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Decreasing First Grade Transition Time Using the Timely Transitions Game

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Abstract

Everyday in elementary schools, instructional time is being lost due to the multiple transitions that take place throughout the school day. This study focuses on the implementation of the Timely Transitions Game (TTG) as a practical intervention meant to decrease transition times. A single case A-B-A-B whole class design was implemented in order to analyze transition times in a first grade classroom. Transition times were recorded when students transitioned into the classroom from morning recess, lunch recess, and physical education. Results indicated a decrease in transition times during the intervention phases when the TTG was implemented. In addition, an overall trend of decreasing transition times across baseline and intervention phases was evident. Findings revealed 95% non-overlapping data between baseline and intervention. This indicated a functional relationship between implementation of TTG and decreased transition times; therefore the TTG was an effective intervention for decreasing transition times.

Keywords: classroom management, elementary, timely transitions game, transitions

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Literature Review

Instructional time has been a major focus to teachers and educational research in recent years (Rivkin & Schiman, 2013). Most public schools have used the following schedule since the 1960s: 170 to 180 days, 5 days a week, 6.5 hours a day (Silva, 2007). However, that six-and-a-half-hour time frame is not comprised merely of instructional time. According to Gettinger and Seibert (2002) instructional time is defined as the proportion of allocated time that is spent on instructional activities. Within the school day, there are daily disruptions that a teacher must account for in their planning. Instructional time needs to be planned around recess, lunch, announcements, library, music, assemblies, computer lab, and emergency drills, not to mention transitions both in and out of the classroom (Silva, 2007).

Although no recent extensive research has been conducted in daily scheduled disruptions in school, there has been some research done on unplanned disruptions. An example of an unplanned disruption includes student misbehaviors. When disruptions such as these take place, instructional time is directly affected. In a study conducted in Finland by Saloviita (2013) the time it took a lesson to begin was recorded and averaged out to about six minutes. After looking at 151 lessons, it was determined that over the course of a year, the delays in lesson starts amounted to approximately five weeks of schooling. This poses a problem for teachers due to the fact that their students are not getting the most instructional time possible. Saloviita (2013) also noted that although a small amount of time may not seem detrimental, when looked at as a whole, the time adds up to be a significant portion of wasted time. Furthermore, evidence suggests that when instructional time is decreased student achievement is directly affected.

Research suggests that instructional time is linked to a student's academic achievement. Jez and Wassmer (2015) utilized data from elementary schools in California and concluded that when more instructional time was given, students experienced higher academic achievement. Findings also suggested that English learner students in particular experienced greater academic growth with more instructional time. Betts, Bolt, Decker, Muyskens, and Marston (2009) stress the importance of time for English Learners to develop the English language. Teachers need time for direct teaching of vocabulary and comprehension strategies all while providing multiple opportunities for students to be exposed to the English language. Many English learners get a majority, if not all, of their English exposure at school. However, research strongly suggests that instructional time needs to be filled with quality instruction in order to have maximum learning benefits for students (Patall, Cooper, & Allen, 2010; Rivkin & Schiman, 2015; & Silva, 2007). This is important to note because an emphasis must remain on the need of instruction to be of high quality. In research (Lavy, 2015) that analyzed data from more than 50 countries, it was suggested that instructional time has a positive and significant effect on test scores. With research supporting the link between academic achievement and instructional time, quality instructional time needs to be maximized.

Transitions

One way to maximize instructional time is through addressing transitions throughout the school day. As previously established, multiple disruptions take place throughout the school day both in and out of the classroom. Codding and Smyth's (2008) research suggests that time spent transitioning between activities accounted for 25% of the school day. When a loss of instructional time occurs, it is often accompanied by an increase in student behavior problems and off-task behavior (Ratcliff et al., 2014). Frequently, teachers experience these increased

behavioral issues during transitions (McIntosh, Herman, Sanford, McGraw, & Florence, 2004). Codding and Smyth (2008) define transitions as instructions or directions for an academic activity, moving from one location to another for an activity change, retrieving materials prior to the start of an activity, collecting materials between activities, or waiting for students to finish an activity after time has ended or for students to obtain materials. Transitions encompass a multitude of factors and occur the moment students step into the classroom and every time students end one activity and move on to the next activity. Transitions pose a challenge to both teachers and students since student misbehavior is more likely to occur (Guardino & Fullertin, 2004; McIntosh et al., 2004).

In observations by McIntosh and colleagues (2004), some behaviors that were observed were pushing, high noise levels, and a 30-minute transition from lunch into the classroom that resulted in two discipline referrals. This leads to instructional time being wasted as students are asked to halt their current routine, perform a set of tasks, and initiate a new activity without breaking established classroom procedures. If teachers can decrease transitional time in their own classrooms, that will directly equate to increased instructional time. McIntosh and colleagues (2004) encourages teachers to teach transitions because considerable frustration and teaching time can be saved, especially given how many transitions students experience throughout the school day. When teachers have difficulty getting started on lessons, maintaining student attention, and making smooth transitions among activities, the result is a loss in classroom instructional time (Gettinger & Seibert, 2002; Saloviita, 2013).

It is often left up to teachers to maximize instructional time in the classroom (Guardino & Fullertin, 2004). Classroom management is a major factor to how much time is being utilized in the classroom. Assisting teachers and schools to manage instructional time effectively is

important to increasing learning time and improving academic performance for all students (Gettinger & Seibert, 2002). With numerous strategies, routines, and procedures that a teacher can utilize in their own classroom, teachers can pick and choose what works for them. According to Codding and Smyth (2008) there are several recommendations made to teachers in order to decrease transition time. These include beginning the lesson on time, providing warnings about upcoming transitions, bringing activities to a close before the transition begins, and arranging materials within the classroom that is clear from obstructions. McIntosh and colleagues (2004) indicated that teachers could improve student transition skills by teaching routines, using precorrections, using positive reinforcement procedures, and maintaining active supervision. Teaching routines consists of teachers explicitly modeling the expected behavior and providing multiple opportunities for student practice. Precorrections are defined as quick reminders of expected behavior before transitioning. Positive reinforcement procedures are the incentives being offered to students for appropriate behavior, such as praise. According to research, teachers should be encouraged to incorporate teaching methods and classroom practices that maximize academic learning time (Getiinger & Seibert, 2002). Addressing transitions within the classroom is one-way that teachers can increase instructional time.

Timely Transitions Game. Campbell and Skinner (2004) focused on decreasing transition time and decreasing student misbehavior among sixth graders. For this study, Campbell and Skinner (2004) developed an intervention called the Timely Transitions Game (TTG) in order to address sixth grade room-to-room transitions. The TTG is a game that is played throughout the school day. Students are first presented with a word that the class needs to earn letters for. If they successfully earn all the letters to the word, then the game is completed. Students are explicitly timed in their transitions and the time is recorded in front of the students.

The time starts at the moment a student passes the threshold of the door and is stopped once all students are quietly sitting in their seats facing the teacher. The times remain posted in front of the class for the remainder of the day. At the end of the day the teacher randomly picks a transition (e.g., morning lunch transition) from a box. The teacher then randomly picks a time from another box that contains predetermined times. These predetermined times were based on average transition times that were collected during baseline. If the class' chosen transition time for that day is faster than the one randomly selected, then students are successful in earning an immediate reward in the form of a letter to the word they are working toward. Once all of the letters are earned and the word is complete, students earn the prize that was presented to them at the beginning of the game.

Research on different strategies meant to decrease transition time was utilized in the development of the TTG. The strategies incorporated within the TTG are interdependent group-oriented contingencies with randomly selected target behaviors and criteria, explicit timing, and publicly posted group feedback. Yarbough, Skinner, Lee, and Lemmons (2004) sought to conduct a replication of this study among second graders. With the implementation of the TTG, both studies found a decrease in transition times among students. According to Gaurdino and Fullertin (2004), if teachers are provided with evidence-based transition activities, a productive classroom will be promoted and more time will be spent on academic learning. With the previous research (Campbell & Skinner, 2004; Yarbough et al., 2004) the opportunity of evidence-based transition activities can be brought directly to teachers for use in their classroom.

Limitations of Previous Research

The limitations in previous research must be noted in order to establish why the current study is needed. Beginning with research conducted by Codding and Smyth (2008), the

effectiveness of performance feedback on transition times in three different classrooms was investigated. Although the study found evidence of a reduction in transition time, limitations were noted. Data was not collected for classrooms that were not receiving performance feedback. It was noted that this kind of data would have been useful future studies. Also the study included three different classrooms taught by different teachers. The different teaching styles were not accounted for in this study. In the initial research by Campbell and Skinner (2004), the TTG was designed for implementation as an A-B-A-B single subject design. However, after beginning implementation of the TTG the teacher declined to withdraw the intervention thus turning the study into an A-B design. It was acknowledged that an A-B design does not control for threats to internal validity and that confounding variables may have led to the reduction in transition time.

Another limitation present in this study is the absence of an independent observer. This means that there is no verification that the teacher wrote down the transition times correctly or timed transitions accurately. It was noted that future studies need to include an independent observer in order to ensure both the TTG is being implemented as planned and time was measured consistently. In follow-up research conducted by Yarbough and colleagues (2004), the TTG was again the focus. It was acknowledged that one of the limitations present in the study was that TTG implementation was highly susceptible to sabotage. Sabotage is noted as one student standing in order to affect the class' transition time. These limitations indicate a need for further research. Specifically, this study addresses the need for additional research to be conducted in different grade levels and populations (Campbell & Skinner, 2004; Yarbough et al., 2004).

Methods

The purpose of this study was to further investigate transition times in the classroom. This study aimed to extend research in which the TTG was utilized to decrease transition times (Campbell & Skinner, 2004; Yarbough et al., 2004). In research conducted by Campbell and Skinner (2004), the TTG was created as an intervention to address transition times. Although results were replicated, the populations of both studies were strictly representative of African American and White students. The current study focused on a population primarily representative of a Hispanic population from a low socioeconomic background. This broadened the population base for TTG implementation and helped build a better understanding of how teachers can decrease transition times in their own classroom. More importantly, previous research has called for the need of further research involving the TTG (Campbell & Skinner, 2004; Yarbrough et al., 2004). A decrease in transition times equates to an increase in instructional time, which would be highly valuable in any classroom.

Research Question

Does the TTG lead to decreased transition times in a first grade classroom?

Hypothesis

Based on the results of previous research (Campbell & Skinner, 2004; Yarbough et al., 2004) it was hypothesized in the present study that transition time in a first grade classroom will decrease with the implementation of the TTG.

Research Design

This study followed a single subject research design. More specifically, an A-B-A-B design using a whole class sample was used to replicate Campbell and Skinner's (2004) original study.

Independent variable. The independent variable in this study was the intervention of the TTG (Campbell & Skinner, 2004). The TTG includes interdependent contingencies with randomly selected criteria, target behaviors, explicit timing, and publicly posted feedback. Selected criteria is defined as the target times that students', as a whole class, transition time will either meet or not meet. Target times were pre-determined and placed into a box and were randomly selected. The target behavior is defined as students quietly sitting with their hands on top of their desk. Explicit timing is defined as the time that it takes students to transition into the classroom. The timing began as the first student crossed the threshold of the door into the classroom and stopped when all students were showing the target behavior. Publicly posted feedback is defined as the class transition times being recorded and displayed on a paper in the front of the class.

Dependent variable. The dependent variable is whole class transition times. Transition time is defined by Codding and Smyth (2008) as providing instructions or directions for an academic activity, moving from one location to another for an activity change, retrieving materials prior to the start of an activity, collecting materials between activities, or waiting for students to finish an activity after time has ended or for students to obtain materials. In the current study, transition times were recorded with the use of a digital stopwatch to determine seconds taken to transition back into the classroom following morning recess, lunch recess, and physical education.

Participants and Setting

The setting of this experiment took place in a K-6 Elementary School located in a central California city where 75% of the population is Hispanic (Data Access and Dissemination Systems, 2010). This school is located in a predominately low-income neighborhood and

located only a few blocks away from a local high school, middle school, and another elementary school.

The teacher who implemented the intervention also served as the researcher of this study. The participants for the present study were selected by convenience of being in a readily accessible classroom. Due to the intervention originally being developed for whole group implementation, the whole class will be receiving the intervention. The classroom is made up of 28 first grade students, 40% girls and 60%. Of these students, 96% are Hispanic, 4% are Non-Hispanic White, and 57% have been deemed English learners with a primary language of Spanish.

Measures

For this study, transition time began at the moment the first student entered the classroom and concluded at the moment all students were showing the target behavior (i.e., quietly sitting with their hands on their desk). There were three transitions back into the classroom measured for this study: morning recess, lunch recess, and P.E. A digital stopwatch was used to measure transition time in seconds and that time was then recorded on a piece of displayed paper near the whiteboard for students to see. The use of a digital stopwatch was reflective of previous studies recording transition times (Campbell & Skinner, 2004; Codding & Smyth, 2008; Yarbrough et al., 2004). The teacher also recorded the date, phase, and transition type on a recording sheet for data purposes (see Appendix A). The teacher's recording sheet was utilized to determine the effectiveness of the intervention. Throughout the study, the intervention and baseline phases were recorded.

Validity. The TTG was developed by Campbell and Skinner (2004) and was based on previous research. Internal validity has been established through previously conducted research

(Campbell & Skinner, 2004; Yarbrough et al., 2004). It specifically aimed to serve as an intervention to address transition time. This intervention was replicated in another study (Yarbrough et al., 2004) with the use of a six-phase withdrawal design (i.e., A-B-A-B-A-B design), which established validity. Both studies aimed to measure transition times and found a decrease in transition times when the TTG was implemented.

Reliability. In order to address reliability, inter-observer agreement data was used during the intervention and baseline phases. The use of inter-observer agreement data is reflected in previous research (Yarbrough et al., 2004). Both the teacher and second observer timed student transitions using separate digital stopwatches. The second observer was present for 36% of the transition sessions in order to achieve at least 80% reliability. To further ensure consistency and reliability of the measure, the second individual was explicitly coached prior on when to begin and end the time. Agreement was reached if both observers recorded times differed by no more than two seconds of one another. Agreement between the teacher and second observer was calculated at 100% reliability.

Intervention

The intervention utilized was the TTG, which was developed as a solution to reduce sixth grade room-to-room transition times (Campbell & Skinner, 2004). This game combined explicit timing procedures and an interdependent, group-oriented reward program with randomly selected criteria (i.e., seconds taken to transition). Once the first student entered the classroom, the timer began and continued until all students were quietly sitting with their hands on their desk for five seconds. At the end of the day, if the class completed the randomly selected transition (e.g., morning recess transition) in less time than the randomly selected criterion, they earned a letter. As previously stated, the randomly selected criterion was a time which students'

transition time either met or did not meet. The criteria were pre-determined and written on cards, which were placed into a box for the random selection. When students successfully earned enough rewards (e.g., the three letters that spell F-U-N), they received access to the prize (e.g., having lunch with the teacher). If the randomly selected transition time and randomly selected criterion were not met then students did not earn the letter. For the intervention phases, the words were short and concise in order to allocate the time frame for this study. For example, F-U-N was one utilized word.

Procedures

In this study, each transition into the classroom was noted as a session. Being that physical education takes place at the end of the day, on minimum days there was no transition from physical education thus resulting in two sessions for those days. Each of these sessions was recorded as a data point for further analysis. A baseline was established by recording transition times for five consecutive days. This determination for a five-day baseline phase was based on previous TTG research procedures (Campbell & Skinner, 2004; Yarbough et al., 2004). This resulted in 14 sessions, which provided consistent baseline data. These transitions followed morning recess, lunch recess, and physical education. Baseline data was reviewed by the teacher/researcher in order to determine an acceptable range of criteria times. The criteria times ranged from 36 to 50 seconds and were set in 2-second increments. As previously stated, the criteria transition times were the target times that the class' transition time needed to be faster than in order to earn a letter. For example, if the selected class transition time was 46 seconds and the selected criterion time was 48 seconds then students would not earn a letter for the day. Once a baseline was established, students were introduced to the rules of the TTG (Campbell & Skinner, 2004).

During the initial intervention, the teacher reminded students before entering the classroom about the TTG. When students transitioned from morning recess, lunch recess, and physical education, their transition time was recorded on a displayed paper in the front of the class. At the end of each day during the intervention phase, the teacher randomly selected a transition (i.e., morning recess, lunch recess, or physical education) by pulling a card from a box. After determining the transition, a time criterion was randomly selected by again pulling a card from another box. For example, if the "morning recess" card was pulled from the box then the transition time of morning recess was the time that needed to meet the selected criterion. Once the transition was determined, the selected criterion (i.e., target time) was pulled from another box. If the class morning recess transition time for that day met the selected criterion pulled from the box then students were rewarded. The immediate reward came as an earned letter from the previously presented word. The intervention continued until the students earned all the letters in the word and received their prize (e.g., lunch with the teacher).

Following the initial intervention phase, students were then told that they were not going to be playing the TTG. This second baseline phase consisted of data for eight transition sessions. Once the baseline data were collected, students were told that they would again be playing the TTG. Following closely to the previously mentioned intervention phase, the TTG was again introduced with a short word in order to allocate for the time available to complete the current study. Just as the initial intervention phase, this phase continued until the students earned all the letters in the word and received their prize.

Data collection. Data were collected throughout the baseline and intervention phases of this study. Direct observations were used to record the amount of time in seconds that it took students to enter the classroom and show the target behavior. The time began once the first

student crossed the threshold of the classroom door and stopped once all students were sitting quietly with their hands on their desks for at least five seconds. During these phases, the researcher and a second observer, when present, timed and recorded the transition times on a data-recording sheet.

During the initial baseline phase, the transition times were recorded. From this data, the researcher determined an acceptable range of transition times in 2-second increments. For example, 40-50 seconds in 2-second increments would be 40 seconds, 42 seconds, 44 seconds, 46 seconds, 48 seconds, and 50 seconds. These times served as the randomly selected criteria that the class' transition times must have met in order to earn a letter. Transition times were continually recorded throughout the baseline and intervention phases of this study.

Fidelity. Fidelity was reached through the presence of a second observer for 20% of the time during implementation of the intervention. The second observer was present to ensure implementation was occurring and to ensure reliability in data collection through inter-observer agreement. Every time the second observer was present, a sign in sheet was utilized which documented the date, phase, and signature of the observer (see Appendix B).

Ethical Considerations

The current study did not interfere with the course of a normal school day nor with students learning. It can be stated with confidence that the ethical risks for this study are relatively low. Students were not faced with physical, mental, or emotional harm at any point in the study, nor identified by name. This being the case, the presence of participant confidentiality is increased. In order to further increase participant confidentiality, the specific city, school, and class were not identified in this study.

Validity threats. Students were not aware that a research study was taking place other

than knowing about the game. Possible biases must also be noted. The sample of this study was comprised of the researcher's own students. Due to this reason, the researcher had more insight on students than would an outsider. The researcher was aware of the students who had difficulty with transitions and may have unknowingly provided one-on-one verbal reminders or other help that may not be true to the protocol of the intervention. Due to this reason, the researcher needed to be well aware of this and be sure to follow the set protocol for data collection.

Social Validity

At the completion of the study, four teachers completed a four-point Likert scale (i.e., 1 = strongly disagree to 4 = strongly agree) social validity questionnaire (see Appendix C). The questionnaire, adapted from Berger, Manston and Ingersoll (2016), consists of seven questions designed to understand the perceived usefulness, significance and satisfaction with the implemented intervention (Kennedy, 2005). Participant responses were kept confidential and descriptive statistics were conducted to gain insights regarding the intervention. The results from the survey indicated that all respondents felt that the TTG was both effective and acceptable for increasing students' transition skills. All respondents also indicated that that they would be willing to implement the TTG in their own classrooms.

Data Analyses

The transition times collected during this study are the focus. The trends of going from baseline to intervention to baseline to intervention have been closely analyzed. Visual analysis of the data, including percentage of non-overlapping data was calculated. By looking at the recorded transition times, it can be determined whether there was a decrease or an increase in transition time between the phases of the study. Thus, determining whether or not the intervention was successful in decreasing transition time. Multiple transition times have been

recorded at different phases of the study. This gave the opportunity to see the changes, if any, in transition times. In the analysis, the means of transition times as well as individual transition times have been compared. For example, the means of baseline morning recess transition times were compared to the means of intervention morning recess transition times. This served as another opportunity to note any decreases or increases in transition times.

Results

Figure 1 depicts the class transition times across the four phases of this study (i.e., A-B-A-B). The x-axis is the transition (i.e., session number) that was timed and the y-axis is the transition time in seconds. The initial baseline phase transition times ranged from 44 seconds to 83 seconds with an average of 58 seconds. In the initial intervention phase, transition times decreased ranging from 35 to 53 seconds with an average transition time of 37 seconds. In the second baseline phase, transition times increased ranging from 50 seconds to 69 seconds with an average transition time of 61 seconds. When the TTG was again implemented in the second intervention phase, transition times experienced another decrease ranging from 33 to 46 seconds with an average transition time of 39 seconds.

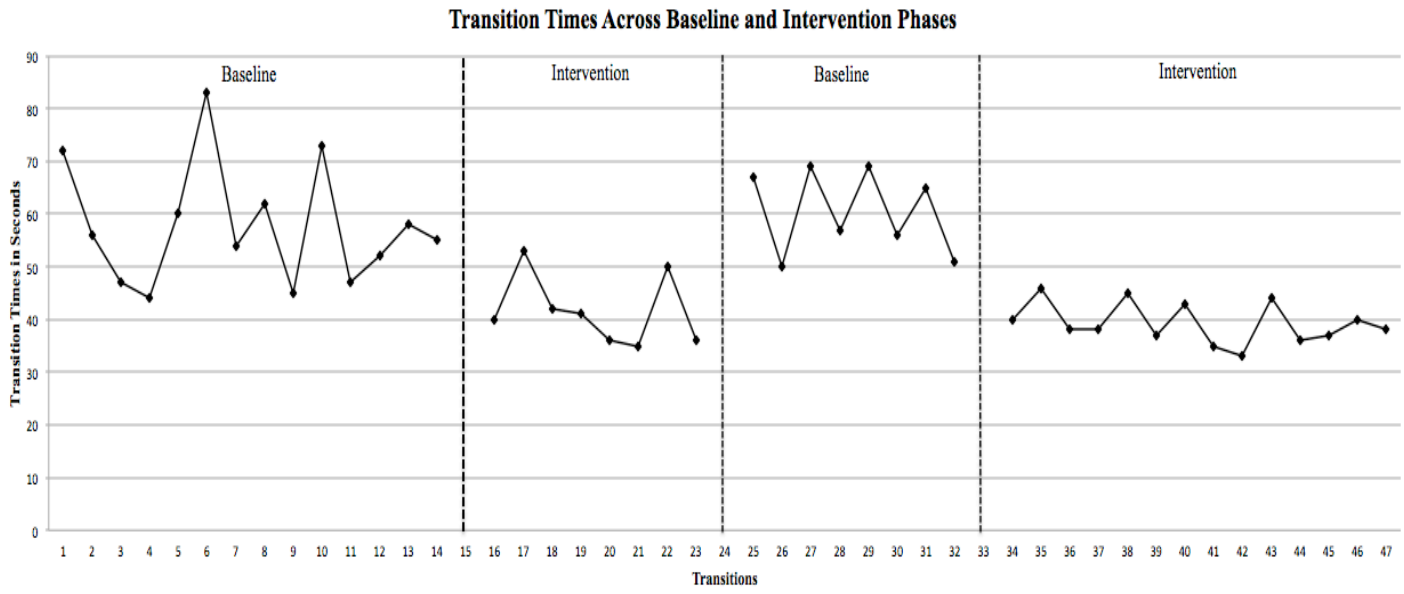

Figure 1. Transition times across baseline and intervention phases.

Discussion

The purpose of this study was to further investigate transition times in the classroom by extending previous research done with the TTG. For this study, it was hypothesized that the transition times in a first grade classroom would decrease with the implementation of the TTG. Based on this study's findings, the hypothesis of this study has been confirmed. The findings of this study indicate that the implementation of the TTG led to a decrease in transitions times. As can be seen in the results, a clear trend was found that resulted in transition time increasing when the TTG was not present, and decreasing the TTG was present. Furthermore, the percentage of non-overlapping data was calculated at 95%, indicating a functional relationship between implementation of TTG and a decrease in whole class transition times. The results from the current study reflect the findings of these previous TTG studies that indicate a decline in the average amount of time taken for daily transitions when the TTG was implemented (Campbell & Skinner, 2004; Yarbrough et al., 2004).

On average, the difference in transition times between baseline and intervention phases was approximately 25 seconds, with transition times decreasing in the intervention phases. The average time saved of 25 seconds per day for a 180-day school year is a savings of 75 minutes per school year. Although 75 minutes may not seem like a substantial amount of time, it must be acknowledged it adds instructional time to the day.

During the initial baseline phase of this study, the longest transition time taken was 83 seconds. Visual analysis of the second intervention phase demonstrated the longest transition time was 46 seconds. This shows a difference in 37 seconds, which is substantially faster than the initial 83 seconds. Furthermore, there was a decrease in the variability of transition times in the second intervention phase as compared to the baseline phases; thus indicating students were responding to the intervention. With the decrease in transition times that has been shown by the results of this study, teachers can have confidence in utilizing the TTG within their own classroom. By using the easy to implement TTG, teachers can decrease the time it takes for students to enter the classroom and increase instructional time.

Limitations and Future Research

Although a trend of decreasing transition times was found, limitations must be acknowledged. As previously stated, this study was conducted using a convenience sample. Therefore, the study only reflected transition times for one classroom. More insight would be provided if more than one classroom, favorably in multiple grade levels, were able to take part in the implementation of the TTG intervention.

Another limitation that must be noted is that this study only examined transitions into the classroom. The only transitions examined at in this study are transitions from morning recess, lunch, and physical education. According to Codding and Smyth (2008) transitions are

instructions or directions for an academic activity, moving from one location to another for an activity change, retrieving materials prior to the start of an activity, collecting materials between activities, or waiting for students to finish an activity after time has ended or for students to obtain materials. The mere definition of transitions encompasses much more than simply students moving into the classroom. In order to truly look at the effectiveness of the TTG, future research should study a variety of transitions that occur during the school day.

Specifically, future research should explore the implementation of the TTG on transitions within the classroom. This includes students moving from one activity to the next rather than moving from outside to inside the classroom. This would provide greater insight of how much instructional time can potentially be saved with the implementation of the TTG. Lastly, it is recommended that future research be carried out over a longer period of time. This will provide the opportunity to gain thorough insight on the long-term effectiveness of the TTG in both transition time decreases as well as the variance decreases indicated in the current study. The use of TTG in elementary classrooms can be an effective way to decrease transition times. This easy to implement intervention offers teachers a practical solution to increasing instructional time without disrupting the course of the normal school day.

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Appendix A

Data Collection Recording Sheet

Date	Morning Recess Transition	Lunch Recess Transition	Physical Education Transition	Criterion Time Selected	Letter Earned

Appendix B

Observer Sign In Sheet

Date	Phase	Signature

Appendix C

Social Validity Questionnaire

Questions:		1 Strongly disagree	2 Disagree	3 Agree	4 Strongly Agree
1	This treatment was effective				
2	I found this treatment acceptable for increasing the student's skills				
3	I think the student's skills would remain at an improved level even after the treatment ends				
4	This treatment quickly improved the student's skills				
5	I would be willing to carry out this treatment myself if I wanted to increase the student's skills				
6	I would suggest the use of this treatment to other individuals				