

Class-Wide Function-Related Intervention Teams (CW-FIT): Single-Case Design Appendix

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This appendix provides additional characteristics of the studies of *Class-Wide Function-Related Intervention Teams (CW-FIT)* that meet WWC single-case design standards, including six studies that contribute to the findings in the [CW-FIT intervention report](#) and six studies that do not contribute to the findings because the WWC could not calculate a design-comparable effect size for any of the outcomes. Table 4 of the [CW-FIT intervention report](#) provides the design-comparable effect sizes for the six studies that contribute to the findings.

As described in the version 4.1 [Procedures and Standards Handbooks](#), a design-comparable effect size can be computed for a single-case design study that has three or more cases. This includes, for example, multiple baseline designs and reversal-withdrawal designs across three or more classrooms, students, or teachers. For some single-case studies, such as those with just one reversal-withdrawal design for one classroom or teacher, the WWC cannot compute a design-comparable effect size. Additionally, the WWC can calculate a design-comparable effect size for only certain cluster-level outcomes. These include outcomes that are aggregated across individuals for all students in the cluster. The WWC cannot calculate a design-comparable effect size based on (1) small groups of students within the cluster instead of individual students or (2) scans of the cluster without a fixed method for individually observing each student in the cluster. The version 4.1 Procedures Handbook does not outline procedures for calculating design-comparable effect sizes for these types of cluster outcomes. If the WWC cannot calculate a design-comparable effect size for at least one outcome in a single-case design study, the study’s findings do not contribute to the main findings in the intervention report.

This appendix briefly describes the findings from all 12 single-case design studies, beginning with the six studies that contribute to the findings in the [CW-FIT intervention report](#).

Appendix Table 1. Characteristics of the six studies of *Class-Wide Function-Related Intervention Teams (CW-FIT)* that meet WWC single-case design standards and contribute to the intervention report

Study citation	Caldarella, P., Wills, H. P., Anderson, D. A., & Williams, L. (2019). Managing student behavior in the middle grades using Class-Wide Function-Related Intervention Teams . <i>RMLE Online</i> , 42(7), 1–15. https://eric.ed.gov/?id=EJ1226018
What was the study design?	The study used reversal-withdrawal designs to measure the effectiveness of <i>CW-FIT</i> on three outcomes in the student behavior domain—class-level on-task behavior, focal student on-task behavior, and focal student disruptive behavior—and on one outcome in the teacher practice domain—praise-to-reprimand ratios.
What was the WWC study rating?	The study Meets WWC Single-Case Design Standards Without Reservations because the single-case designs for 11 focal students, nine classrooms, and nine teachers provide at least three attempts to demonstrate an intervention effect at three different points in time and have at least five data points in each phase. The single-case designs for nine focal students Meet WWC Single-Case Design Standards With Reservations because they have at least three data points per phase. The single-case designs for three additional focal students Do Not Meet WWC Single-Case Design Standards because they do not have at least three attempts to demonstrate an intervention effect at three different points in time or have fewer than three data points in at least one phase; the WWC’s design-comparable effect size calculations for this study do not include these three students.
Where did the study occur?	The study took place in nine classrooms in five public, Title I schools located in urban areas of the Midwest and western United States.
Who participated in the study?	Participants included 20 focal students in grades 6 through 9. Across the focal students, 55% were White, 30% were Black, and 15% were Hispanic or Latino. Seventy percent of the focal students were male. All 20 focal students were identified by their teachers as at risk for emotional and behavioral disorders based on their externalizing or internalizing behavior. Across all five schools, approximately 63% of students were eligible for free or reduced-price lunch. The study also provided class-level findings across 234 students in the nine classrooms and teacher-level findings for nine teachers.

How was <i>CW-FIT</i> implemented?	<i>CW-FIT</i> was implemented during the class period teachers identified as having the most challenging student behavior and included periods with instruction in social studies, language arts, math, and science. Prior to implementing <i>CW-FIT</i> , teachers shared <i>CW-FIT</i> target skills and classroom expectations with students during 10-minute lessons, which included following directions, listening to the teacher, staying on task, collaborating with peers, and showing respect to others. Teachers also posted the expectations in their classrooms so all students could see them. Teachers then organized students into teams of three to five students and explained that teams could earn points and rewards if they demonstrated the expected behaviors. Teachers told students the daily point goal, observed teams in 5-minute intervals, and awarded points to teams that demonstrated expected behaviors during the interval. They praised good behavior and reminded the teams that did not earn points about the expectations for behavior. The teachers tallied points at the end of each class period, and teams that met the daily point goal received a group reward, such as school supplies, snacks, or free time.
How was the baseline condition implemented?	The teachers instructed their students as they normally would.
What were the study findings?	<p>The WWC calculated a design-comparable effect size for student on-task and disruptive behavior across 20 focal students. During <i>CW-FIT</i> sessions, students had higher levels of on-task behavior and lower levels of disruptive behavior compared to sessions without <i>CW-FIT</i>.</p> <p>The WWC could not calculate a design-comparable effect size for class-level on-task behavior because the single-case design includes a cluster-level outcome based on small groups of students, clustered within classrooms. The WWC could not calculate a design-comparable effect size for teacher praise-to-reprimand ratios because session-by-session data were not provided. The authors reported <i>CW-FIT</i> was associated with improvements in class-level on-task behavior and teacher praise-to-reprimand ratios.</p>
Study citation	Jolstead, K. A., Caldarella, P., Hansen, B., Korth, B. B., Williams, L., & Kamps, D. (2017). Implementing positive behavior support in preschools: An exploratory study of <i>CW-FIT</i> tier 1. <i>Journal of Positive Behavior Interventions</i>, 19(1), 48–60. https://eric.ed.gov/?id=EJ1123735
What was the study design?	The study used reversal-withdrawal designs to measure the effectiveness of <i>CW-FIT</i> on one outcome in the student behavior domain—group on-task behavior—and two outcomes in the teacher practice domain—teacher praise and teacher reprimands.
What was the WWC study rating?	The study Meets WWC Single-Case Design Standards With Reservations because the single-case designs for two outcomes (group on-task behavior and teacher praise) provide at least three attempts to demonstrate an intervention effect at three different points in time and have at least three data points in each phase. The single-case designs for one outcome (teacher reprimands) Do Not Meet WWC Single-Case Design Standards because the outcome does not meet WWC inter-assessor agreement requirements; the percentage of agreement is lower than the accepted 80% threshold.
Where did the study occur?	The study took place in four preschool classrooms in two Title I elementary schools located in suburban Utah.
Who participated in the study?	Participants included 55 preschool students in four classrooms in two elementary schools. The students were taught by three teachers. Across the four classrooms, 35% of the students were White, 2% were Black, 2% were Pacific Islander, and 62% were Hispanic or Latino. More than half of the students (51%) were English learners, and 62% of students were male.
How was <i>CW-FIT</i> implemented?	Teachers grouped students into teams of three or four based on their seating arrangement. During the first several sessions, teachers described and modeled expectations for student behavior using 10-minuted scripted lessons to show students several skills: how to get attention, follow directions, and ignore other students' inappropriate behaviors. Teachers asked students to role-play the skills and then provided feedback. The target skills were posted in the classrooms, along with visuals and specific steps students should follow. During each session, teachers reviewed the skills and then observed and scored each group every 1.5 to 3 minutes. Teachers provided praise and points if every student on the team displayed the desired skills. Teachers provided feedback to the teams that did not receive points. Teachers set a point goal at the beginning of each day, and teams reaching the goal received a reward at the end of each session, which included extra recess time, stickers, games, dancing, and candy. Sessions took place during 20-minute whole-group instructional periods or 60-minute center-based activities such as learning the alphabet or creating art.
How was the baseline condition implemented?	Teachers used their normal classroom routines and did not provide rewards to students for good behavior. Sessions took place during whole-group instructional periods or center-based activities such as learning the alphabet or creating art.
What were the study findings?	<p>The WWC calculated a design-comparable effect size for teacher praise across three teachers in four classrooms. During <i>CW-FIT</i> sessions, teachers delivered higher levels of praise compared to sessions without <i>CW-FIT</i>.</p> <p>The WWC could not calculate a design-comparable effect size for group on-task behavior because the single-case design includes a cluster-level outcome based on small groups of students, clustered within classrooms. The authors reported <i>CW-FIT</i> was associated with improvements in on-task behavior.</p>

Study citation	Kitson, L. G. (2020). <i>The effects, generalization, and incidental benefits of class-wide function-related intervention</i> [Doctoral dissertation, University of Kansas]. KU ScholarWorks. https://kuscholarworks.ku.edu/handle/1808/31823
What was the study design?	The study used a multiple baseline design across students to measure the effectiveness of <i>CW-FIT</i> on one outcome in the student behavior domain: on-task behavior. The study used multiple baseline designs across classrooms to measure the effectiveness of <i>CW-FIT</i> on two outcomes in the teacher practice domain: teacher praise and teacher reprimands.
What was the WWC study rating?	The study Meets WWC Single-Case Design Standards With Reservations because the single-case designs for all three outcomes provide at least three attempts to demonstrate an intervention effect at three different points in time and have at least three data points in each phase.
Where did the study occur?	This study took place in three general education classrooms located in one public, Title I elementary school in a midwestern, suburban community in the United States.
Who participated in the study?	Participants included three teachers and six students from three classrooms in one school. The students were in kindergarten and grades 1 and 3. All six focal students were identified by their teachers as having high levels of disruptive and off-task behavior and were at risk for social-emotional difficulties. Four students (67%) were Hispanic or Latino and two (33%) were White. Two students (33%) were English learners and five (83%) were male. Across the school, 65% of students received free or reduced-price lunch.
How was <i>CW-FIT</i> implemented?	Teachers used a 15-minute lesson to teach their students three target skills, including how to correctly get the teacher's attention, follow directions, and ignore inappropriate behavior of other students. During the lesson, they provided modeling and examples of the skills, asked students to practice the skills, and provided feedback. Each skill was also presented on a poster that was displayed in the classroom. After this lesson, the teachers grouped their classrooms into teams of three to five students based on their seating arrangements and introduced the <i>CW-FIT</i> game. Before each session, they reviewed the skills and point requirements for the day. During each session, the teachers used a timer that sounded every 3 minutes. When the timer went off, the teachers scanned each team and provided praise and one point if every student on the team was demonstrating appropriate behaviors. Teachers provided direct feedback to teams that did not receive points. The point sheet was displayed to the class. At the end of each session, teachers rewarded teams that achieved the point goal for that day, which ranged from 12 to 14 points. Teachers provided extra support to students who were not responding to <i>CW-FIT</i> ; they provided students a small chart to monitor their own behavior and record when they were behaving appropriately. They also provided students with help cards that they could use when they needed help on an assignment. Students could earn extra points using these tools. Each session lasted approximately 45 minutes and occurred during a math lesson.
How was the baseline condition implemented?	The teachers instructed their students as they normally would.
What were the study findings?	The WWC calculated a design-comparable effect size for on-task behavior across six students and for teacher praise and teacher reprimands across three teachers. During <i>CW-FIT</i> sessions, students had higher levels of on-task behavior, and teachers delivered higher levels of praise and lower levels of reprimands compared to sessions without <i>CW-FIT</i> .

Study citation	Moore, T. C., Alpers, A. J., Rhyne, R., Coleman, M. B., Gordon, J. R., Daniels, S., Skinner, C. H., & Park, Y. (2019). <i>Brief prompting to improve classroom behavior: A first-pass intervention option</i>. <i>Journal of Positive Behavior Interventions</i>, 21(1), 30–41. https://eric.ed.gov/?id=EJ1199712
What was the study design?	The study used reversal-withdrawal designs to measure the effectiveness of <i>CW-FIT</i> on three outcomes in the student behavior domain: on-task behavior, student engagement, and disruptive behavior.
What was the WWC study rating?	The study Meets WWC Single-Case Design Standards With Reservations because the single-case designs for all three outcomes provide at least three attempts to demonstrate an intervention effect at three different points in time and have at least three data points in each phase.
Where did the study occur?	This study took place in a general education physical science classroom in one urban high school located in the southeastern United States. Separate findings were presented from one special education classroom in one rural elementary school in the southeastern United States.
Who participated in the study?	Participants included three high school students in grades 9 and 10 who were co-taught by a general education teacher and special education teacher. The study also included findings for one grade 4 student taught by one special education teacher. All four focal students were male and diagnosed with learning disabilities. One of the high school students was also diagnosed with attention-deficit/hyperactivity disorder, and the grade 4 student had a language impairment. The authors did not provide information on other sample characteristics.

How was <i>CW-FIT</i> implemented?	During the initial session, the teachers taught the class skills that were developed for the game, including following teacher directions the first time, appropriately getting the teacher's attention, respecting other students and ignoring bad behaviors, and trying one's best. This initial session lasted 10 minutes and teachers provided the rationale for each rule and led students in role-playing each rule by providing examples. Before each <i>CW-FIT</i> session, the teachers reviewed the classroom rules and prompted students to provide examples of each behavior. The rules were also displayed on a poster in the classroom. In one class, the teacher also met individually with the focal student before some sessions began to prompt him to follow the rules. During all sessions, teachers responded to students' appropriate and inappropriate behavior in a typical manner. The teachers did not award points or give students prizes for demonstrating class skills.
How was the baseline condition implemented?	The teachers instructed their classrooms in the typical manner and managed behavior using business-as-usual practices. The teachers did not provide prompts of the classroom rules, though the rules were displayed in the high school classroom.
What were the study findings?	The WWC calculated a design-comparable effect size for on-task behavior across three high school students. During <i>CW-FIT</i> sessions, students had higher levels of on-task behavior compared to sessions without <i>CW-FIT</i> . The WWC could not calculate a design-comparable effect size for student engagement and disruptive behavior because fewer than three students had data on these outcomes. The authors reported <i>CW-FIT</i> was associated with improvements in student engagement and a reduction in disruptive behavior.

Study citation	Speight, R., Kucharczyk, S., & Whitby, P. (2022). Effects of a behavior management strategy, CW-FIT, on high school student and teacher behavior. <i>Journal of Behavioral Education</i>, 31, 751–770. https://doi.org/10.1007/s10864-020-09428-9
What was the study design?	The study used reversal-withdrawal designs to measure the effectiveness of <i>CW-FIT</i> on two outcomes in the student behavior domain—student-level on-task behavior and class-level on-task behavior—and two outcomes in the teacher practice domain—teacher praise and teacher reprimands.
What was the WWC study rating?	The study Meets WWC Single-Case Design Standards With Reservations because the single-case designs for two outcomes (student-level and class-level on-task behavior) provide at least three attempts to demonstrate an intervention effect at three different points in time and have at least three data points in each phase. The single-case designs for one teacher (Teacher 1) Do Not Meet WWC Single-Case Design Standards because neither outcome (teacher praise nor teacher reprimands) meets WWC inter-assessor agreement requirements; the percentage of agreement is lower than the accepted 80% threshold. The single-case designs for the other teacher (Teacher 2) Do Not Meet WWC Single-Case Design Standards because they have fewer than three data points in at least one phase.
Where did the study occur?	The study took place in one English language arts class in a public high school in the southern United States.
Who participated in the study?	Participants included three focal students in one grade 9 classroom that was co-taught by one general education teacher and one special education teacher. Separate class-level findings were also presented for the 14 students in the classroom. All three focal students were identified by the special education teacher as at risk for externalizing or internalizing behavior. Two of the focal students (67%) received individualized education program services under the autism spectrum disorder category. Two of the focal students (67%) were English learners. The authors did not provide race or ethnicity information about the three focal students. Across the whole class, nine students (64%) were White and five students (36%) were described as ethnically diverse, but no specific race or ethnicity was identified in the manuscript. Two students (14%) received free or reduced-price lunch.
How was <i>CW-FIT</i> implemented?	Teachers taught students to be respectful by providing concrete examples of the skill on a poster, asking students to discuss the importance of this skill, and working with students to model the expected behaviors. After the skill was introduced, the teachers described the <i>CW-FIT</i> game and the rewards students could earn and organized students into teams. During each session, teachers scanned the classroom every 3 to 5 minutes and provided praise and points to teams demonstrating the target behavior. Teachers provided reminders to students and teams that were not demonstrating respectful behavior. Across each session, teams had approximately 16 opportunities to earn points. At the end of each session, teachers provided rewards, such as phone time or snacks, to the teams that met an established point criterion. Each session lasted approximately 80 minutes and took place during English language arts instruction, small-group work, or individual student work, immediately following silent reading assignments.
How was the baseline condition implemented?	The teachers instructed their classroom in the typical manner and managed behavior using business-as-usual practices such as reprimanding students, prompting students to complete tasks, and removing students from the classroom when necessary. Sessions took place during English language arts lessons, after students completed their silent reading assignments.
What were the study findings?	The WWC calculated a design-comparable effect size for student-level on-task behavior across three students. During <i>CW-FIT</i> sessions, students had higher levels of on-task behavior compared to sessions without <i>CW-FIT</i> . The WWC could not calculate a design-comparable effect size for class-level on-task behavior because fewer than three classes had data on these outcomes. The authors reported <i>CW-FIT</i> was associated with improvements in class-level on-task behavior.

Study citation	Speight, R., Whitby, P., & Kucharczyk, S. (2020). Impact of CW-FIT on student and teacher behavior in a middle school. <i>Journal of Positive Behavior Interventions</i>, 22(4), 195–206. https://eric.ed.gov/?id=EJ1265191
What was the study design?	The study used a multiple baseline design across classrooms to measure the effectiveness of <i>CW-FIT</i> on one outcome in the student behavior domain—on-task behavior—and two outcomes in the teacher practice domain—behavior-specific praise and behavior-specific reprimands.
What was the WWC study rating?	The study Meets WWC Single-Case Design Standards Without Reservations because the single-case designs for two outcomes (on-task behavior and behavior-specific praise) provide at least three attempts to demonstrate an intervention effect at three different points in time and have at least five data points in each phase. The single-case design for one outcome (behavior-specific reprimands) Does Not Meet WWC Single-Case Design Standards because the outcome does not meet WWC inter-assessor agreement requirements; the percentage of agreement is lower than the required 80% threshold.
Where did the study occur?	This study took place in three classrooms in one public middle school in the southern United States.
Who participated in the study?	Participants include 35 students in grades 6 and 7 in three classrooms taught by a total of five teachers. Two of the classes were co-taught by a general education teacher and a special education teacher. Most students in the sample were described as Hispanic or Latino (54%) and English learners (51%). In addition, 23% were White, 14% were Hawaiian or Pacific Islanders, and 3% were Black. Sixty percent of students received free or reduced-price lunch. Two of the classrooms included students with disabilities, and 23% of students had an individualized education program.
How was <i>CW-FIT</i> implemented?	Teachers taught two desired behaviors during two training sessions by describing the skills associated with the behaviors and providing opportunities for students to practice them. The behaviors were determined by each teacher and included following directions the first time and being respectful. The behaviors were also displayed on a poster at the front of the class. Prior to starting <i>CW-FIT</i> , the teachers split their classes into small groups of two to five students and described the game to students, indicating that teams could earn points if each team member demonstrated the desired behaviors. At the beginning of each session, teachers reviewed the desired behaviors, reminded students of how to earn points, and shared the reward and number of points required to receive a reward. Teachers scanned the classroom every 3 to 5 minutes; they provided praise and points to groups who demonstrated the desired behaviors and provided reminders when needed. At the end of the game, teachers tallied the points, identified teams that met the point goal for the day, and provided the reward, such as extra free time, computer time, outside time, or snacks. Teachers implemented the intervention once each day during a 45- to 90-minute session that included whole-group instruction, small-group work, or independent reading or writing.
How was the baseline condition implemented?	Teachers implemented their typical classroom management strategies, which consisted of general praise statements, reprimands, and recording checks associated with the schoolwide punitive system. Sessions took place during whole-group instruction, small-group work, or independent reading or writing.
What were the study findings?	The WWC calculated a design-comparable effect size for behavior-specific praise across five teachers in three classrooms. During <i>CW-FIT</i> sessions, teachers delivered higher levels of behavior-specific praise compared to sessions without <i>CW-FIT</i> . The WWC could not calculate a design-comparable effect size for on-task behavior because the single-case design includes a cluster-level outcome based on small groups of students, clustered within classrooms. The authors reported <i>CW-FIT</i> was associated with improvements in on-task behavior.

Appendix Table 2. Characteristics of the six studies of *Class-Wide Function-Related Intervention Teams (CW-FIT)* that meet WWC single-case design standards and do not contribute to the intervention report

Study citation	Caldarella, P., Williams, L., Jolstead, K. A., & Wills, H. (2017). Managing student behavior in an elementary school music classroom: A study of class-wide function-related intervention teams. Update: Applications of Research in Music Education, 35(3), 23–30. https://eric.ed.gov/?id=EJ1140013
What was the study design?	The study used a reversal-withdrawal design to measure the effectiveness of <i>CW-FIT</i> on one outcome in the student behavior domain: class-level on-task behavior.
What was the WWC study rating?	The study Meets WWC Single-Case Design Standards With Reservations because the single-case design provides at least three attempts to demonstrate an intervention effect at three different points in time and has at least three data points in each phase.
Where did the study occur?	The study took place in one grade 6 music classroom in a Title I elementary school in Utah.
Who participated in the study?	Participants include 22 students in one grade 6 music classroom taught by one teacher. Approximately 23% of the students were White, 5% were Asian, and 73% were identified as Hispanic or Latino. Half of the students (50%) were female. Across the entire school, 87% of students were eligible for free or reduced-price lunch.
How was <i>CW-FIT</i> implemented?	The teacher organized the music class into six teams based on seating arrangements and introduced target skills by explicitly defining the expected behaviors associated with the skills, discussing the importance of the behaviors, and role-playing the behaviors. The skills included following directions the first time, getting the teacher's attention correctly, ignoring inappropriate behavior, and participating in class activities. During the first several sessions, the teacher introduced one social skill per class period. After the skills were introduced, the teacher briefly reviewed them with the students at the beginning of each session and displayed them on posters in the room. During normal classroom instruction, a timer beeped approximately every 3 to 5 minutes. At each beep, the teacher praised and awarded points to groups demonstrating the target skills. At the end of the class period, the teacher tallied points, and the teams that reached a predetermined goal received a group reward, such as short video clips from the internet, treats, and games. <i>CW-FIT</i> sessions lasted 1 hour and took place over the course of 4 months.
How was the baseline condition implemented?	The teacher used existing behavior management practices, such as providing praise and consequences. The teacher posted classroom rules on wall, which included following directions, raising one's hand, being kind, and making smart choices. The teacher taught these rules and reviewed them throughout the school year.
What were the study findings?	The WWC could not calculate a design-comparable effect size because the sample included fewer than three classrooms. The authors reported that <i>CW-FIT</i> was associated with an increase in on-task behavior.
Study citation	Hansen, B. D., Caldarella, P., Williams, L., & Wills, H. P. (2017). Managing student behavior in dual immersion classrooms: A study of Class-Wide Function-Related Intervention Teams. Behavior Modification, 41(5), 626–646. https://doi.org/10.1177/0145445517698418
What was the study design?	The study used a multiple baseline design across classrooms to measure the effectiveness of <i>CW-FIT</i> on one outcome in the student behavior domain: class-level on-task behavior.
What was the WWC study rating?	The study Meets WWC Single-Case Design Standards Without Reservations because the single-case design provides at least three attempts to demonstrate an intervention effect at three different points in time and has at least five data points in each phase.
Where did the study occur?	The study took place during French instruction in three French immersion classrooms at one elementary school in Utah.
Who participated in the study?	Participants included 74 students in three classrooms in grades 2 through 4. The student population of the entire school was 81% White and 11% Hispanic or Latino, but race and ethnicity information was not provided for the students in the three study classrooms. Most of the study participants (97%) were native English speakers who were learning French. Forty-six percent of the study participants were male.
How was <i>CW-FIT</i> implemented?	During the first few days of <i>CW-FIT</i> implementation, teachers taught the students target skills, including how to correctly get the teacher's attention, follow directions, and ignore other students' inappropriate behaviors. These skills were displayed on posters with visual reminders. After the first week, teachers briefly reviewed the skills at the beginning of each session and split their class into three to six groups of two to six students. Teachers awarded points to groups if every student in the group exhibited the target skills during a 2- to 5-minute interval. Teachers set a point goal, and every group that reached the goal received a reward at the end of the session. All of the <i>CW-FIT</i> materials the teacher used were translated into French for this study.
How was the baseline condition implemented?	Teachers continued their standard classroom management practices with no formal behavior system in place.
What were the study findings?	The WWC could not calculate a design-comparable effect size for class-level on-task behavior because the single-case design includes a cluster-level outcome based on small groups of students, clustered within classrooms. The authors reported <i>CW-FIT</i> was associated with improvements in on-task behavior.

Study citation	Hirsch, S. E., Healy, S., Judge, J. P., & Lloyd, J. W. (2016). Effects of an interdependent group contingency on engagement in physical education. <i>Journal of Applied Behavior Analysis</i>, 49(4), 975–979. https://eric.ed.gov/?id=EJ1121384
What was the study design?	The study used a reversal-withdrawal design to measure the effectiveness of <i>CW-FIT</i> on one outcome in the student behavior domain: student engagement.
What was the WWC study rating?	The study Meets WWC Single-Case Design Standards With Reservations because the single-case design provides at least three attempts to demonstrate an intervention effect at three different points in time and has at least three data points in each phase.
Where did the study occur?	The study was conducted in one physical education class in a small, urban elementary school in Virginia.
Who participated in the study?	Participants included 20 students in one grade 2 physical education class. Sixty percent of the students were male and 40% were female. One student (5%) was an English learner, and three students (15%) received special education services for a language impairment. The study reported no other demographic information.
How was <i>CW-FIT</i> implemented?	The teacher grouped students into four teams based on who they believed would work well together. During the first two sessions, the teacher explained <i>CW-FIT</i> procedures and behavioral expectations to students, which included following directions the first time, ignoring inappropriate behavior from other students, and staying within the instruction area. During each session, the teacher wore a timer that vibrated every 2 minutes, prompting him to scan the students, deliver behavior-specific praise, and award points to teams that met expectations. The teacher delivered a brief reminder about behavior expectations to teams that did not receive a point. At the end of each session, the teacher totaled each team's points, and teams that met the specified daily point goal received a reward, such as a dance party or a special game. <i>CW-FIT</i> sessions took place during a 30-minute physical education class while teams progressed through different activities, including whole-group warm-up activities and station-based activities such as four-square or tennis.
How was the baseline condition implemented?	Teachers grouped students into four teams based on who would work well together, and teams progressed through whole-group warm-up activities and station-based activities such as four-square or tennis. No formal behavior system was in place.
What were the study findings?	The WWC could not calculate a design-comparable effect size because the sample included fewer than three classrooms. The authors reported that <i>CW-FIT</i> was associated with an increase in student engagement.

Study citation	Monson, K. D., Caldarella, P., Anderson, D. H., & Wills, H. P. (2020). Improving student behavior in middle school art classrooms: Initial investigation of CW-FIT tier 1. <i>Journal of Positive Behavior Interventions</i>, 22(1), 38–50. https://eric.ed.gov/?id=EJ1235752
What was the study design?	The study used reversal-withdrawal designs to measure the effectiveness of <i>CW-FIT</i> on two outcomes in the student behavior domain—class-level on-task behavior and student-level on-task behavior—and two outcomes in the teacher practice domain—teacher praise and teacher reprimands.
What was the WWC study rating?	The study Meets WWC Single-Case Design Standards Without Reservations because the single-case designs provide at least three attempts to demonstrate an intervention effect at three different points in time and have at least five data points in each phase.
Where did the study occur?	The study took place in two grade 7 art classrooms in one Title I middle school located in a western mountain state in the United States.
Who participated in the study?	Participants include 56 students in two grade 7 art classes taught by two teachers. The study also provided separate findings for two focal students. Most of the students in the two classes were White (63%) and the rest were described as Hispanic or Latino (38%). More than half of the students were female (52%). Across the entire school, 51% of the student population received free or reduced-price lunch.
How was <i>CW-FIT</i> implemented?	Teachers split their classroom into six teams of three to six students each, organized by seating arrangement. During the first two sessions, the teachers described expectations for student on-task behavior, using a script that required student participation and asked them to focus on listening, showing respect, and staying on task. Teachers then asked the students to discuss which skills would be necessary to meet each expectation and why those behaviors are important. Posters of each expectation were created and displayed in a prominent place in the classroom, easily visible to all students. During each session, teachers observed and scored each group in 5-minute intervals. If all students were on task, the group received a point. Teachers could also award bonus points to groups or individuals who were meeting expectations between intervals to help those who were behind catch up. Teachers provided behavior-specific praise to individuals and recorded points on a chart that students could see. Teachers set a point goal at the beginning of each class, and teams reaching the goal received a reward at the end of each session, which included lip balm, pencils, flashlights, and permission to leave class 2 to 3 minutes early. Sessions took place during 35- to 45-minute art classes.
How was the baseline condition implemented?	The teachers conducted art classes as they normally would. No changes were made to the routines, instruction, or classroom management style of either teacher. Students were expected to use materials properly, be respectful of others, use their time wisely, and produce quality work. When students were disruptive, teachers provided feedback, sent them to the office, or contacted their parents.

What were the study findings?	The WWC could not calculate a design-comparable effect size because the sample included fewer than three students, three classrooms, and three teachers. The authors reported that <i>CW-FIT</i> was associated with an increase in class-level on-task behavior, student-level on-task behavior, and teacher praise but found no significant decreases in teacher reprimands.
Study citation	Nelson, M. A., Caldarella, P., Hansen, B. D., Graham, M. A., Williams, L., & Wills, H. P. (2018). Improving student behavior in art classrooms: An exploratory study of CW-FIT. <i>Journal of Positive Behavior Interventions</i>, 20(4), 227–238. https://eric.ed.gov/?id=EJ1191271
What was the study design?	The study used reversal-withdrawal designs to measure the effectiveness of <i>CW-FIT</i> on one outcome in the student behavior domain—class-level on-task behavior—and one outcome in the teacher practice domain—teacher praise-to-reprimand ratios.
What was the WWC study rating?	The study Meets WWC Single-Case Design Standards Without Reservations because the single-case designs for one classroom (Class 3) provide at least three attempts to demonstrate an intervention effect at three different points in time and have at least five data points in each phase. The single-case designs for one classroom (Class 2) Meet WWC Single-Case Design Standards With Reservations because they have at least three data points per phase. The single-case designs for one additional classroom (Class 1) Do Not Meet WWC Single-Case Design Standards because they do not have at least three attempts to demonstrate an intervention effect at three different points in time.
Where did the study occur?	The study took place in two art classrooms in one Title I elementary school in suburban Utah.
Who participated in the study?	Participants included 46 students in two art classrooms (Classes 2 and 3) taught by the same teacher. The students were in grades 3 and 5. Across the two classrooms, 35% of students were White, 4% were Asian, 4% were Pacific Islander, and 57% did not report race. Fifty-seven percent were Hispanic or Latino. More than half of the students (59%) were male.
How was <i>CW-FIT</i> implemented?	The teacher organized each classroom into six teams of three to four students based on their seating assignments. During the first 3 weeks, the teacher taught one social skill lesson each week, focusing on following directions the first time, getting the teacher's attention the right way, and ignoring other students' inappropriate behaviors. Each social skill lesson lasted 10 to 15 minutes and included explaining the rationale for the social skill, an explanation of the behaviors needed to demonstrate the skill, and opportunities for role-playing with other students. During the remaining sessions, the teacher briefly reviewed the target skills at the beginning of each period and displayed a poster with the <i>CW-FIT</i> skills. In 3- to 5-minute intervals during each session, the teacher praised teams and gave them a point if all members were demonstrating the target skills. If one or more students in the group were off task, the team received no points. At the end of the class, teams that earned points in 75% to 85% of the intervals received rewards such as candy, pencils, toys, or games. The teacher also implemented a Tier 2 self-management component of <i>CW-FIT</i> with six students who continued to have difficulty using the target skills. These students were asked to record their own behavior, and when the timer vibrated, the teacher instructed the students to evaluate their own behavior and award one point to themselves if they used the target skills. Classroom 2 met once a week for 1 hour, and Classroom 3 met twice a week for 30 minutes.
How was the baseline condition implemented?	The teacher conducted art class as normal, using classroom management techniques such as assigned seating, expectations related to correct use of art supplies, negative consequences for behavior problems, and reinforcement for appropriate behaviors. Class expectations were displayed on a poster. The teacher gave candy to students who exhibited good behavior and awarded points to classrooms for good behavior, which they could put toward a pizza party. The school was implementing components of schoolwide positive behavior support but did not have a complete program.
What were the study findings?	The WWC could not calculate a design-comparable effect size because the sample included fewer than three classrooms. The authors reported that <i>CW-FIT</i> was associated with an increase in class-level on-task behavior and improvements in teacher praise-to-reprimand ratios.

Study citation	Orr, R. K., Caldarella, P., Hansen, B. D., & Wills, H. P. (2020). Managing student behavior in a middle school special education classroom using CW-FIT tier 1. <i>Journal of Behavior Education</i>, 29, 168–187. https://eric.ed.gov/?id=EJ1243841
What was the study design?	The study used reversal-withdrawal designs to measure the effectiveness of <i>CW-FIT</i> on one outcome in the student behavior domain—class-level on-task behavior—and two outcomes in the teacher practice domain—behavior-specific praise and behavior-specific reprimands.
What was the WWC study rating?	The study Meets WWC Single-Case Design Standards Without Reservations because the single-case designs provide at least three attempts to demonstrate an intervention effect at three different points in time and have at least five data points in each phase.
Where did the study occur?	This study took place in one self-contained special education classroom at a suburban Title I middle school in Utah.
Who participated in the study?	Participants included 12 students with disabilities in one self-contained classroom and 11 typically developing peer tutors who worked with the students. The students were in grades 7 through 9. The class was taught by one special education teacher and three aides. Approximately 57% of the 23 students were female. Sixty-five percent were White, 4% were Native American, and the rest did not report race. Thirty percent were Hispanic or Latino. Across the entire school, 56% of students qualified for free or reduced-price lunch.

How was <i>CW-FIT</i> implemented?	The teacher organized the students into five teams and asked the peer tutors to help students with disabilities on their team complete tasks. During three initial sessions, each lasting 10 to 15 minutes, the teacher taught three target skills: following directions the first time, correctly getting the teacher’s attention, and ignoring peers’ inappropriate behavior. The lessons included explanations and role-playing of each skill. The teacher also displayed the skills on posters in the classroom. During the remaining sessions, the teacher provided behavior-specific praise and points to teams during 3- to 5-minute intervals if students displayed the target skills. The peer tutors were included in point decisions during later sessions of <i>CW-FIT</i> . The teacher tracked points on a poster that students could see, and at the end of each session, the teacher gave a reward, such as playing a game or watching video clips, to teams that met the goal for that session. Sessions took place during a 75-minute period focused on functional independent life skills, such as using money.
How was the baseline condition implemented?	The teacher posted classroom rules on the wall, and students with disabilities worked with peer tutors to track their own behavior, such as following directions, keeping their hands to themselves, using kind words, and working on assignments. At the end of each session, the teacher or peer tutor placed a sticker on each student’s tracking sheet if they followed the rules. Students who earned enough stickers could earn 5 minutes of free time at the end of the period.
What were the study findings?	The WWC could not calculate a design-comparable effect size because the sample included fewer than three classrooms. The authors reported that <i>CW-FIT</i> was associated with an increase in class-level on-task behavior and behavior-specific praise but found no consistent decreases in teacher reprimands.