# WHAT EFFECT DOES AN EXTRA-CURRICULUAR PHYSICAL ACTIVITIES PROGRAM HAVE ON THE BEHAVIORAL RATINGS AND ACADEMIC PERFORMANCE OF ADOLESCENT MALES IN A RESIDENTIAL SETTING?

by

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CERTIFICATION OF PROJECT WORK

We, the undersigned, certify that this project entitled, "What effect does an extra-curricular physical activities program have on the behavioral ratings and academic performance of adolescent males in a residential setting" by Kyle Yelich, Candidate for the Degree of Master of Science in Education, Curriculum and Instruction in Inclusive Education, is acceptable in form and content and demonstrates a satisfactory knowledge of the field covered by this project.

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**Abstract**

What effect does an extra-curricular physical activities program have on the behavioral ratings and academic performance of a small group of adjudicated youth in a rural residential school? That was the primary question addressed in this project. Four male adolescent residents of a Special Act School participated in an after-school program designed to engage them in formal physical exercises, organized games, and structured partner- and team-building activities. The students' school-related behavior was then monitored before, during, and after the program was initiated. Present findings indicated that there were slight but positive improvements in all four students' behavioral ratings and academic performance over time. Previous research has shown a positive correlation between student participation in organized physical activities and academic success, lower truancy rates, less consumption of unhealthy products, and fewer physical altercations. Implications for research and practice are offered.

## Introduction

What effects do extracurricular activities have on "at risk" students enrolled in a Special Act High School? The issue on hand is whether there are any links between how students perform in the classroom before, during, and after they participate in an extra-curricular physical activities program. This project focuses on a small group of students who were adjudicated to a facility as residents who typically have limited opportunities to engage in organized extra-curricular athletic activities. The topic is important because these students currently lack external pathways to vent energy, are not involved in community- or team-building exercises, and have few prior experiences in structured and organized physical environments.

An illustrative literature review suggests potential benefits and risks to extra-curricular programming. As a varsity football coach and teacher of students with emotional and learning disabilities, the investigator hypothesized that participation in organized and structured extra-curricular physical activities would do more to help than harm his students. Student-athletes take away many important "lessons" from an athletic field that includes teamwork, self-control, responsibility, safety, and goal-setting. According to Lipscomb (2007), students translate team ideals and problem-solving skills to the classroom in the form of cooperation with faculty and peers and a higher determination toward accomplishment.

## Literature Review

Thus far, many pieces of literature have provided interesting and often conflicting information with regards to this subject. The literature has shown generally that participation in extra-curricular athletics maintains positive actions with regards to academics. Empirical studies have supported this idea with data suggesting that athletics, in fact, promote positive outcomes in

the classroom as a direct result of participating in extra-curricular athletic activities (Harrison & Narayan, 2003).

***Response to Extra-curricular Athletics***

Research has suggested a multitude of outcomes with regards to the impact of participation in athletics after school academically in students (Eide, 2001). Eide noted, for example, that students who participate in extra-curricular athletics are 3% less likely to drop out of school than students who do not participate. Moreover, if students remain in school and participate in extra-curricular athletics, their likelihood of graduation and attendance in higher education increases between 15% and 20%. Academic success in many of these studies focused on the correlation with student participation in after-school athletic sports. The primary measure of success was student-athletes' grade point averages (GPAs) compared to non-participating students. What emerged from these studies was that students who participated actively on an athletic team earned higher GPAs, maintained better attendance, and interacted more positively with others in class. Participation in athletics was also measured directly with academic data collected by Landis (2005). This particular study compared grade point averages of 53,084 freshman and 29,353 seniors and found that student athletes had an average GPA of 2.86, while their non-athlete counterparts earned only a mean 1.96 GPA.

These results suggested further that students who are at risk for academic and/or behavioral failure may benefit from participation in similar extra-curricular physical activities. Many educators have argued that participation in athletics is an integral part of a *total* student in contemporary schools across the United States. Students who participate in athletics learn new physical skills, improve their general health, and enhance their interpersonal competence because

they must work collaborative with peers. Landis (2005) argued further that such programs can promote positive work habits that will benefit them and society in the future.

Given Landis' positive academic and behavioral outcomes, it is reasonable to assume that students who are currently at risk academically and behaviorally may benefit from participation in extra-curricular athletic activities. Unfortunately, many students at risk have limited opportunities for participation in extra-curricular activities because they are often academically ineligibility or have significant behavior-related issues. Researchers have shown, however, that there are many intrinsic and tangible positive effects that accrue to those who participate in after-school physical activities. Research suggests as well that there are potential negative aspects to athletic participation; these can include a superiority complex, poor sportsmanship, and even occasional bullying (Videon, 2002).

***Students at Risk***

The term "at risk" is assigned to students who are literally at risk for academic and/or behavioral failure. These students are more likely to receive low academic grades, be retained more often in grade level, referred to remedial or special education programs, and drop out of school. Students at risk have been identified as those who come from homes with single parents whose socio-economic status falls below the poverty line; students who exhibit negative behavior including violence in school, excessive unexcused absences (i.e., more than 30%), and generalized work refusal (Finn, 1997). Many of these students end up in a downward cycle whereby they fall behind, do less academic work, receive lower grades, and then do even less work. Unless this cycle is reversed students at risk have very limited chance at academic success.

These students are considered at risk because of their limited academic and behavioral competence. Many educators also identify students with severe emotional disturbances as

students “at risk” (Coalition of Special Act School Districts, 2011). Students with emotional disturbances are present in most schools nationwide, and they present both academic and behavioral challenges for educators. As such, they may be perfect targets for an extra-curricular physical activities program that provides them with new ways to curb inappropriate behavior and encourage and support more positive academic and interpersonal outcomes (Ewing, 2007).

One must ask, however, should students with disabilities like emotional disturbance be allowed to participate in extra-curricular physical activities? One might respond yes given that many students with IEPs are allowed to play sports with only local regulations to control their eligibility. There are no state mandates regarding academic achievement as a prerequisite for participation. Students with emotional disturbances, however, may be perceived much differently that their peers with learning disabilities. Studies have shown, for instance, that students who are emotionally disturbed are still capable of participating successfully in athletic activities. Jack and Johnson (1976) reported that children with emotional disturbances are quite capable of learning and actually need athletic activities to promote their overall development. The authors noted that children who are mentally and emotionally handicapped usually need individual attention and considerable emphasis on basic motor development, body movement, physical conditioning and confidence. They get all of these from successful and satisfying achievement in games, sports, and physical activities.

Physical activities provide students at risk with a chance to learn what it means to be team players who face common challenges with their peers. This notion is especially important for at risk youth because they often find themselves on the outside looking in; their academic and behavioral challenges prohibit them from engaging in such extra-curricular opportunities. Jack and Johnson (1976) concluded that extra-curricular physical activities provide students with

emotional disturbances direct opportunities to engage in good sportsmanship and receive positive recognition for doing so. Another study (Ebie, 2005) found that students who participated in extra-curricular athletics released physical energy in positive ways with peers alongside of them doing the same activities. These activities generate positive bonds among students and their peers, promote companionship, and provide a structured and supportive environment for students to express themselves in a physically-appropriate way. For students at risk, this might offer a physical release for them after troubling or tiresome days in school where they were not the center of positive attention (Ebie, 2005).

***Positive effects of extra-curricular athletic activities***

According to existing research, high school aged males are the majority of participants in extra-curricular athletics (Lipscomb, 2007). According to Lipscomb, men who do participate in these after-school athletics see a slight increase in GPAs in comparison to students who do not participate in sports afterschool. Miller (2005) argued further that it has been long standing knowledge that students participating in after-school sports have enjoyed higher academic success; Miller suggested that this equated with structured supervision and goal setting attributes that have been linked to the sports teachings and a positive attitude that was linked to achievement on the game field. To combat this general feeling of athletes enjoying better grades, additional research shows data that will contrast with the positive impact of sports. Male's academic achievement, for example, has showed no results either positive or negative (Fisher, Juszczak, & Friedman, 1996). In this study, no statistical benefits or harmful academic effects were found among those who did and did not participate in extra-curricular sports.

Ebie (20050 suggested that students participate in extra-curricular sports for four main reasons: (a) social/integrative, (b) kinesthetic, (c) self-esteem, and (d) self-efficacy. The author

detailed results that highlighted students' internal motivations for being a member of extra-curricular athletics. Ebie distributed questionnaires to 190 students, half of which were males. The response from the students totaled 160 responses, of which 79 were males. The male students explained through detailed responses that the main reasons for participation was social interaction with others who had like-minded goals. These males sought positive interactions with similarly-aged boys from their class or school who enjoyed the challenge of teamwork, putting forth effort towards a physical activity, and sharing time socially with peers (Ebie, 2005).

Male student-athletes have been measured in many ways for academic success, but the question remains whether or not they behave equally-well in class. This is an important question because if they engage in disruptive behavior in class, their teachers may ask coaches to prohibit them from participating in extra-curricular activities. The present study examines on a small scale if adolescent males who participate in extra-curricular physical activities program behave differently (according to teacher behavioral ratings) in class as a result of their participation. It was anticipated that pupils would behave more appropriately and as such receive higher behavioral ratings during and after they participated in the extra-curricular program.

Understanding healthy behavior is also essential for analyzing present outcome data. Healthy behaviors include participating in family and community activities such as social events, fund-raisers, volunteer activities, and memberships in social clubs. Harrison (2003), for example, noted that students who participated in extra-curricular athletic events had better diets and nutrition than their non-athletic peers. With every positive, however, there are also examples of male student-athletes engaging in negative and inappropriate behaviors. Harrison noted, for instance, other potentially negative and unhealthy behaviors such as truancy, injuries, increased physical altercations, more use of alcohol, drugs, and tobacco and vandalism.

Students in the aforementioned study included over 50,000 males and females in grades nine who were both athletes and non-athletes. Males comprised 49.3% of the students polled. In the study, Harrison and Narayan (2003) examined academic report cards, office referrals, truancy rates, as well as pupil responses to a questionnaire about tobacco, drug, and alcohol use. There were definite benefits among males in terms of homework completion. Athletic males, for example, completed three hours of homework weekly (38%), their non-athletic male counterparts completed homework only (29%) of the time. While the increase in homework completion does not guarantee success in the classroom, but it certainly does show a positive increase of participation in a healthy and positive way.

Another positive outcome reported by Harrison and Narayan (2003) was associated with truancy. Males who did not participate in extra-curricular athletic activities were truant more often (34% versus 23% of the time) than their athletic peers. Truancy in schools is certainly an area of concern for educators because if students are not in class, they cannot learn. Male student-athletes were over 10% less likely to be truant than their non-athletic male peers. Vandalism rates were also drastically lower among athletic males. Of polled students, for example, non-athletes vandalized at a rate of 44% while athletically involved males had only a 37% vandalism rate. Physical altercations also were reported at lower rates among athletes than non-athletes (45% versus 52%). Landis (2005) also found that student athletes received 10% fewer discipline referrals than their non-athletic peers.

Harrison and Narayan (2003) also examined male adolescents' use of tobacco, marijuana and alcohol. They found that athletically involved males were less likely to try or use tobacco and marijuana, but that they consumed more alcohol than non-athletic males. Tobacco and marijuana use among non-athletic males was 30% and 32%, while male athletes in season

reported use at only 18% and 23% respectively. Alcohol consumption, on the other hand, was slightly higher among athletes than their non-athletic peers (i.e., 53% versus 52%). Collectively, these data suggest that active participation in physical activities may drastically reduce a number of potentially unhealthy behaviors.

These data indicated further that students who are at risk of academic failure may derive a number of benefits from participation in extra-curricular physical activities. While one might not anticipate dramatic behavior changes, the evidence indicates that some benefits may accrue from such programming. Most research findings describe multiple potential benefits from extra-curricular athletic activities, although these findings typically did not examine the impact on students who were at risk for academic or behavioral failure. A study published in Australia by Colthart (1996), however, suggested that such benefits are possible with this population as well. Given Colthart's in-depth description of Australian students at risk, it is clear that they share many characteristics with their American peers. Both groups, for example, are truant from school, have increased drug and alcohol use and abuse, a history of criminal behavior, and frequent foster care placements (Colthart, 1996). It is logical to assume that similar benefits may accrue to at risk children in our own public schools.

This illustrative literature review did reveal, therefore, that there was a clear need for more research on the effects of extra-curricular physical activities on the behavioral and academic performance of students at risk for failure. While there were other articles on the effects of extra-curricular athletic activities on males of early high school age, the "at risk" segment of this population was highly underrepresented. Students who are at risk need a voice in the research literature. This study was designed to provide this initial voice.

The primary research question, therefore, was: What effects will participation in an extra-curricular physical activities program have on pupils' in class behavior and academic performance? More specifically, the present study examined the weekly behavioral ratings assigned to four target students before, during, and after they participated in the extra-curricular activities. In addition, program effects were examined through the use of students' academic grades over comparable time periods.

## Method

### *Participants and Settings*

Four, 8th through 10th grade male students enrolled in a New York State Special Act School in a rural area in Western New York participated in this study. All students were male, between 13 and 16 years old and of diverse ethnicity. Sixty-two percent of the students in the school were Caucasian, 25% were African-American, and the remaining students were described as mixed ethnicity. Half of the school population was formally identified as having special needs (i.e., Seriously Emotionally Disturbed and/or Learning Disabled) and had IEPs. Just over half of the students were residents at the Special Act School while the remainder commuted from distances up to a 35-mile radius. Most students were placed in the school via court order or through foster care placements. Placement reasons included truancy, criminal mischief, and/or substance abuse. Four target students were selected for behavior monitoring based upon high rates of discipline problems during initial "baseline" assessments and informed consent from themselves and their parents and/or guardians. All target students were males; two were African-American, one was Hispanic, and the other was Caucasian. Student behavior is closely monitored throughout the residential setting and curriculum. If pupils behave inappropriately on their units, they can be pulled from extra-curricular programs by unit staff. Students targeted for

intervention were also deemed to be in need of increased physical activity and adult and peer attention. Prior to this investigation, students had no formal outlet to release their energy, nor did they have a structured and supervised environment for team-building activities. This study provided both for target students and others involved in the program.

The study was conducted in a New York State Special Act School. According to the Coalition of Special Act School Districts (2011), special act facilities are "created by an act of the New York State legislature to provide transitional, intensive intervention to special student populations". Special act public school districts educate both day and residential students referred by medical and mental health professionals, parents, school districts (CSE referrals), and departments of social services (e.g., Administration of Children Services (ACS), Office of Children and Family Services (OCFS) and the Office of Mental Health (OMH).

As noted, about half of the school population is residential the other half is bused in daily from a range of 35 miles. The school has a total population of 95 students in grades 4 through 12. Average daily attendance was 81students per day (85%) for the last four years. There were approximately 16 students enrolled in 8$^{th}$ through 10$^{th}$ grades. Four target students at risk for academic and behavioral failure were selected from among this existing population. Elementary, middle and high school faculty are divided into "teams" who meet weekly about behavior and academic concerns. Teams consist of middle school teachers including social studies, math, science, English and Language Arts, foreign language, physical education, as well as guidance and behavior management counselors. The study was conducted in the school gym and attached workout weight rooms. The extra-curricular physical activities program was implemented twice per week for approximately 45 minute sessions. Each session consisted of a variety of activities

including: (a) stretching, (b) a series of physical exercises, (c) some organized games, and (d) partner- and team-building activities (see Appendix A & B).

***Dependent Variables***

The primary dependent variable was weekly and quarterly behavior ratings from the investigator's team-based ratings. Three separate types of behavioral ratings were provided: (a) ***Positive*** (P), (b) ***Negative*** (N), and (c) ***On-the-Line*** (O). These ratings are used by all teachers to rate pupil behavior in their respective settings. If students complete assigned work, participate actively in class, volunteer, and are respectful to adults and peers, then they are given positive evaluations by their teachers. Conversely, if they fail to complete academic assignments, engage in disruptive behavior (e.g., swearing, emotional outbursts, and overt non-compliance), sleep in class, and/or create safety problems towards themselves, peers, and/or staff, then they are assigned a negative rating. Finally, on-the-line ratings are assigned to students who complete work without causing distractions; however, they typically do not participate actively in class, offer assistance, or do anything "above and beyond" minimal behavioral expectations.

Daily behavioral ratings are completed for all pupils on a weekly basis and are monitored on the school's *daily tracker system*. The school's behavior rating scale contains 11 negative and positive behaviors that teachers assign based on pupils' performance in their settings (See Appendix B). Negative exemplars include low-self esteem, inconsiderate or disrespectful behavior toward self and/or others, lying, as well as drug and alcohol use. In contrast, positive behavioral ratings are assigned when pupils' display self-confidence, respectful behavior toward others, and show good self-control. Six data points are assigned per day per student for a total of 30 data points per week. At the end of each week, students' trackers are totaled to determine how many positive, on-the-line, and negative ratings were received per week. If students had 10

or more positives and no negative ratings, then they were given positive evaluations for the week. If five or more negative ratings were assigned, then the weekly evaluation was negative, irrespective of the number of positive ratings. If less than 10 positives and 5 negatives were given and most ratings were on-the-line, then overall ratings of O were assigned. Weekly behavioral data were collected prior to, during, and after the implementation of the after-school physical education program.

Weekly behavioral ratings were then aggregated across the four target students and were posted in graphic form in terms of the total number of positive, negative, and on-the-line weekly evaluations. In addition, individual bar graphs were constructed for each target student to more closely examine the impact of the after-school physical education program on their individual behavioral ratings.

A secondary dependent outcome, academic performance, was examined by reviewing target students' report card grades from the first and second quarters, as well as the five-week reports in between each report card. Students' academic work was graded and averaged weekly by teachers as part of this study. The investigator collected weekly updated averages every Friday. These data reflected the completion of daily and weekly work, as well as quiz, test, and/or project grades.

***Independent Variable***

The intervention was an extra-curricular, physical education program that was offered twice per week for approximately 45-minute per sessions over a 10-week intervention period. The program included three primary components: (a) a variety of physical exercises such as sit ups, push-ups, and pull-ups, (b) organized games and drills including basketball, weightlifting, running, volleyball, and military style physical training, and (c) trust- and team-building

activities that emphasized good sportsmanship and the development of positive interactions among students, peers, and staff. Typically, students would begin sessions with brief partner- or team-building activities which would be followed by about five minutes of daily warm-up and stretching activities. After warming up and stretching, students' alternated working on an exercise routine followed by organized games or organized games followed by exercises. Each session ended with about 5-minute, cool-down periods. Sessions were led by the investigator who also served as physical education teacher and sports coach in another educational setting.

The primary intent of the after-school physical education program was to allow students to engage in some socially-sanctioned and organized physical activities to use up excess energy, improve their physical conditioning, and hopefully improve their sports-related competence. In addition, it was anticipated that the partner- and team-building activities would encourage and support positive social interactions among pupils and staff; a much needed educational outcome for these particular pupils.

***Experimental Design and Procedures***

The present study used a data-based, case study methodology to assess the impact of the extra-curricular physical education program on pupils' ongoing academic and behavioral ratings (Kennedy, 2005). As noted, it was anticipated that students who performed poorly during initial baseline assessments (i.e., prior to the start of the after-school program) would show improved behavioral and academic performance during and after participation in the physical education program. Initially, behavior rating data were reviewed on all $8^{th}$ through $10^{th}$ grade students. Then four target students with consistently poor behavioral ratings were selected for ongoing progress monitoring. After their initial baseline ratings stabilized, the after-school physical

education program was started and the investigator continued to monitor their weekly behavior ratings and academic performance throughout the course of the study.

## Results

Behavioral ratings for all four target students were aggregated across baseline (before program) and intervention (during program) phases and can be seen in Figure 1. As depicted, the four target students displayed high rates of inappropriate behavior and as such received primarily negative weekly evaluations from their teachers. During the first three baseline weeks, for example, target students received a total of seven negative, five on-the-line and zero positive weekly behavioral ratings. None of the four target students received a positive behavioral rating from their respective teachers. When the extra-curricular, physical education program was initiated there were slight yet noticeable improvements in students' overall behavioral ratings. Over the 8-week intervention phase, for example, target students received a total of 12 negative, 11 on-the-line, and nine positive evaluations.

Visual inspection of Figure 1 also suggested that there was an initial decelerating trend in the frequency of negative behavioral ratings after the extra-curricular program was introduced. This was followed, however, with more variability in student performance. On-the-line behavioral ratings decreased to zero and one during the first two weeks of intervention and then increased to two or three pupils for the next month. It appears that as negative behavioral ratings decreased they were supplanted by increases in on-the-line evaluations. It should also be noted that no on-the-line ratings were received during the final two weeks of intervention. Effects of the extra-curricular physical education program on pupils' positive evaluations were also clearly evident. No target students received a positive behavioral evaluation during baseline assessments. However, there were a total of nine positive behavioral ratings over the 8-week

intervention phase. Moreover, a positive trend in positive evaluations appeared to emerge toward the end of the extra-curricular program. In fact, during the final intervention week, all four target students earned positive evaluations and two students were nominated for "Student of the Week" recognition during intervention phases.

Aggregated data can often cloud the effects of an intervention on individual pupil performance. Therefore, individual bar graphs were created for the four target students. Data relevant to Student #1's performance can be seen in Figure 2. As shown, Student #1 had all on-the-line weekly behavioral ratings during the first three weeks. His performance deteriorated somewhat over subsequent weeks as evidenced by an increase in negative ratings (Weeks # 4, 5, 8, & 10). It should be noted, however, that Student#1 ended on a high note by receiving his first positive evaluation during the final assessment. The effects of the after-school program on Student #2's behavioral ratings are depicted in Figure 3. As seen, Student #2 received one negative (blue) and two on-the-line (red) ratings during the first three weeks of the study. There was an immediate and noticeable increase in his favorable evaluations, however, over the subsequent seven weeks. In fact, this particular student earned five positive (green) behavioral ratings over this time period, and he was selected as the Student of the Week while the intervention was in effect.

Student #3 presented a number of behavioral challenges throughout the course of the project. As depicted in Figure 4, this young man received negative (blue) weekly behavioral ratings over the first seven weeks of the study. His behavioral ratings did begin to improve, however, during weeks 8 and 9 when he received on-the-line evaluations from his teachers. Student #3 earned two consecutive positive behavioral ratings during the final two weeks of the project. As such, his overall performance showed a slow accelerating trend in his appropriate

behavior. Data related to the impact of the after-school physical education program on the fourth target students can be seen in Figure 5. As shown, Student #4 also presented considerable behavioral challenges throughout the project. During the first four weeks, for instance, he received negative weekly behavioral ratings. His behavior improved slightly over the next three weeks when he earned on-the-line evaluations, however, his ratings dropped once again to negative over the following three weeks. On an optimistic note, Student #4 received his first positive weekly behavioral rating during the final week of intervention and he was also selected as the Student of the Week by his teachers.

The effects of the after-school physical education program on target students' academic performance can be seen in Table 1. As shown, three types of grades were collected on target subjects: (a) third-quarter mid-term, (b) third-quarter final and (c) fourth-quarter mid-term. Final grades for the fourth quarter were not available at the time that the study was completed. When the study began, the four target students had a combined 3$^{rd}$ quarter average of 72% with a range of 55% (Student #3) to 88% (Student #2). At the end of the 3$^{rd}$ quarter, all four students had increased to varying degree. Their overall average was 80% which was about 8% higher than their mid-term grades; Student #1 showed the most academic gain (65% to 79%) and Student #4 showed the least growth (78% to 80%). Finally, all four target students earned higher mid-term grades during the 4$^{th}$ quarter than they had during the previous quarter. Most noteworthy was the significant improvements that Student #3 (3$^{rd}$ quarter mid-term = 55% versus 4$^{th}$ quarter mid-term = 80%). Student #4 also showed an accelerating trend in his academic performance across the three independent assessments.

## Discussion

Present findings indicated that that the extra-curricular physical activities program had slight but positive effects on the behavioral and academic performance of four adolescents attending a residential Special Act School in Western New York. In general, students received more favorable weekly behavioral ratings over the course of the 8-week intervention program. In fact, by the final week all four students received positive weekly behavioral ratings from their classroom teachers. This stood in stark contrast to their ratings during the first three weeks when none of the students received any positive behavioral evaluations. A closer examination of individual data patterns suggested that the program had the most beneficial effects on Student #2 who earned five positive weekly behavior ratings. Student #2 also had the highest academic average and showed a steady rate of progress over the course of the investigation. The extra-curricular program also seemed to have progressively positive effects on Student #3's academic and behavioral performance. As noted, his behavioral ratings gradually improved from negative to on-the-line and finally to positive. In addition, he showed the most noticeable academic gains over the three academic assessments. Finally, the after-school physical activities program appeared to have mixed effects on the other two target students. Although they also ended the program with positive evaluations, there was much more variability in their weekly behavioral ratings. Both students did show adequate academic gains during the study.

While the current findings were not overwhelmingly positive, they did suggest that adolescents enrolled in a residential program for adjudicated youth can reap some benefits from increased physical activities after-school, as well as participation in organized games and team-building activities. Most of these young men have had long histories of dysfunctional relationships with adults and peers and limited opportunities to engage in organized physical

activities as part of their school programs. In general, students seemed to enjoy themselves. They were very responsive to the investigator's instruction and they often had smiles on their faces while exercising and playing games with their peers. Obviously, they will need considerably more opportunities to engage in similar activities if they are to improve their overall interpersonal performance. These extra-curricular activities may be a good place to begin.

The current findings have a number of implications for research and practice. First, the extra-curricular program may be a promising instructional approach for promoting pupil health and interpersonal development in an efficient and socially acceptable manner. The investigator hopes to include a similar program in the future for other students with challenging behavior. Second, the data suggested that it may be possible to improve pupils' in class behavior through the use of "out-of-class" experiences. It's likely that some of the beneficial effects of partner- and team-building carried over to student interactions at other times. Second, extra-curricular physical activities were conducted with a minimal number of behavioral incidents. Although initially all of the pupils had negative behavior ratings, these adverse behaviors did not carry over to the extra-curricular program. In the beginning, the intent was to include both boys and girls in the program. However, given the students' existing behavioral issues, administration recommended against such arrangements. A third possible implication is that the extra-curricular physical activities program may serve as a potential intervention for other students with behavioral challenges. More rigorous research designs should be used, however, to isolate the potential contributions of program components.

Fourth, the after-school physical activities program may also provide teachers with more opportunities to collect critical assessment information and provide individualized feedback to individual students. When students become and stay actively engaged in game-like activities,

then their instructors have increased opportunities to monitor their engagement and performance and provide positive and corrective feedback as needed. Finally, since the extra-curricular physical activities often required pupils to work and play *collaboratively* with peers they may have improved pupils' interpersonal interactions. In general, students seemed to enjoy having partners and being on little teams and groups. It's quite possible, therefore, that similar physical activities can also be used to improve interpersonal relationships among students while also promoting healthy life styles.

While the present findings are encouraging, there are a number of issues that may limit generalizations at this time. First, the study was limited by a small sample size that was taken from one geographic location and from one age group (i.e., adolescents). As such, it is not appropriate to generalize the current findings to older or younger children, or to those living in suburban and/or urban school districts, and/or to other non-academic activities. Future research should include larger sample sizes from more representative geographic locations and from different age and grade levels. Another potential limitation was the small number of data points collected under each instructional condition. While three baseline data points on pupil performance is a good start, it would be interesting to see if similar data patterns emerged over long time periods. Moreover, the benefits of the extra-curricular physical activities program appeared to emerge later on in the program. It's quite possible that additional benefits would accrue if the program was in effect for a larger portion of the school year. Would students be healthier and have better interpersonal relationships if the extra-curricular program was a regular part of the school day? Would students become "bored" with the after-school program over time? These and other questions can only be answered with additional data points and longer intervention intervals.

A third potential limitation involved the use of aggregated weekly behavioral ratings as a primary outcome measure. It's quite possible that daily behavior ratings or at least twice weekly would provide more sensitive measures of intervention effects. Moreover, the school's criteria for positive, on-the-line, and negative weekly evaluations appeared to be quite stringent. It's quite possible that if criteria were shifted to allow more frequent reinforcement for students, then even greater behavioral changes might be achieved. Fourth, the present study did not collect inter-rater reliability data on the dependent measures, nor did it assess the fidelity with which the extra-curricular, physical activities program was implemented. As such, caution should be used when interpreting these findings since one cannot conclude that outcome data were collected in a reliable manner. Similarly, it cannot be assumed that the intervention program was implemented as intended. Future research must include both inter-rater reliability and fidelity assessments. Finally, present findings are limited in that they only assessed small facets of the school's intended learning outcomes. While weekly behavior ratings and mid-term and final academic averages are important pupil outcomes, there are other important outcomes (e.g., improved interpersonal relationships, increased attendance, and decrease interactions with the law) that should be addressed in future research.

In conclusion, it appears that an extra-curricular, physical activities program can produce slight but noticeable improvements in adjudicated youths' weekly behavioral ratings and their overall academic performance. Although intervention effects were variable across the four target students, all of them benefitted to some degree over their prior school performance. As such the program or some facsimile may provide an appealing instructional alternative for teachers who are looking to improve pupil engagement, physical activity levels, and enjoyment in class. Obviously, much more work must be done on the potential uses of the extra-curricular physical

activities program. Present findings suggest that this may be a potential productive research agenda.

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Figure 1 shows the frequency of negative (blue), on-the-line (red), and positive (green) weekly behavioral ratings across baseline and intervention phases.

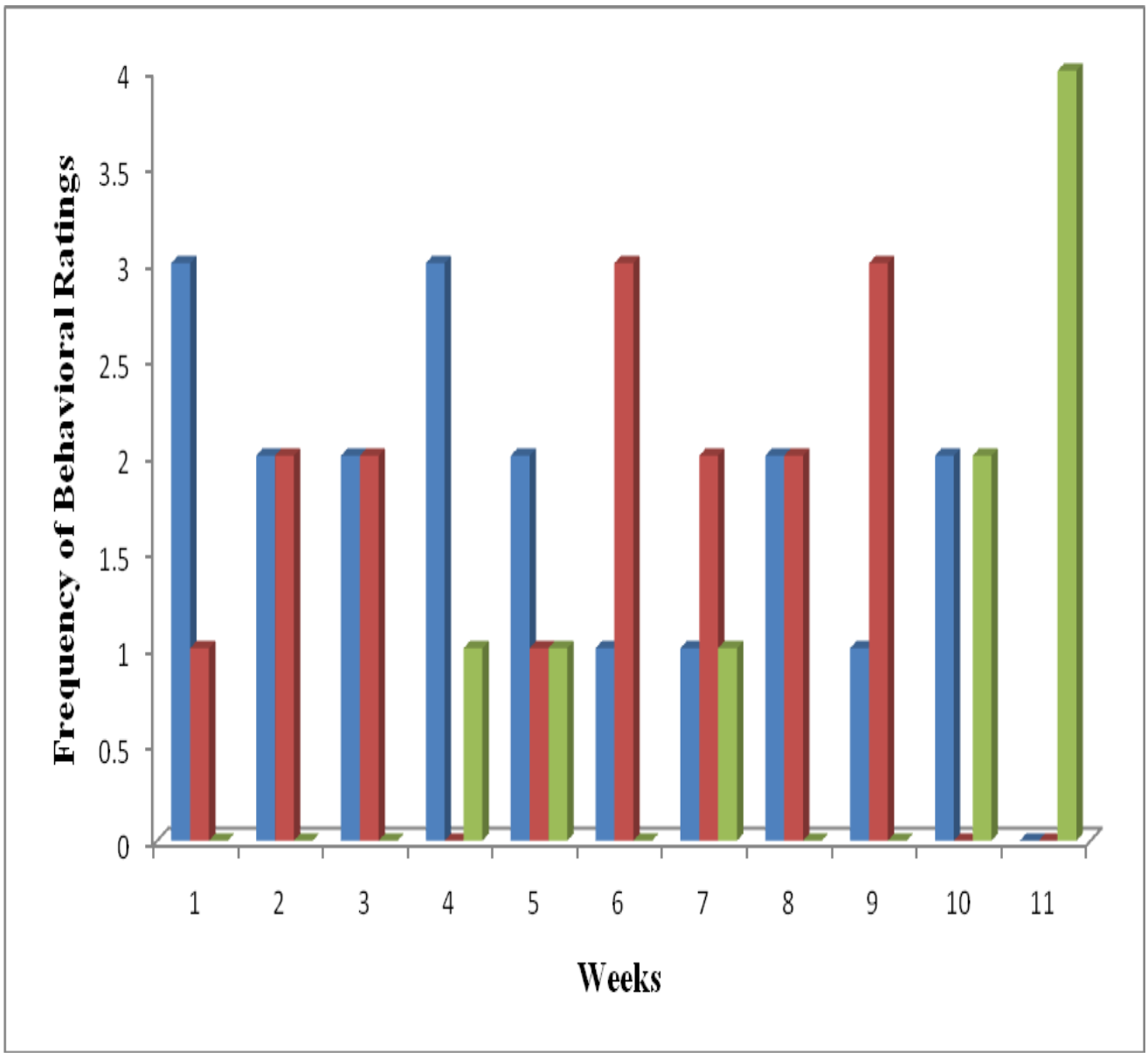

Figure 2 shows the frequency of negative (blue), on-the-line (red), and positive (green) weekly behavioral ratings for Student #1 across baseline and intervention phases.

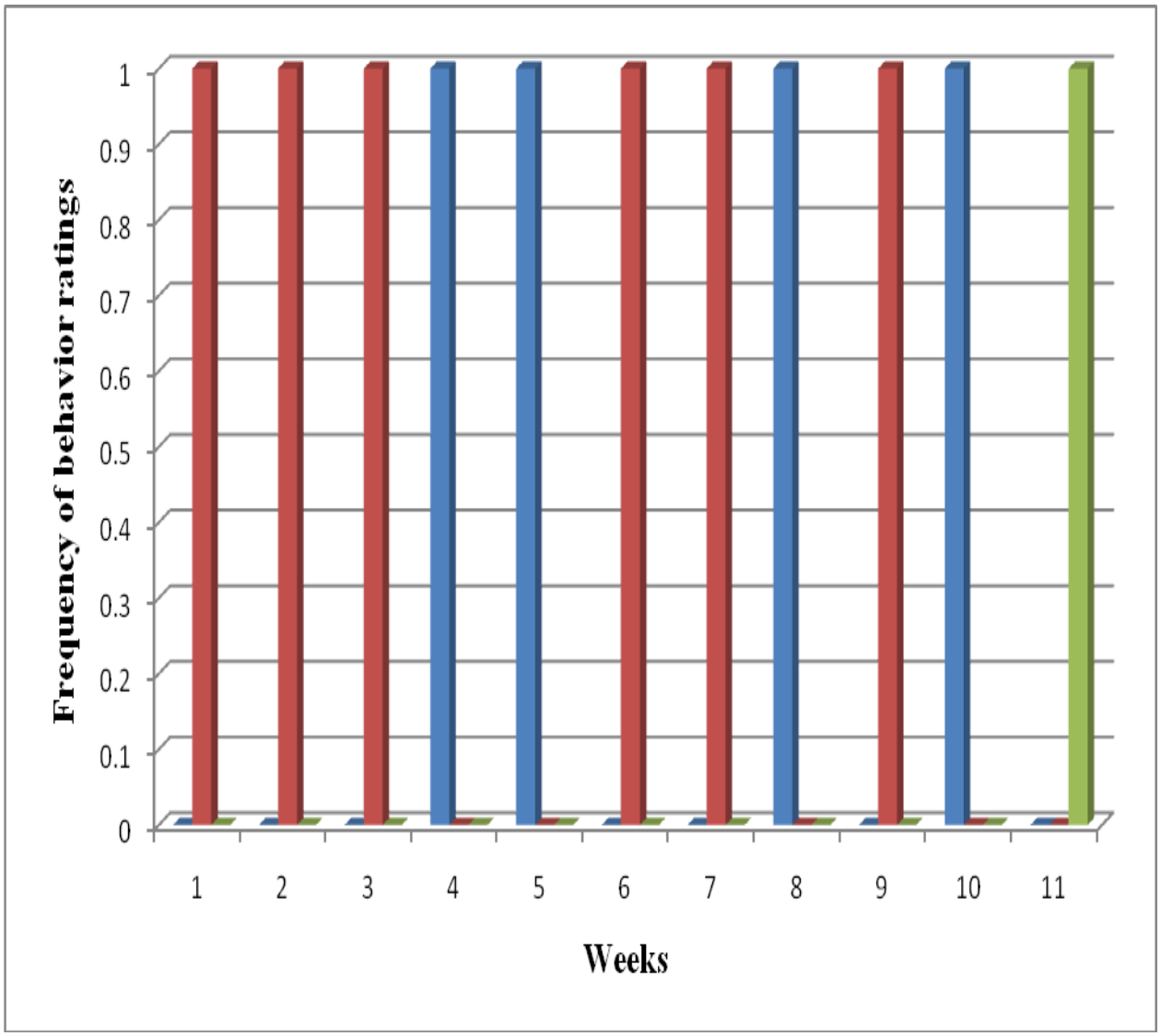

Figure 3 shows the frequency of negative (blue), on-the-line (red), and positive (green) weekly behavioral ratings for Student #2 across baseline and intervention phases.

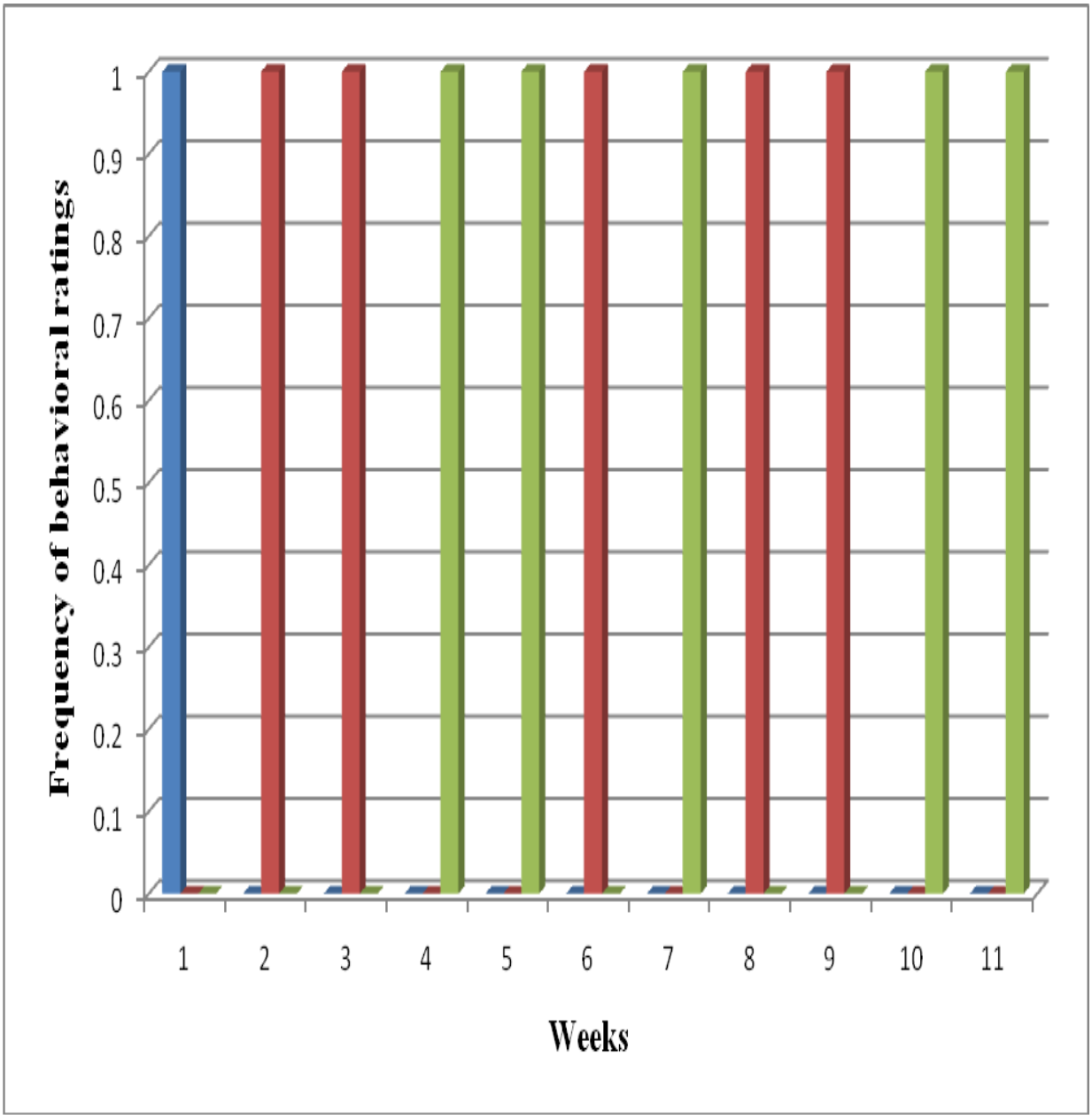

Figure 4 shows the frequency of negative (blue), on-the-line (red), and positive (green) weekly behavioral ratings for Student #3 across baseline and intervention phases.

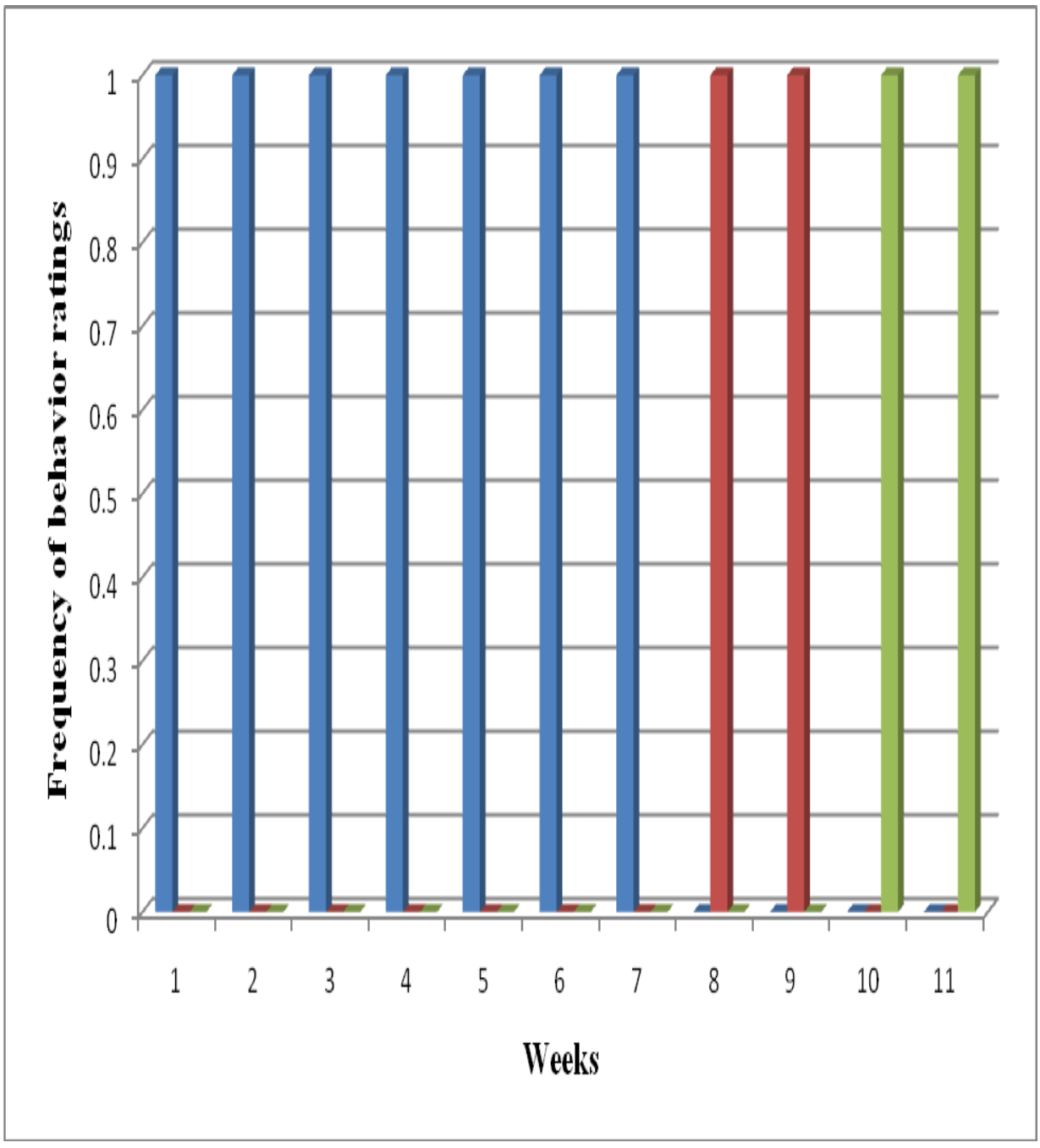

Figure 5 shows the frequency of negative (blue), on-the-line (red), and positive (green) weekly behavioral ratings for Student #4 across baseline and intervention phases.

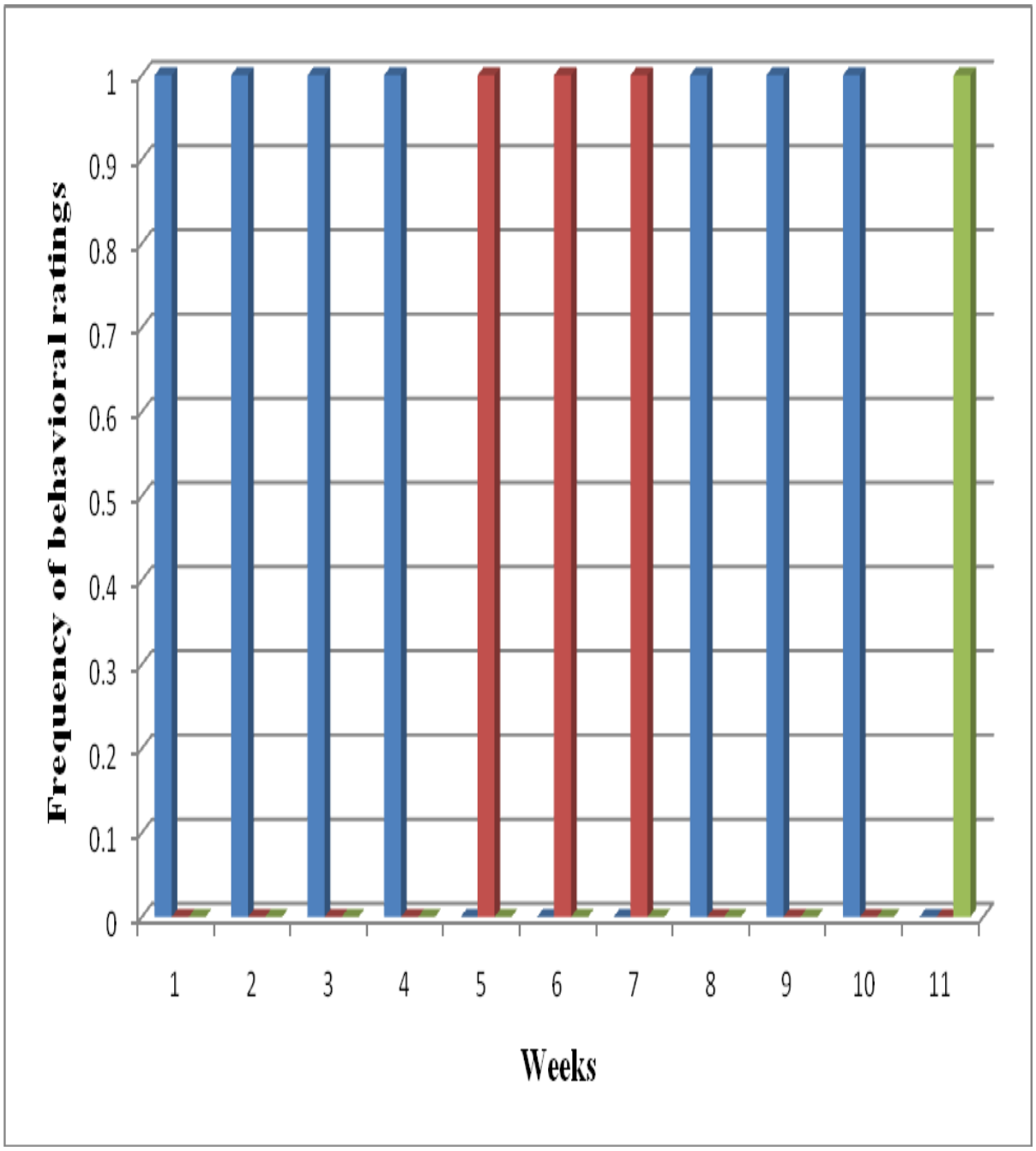

Table 1. Target students' academic grades across baseline and intervention phases.

| | **Report Card Averages** | | |
|---|---|---|---|
| **Students** | **3rd Quarter Mid-Term** | **3rd Quarter Final** | **4th Quarter Mid-Term** |
| 1 | 65% | 79% | 75% |
| 2 | 88% | 92% | 88% |
| 3 | 55% | 67% | 80% |
| 4 | 78% | 80% | 81% |
| **Averages** | **72%** | **80%** | **81%** |

## Appendix A

## Daily Behavioral Rating Form

**Student Name:** **Week of:_____**

**Force Field Rating: _____** **Status: R - P - NP - TWH- TWP**

| **NEGATIVE BEHAVIORS** | **POSITIVE BEHAVIORS** |
|---|---|
| N1. low self-image | P1. (self-esteem) believes in self, solves problems, able to help others |
| N2. inconsiderate of others | P2. (caring) shows concern for others; no put-downs or paybacks; tries to help others |
| N3. inconsiderate of self | P3. (healthy decision making) knows one's strengths & needs; has self-respect |
| N4. authority problems | P4. (respects authority) able to accept feedback & follow direction from authority |
| N5. misleads others | P5. (truthful) tells full story: takes ownership; doesn't con, front or manipulate |
| N6. easily misled | P6. (thinks for self) doesn't let anyone misuse him; stands up for self; seeks positive peers |
| N7. aggravates others | P7. (helps others) gets along with & respects others; doesn't start trouble |
| N8. easily angered | P8. (self control) is patient: controls temper; handles criticism; doesn't retaliate |
| N9. stealing | P9. (no stealing) keeps hands off of others' things; sees stealing as hurting someone |

| | |
|---|---|
| N10. drug & alcohol problem | P10. (substance free) finds positive ways to cope; doesn't harm self or others; seeks help |
| N11. lying | P11. (honesty) wants to be trusted; faces mistakes; tells truth; takes ownership & responsibility |

## Appendix B

### Tentative Schedule of Activities and Timelines

**Wednesday Workouts**: 5 minute group-guided stretching; 5 minute warm-up running and conditioning; and 30 minutes of game/scrimmage in basketball, kickball, and/or volleyball. These games rotated one game or activity per week in a three-week cycle. Sessions concluded with a 5-minute, cool-down stretching cycle.

**Friday Workouts**: 5-minute group-guided stretching; 5-minute warm-up running and conditioning; and 30-minutes of weight training in school weight room. This concluded with a 5-minute, cool-down stretching cycle.

**Exercises being conducted**: Friday weight training involved supervised upper body workouts including: (a) bench press, (b) arm curls, (c) triceps extensions, (d) lateral pull-downs, (e) push-ups, and (f) pull-ups with three sets of 10 exercises each. Leg training consisted of standing squat presses, seated leg presses, leg extensions, and leg curls and lunges. All exercises consisted of three sets of 10 exercises each.