-to-student ratio is more than 75:1.	The adult-to-student ratio is between 51:1 and 74:1.	The adult-to-student ratio is approximately 35:1 to 50:1.	The adult-to-student ratio is less than 35:1.
	Adult behavior	Hardly any adults model positive culture (e.g., positive language, getting students involved, supporting conflict resolution skills).	A few adults model positive culture (e.g., positive language, getting students involved, supporting conflict resolution skills).	Many adults model positive culture (e.g., positive language, getting students involved, supporting conflict resolution skills).	Almost all adults model positive culture (e.g., positive language, getting students involved, supporting conflict resolution skills).

Scale	Item	1	2	3	4
	Adult positioning	Hardly any of the supervising adults are strategically positioned to view students in the recess play space (i.e., adults are all huddled together).	Some of the supervising adults are strategically positioned to view students in the recess play space, but many students are unsupervised.	Many of the supervising adults are strategically positioned to view students in the recess play space, but some students are unsupervised.	Almost all the supervising adults are strategically positioned to view students in the recess play space.
	Adult engagement	Hardly any adults are playing games or engaged with students.	A few adults are playing games and/or are engaged with students.	Some adults are playing games and/or are engaged with students.	Almost all adults are playing games and engaged with students.
Transitions	Transitions to recess	Hardly any transitions to recess from the classroom are organized and smooth.	Few transitions to recess from the classroom are organized and smooth.	Most transitions to recess from the classroom are organized and smooth.	All transitions to recess from the classroom are organized and smooth.
	Transitions from recess	Hardly any transitions to the classroom from recess are organized and smooth.	Some transitions to the classroom from recess are organized and smooth.	Most transitions to the classroom from recess are organized and smooth.	All transitions to the classroom from recess are organized and smooth.
Scale	Item	1	2	3	4
	Physical activity	Hardly any students are involved in physically active play.	Few students are involved in physically active play.	Some students are involved in physically active play.	Almost all students are involved in physically active play.