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AUTHOR: Cheryl Fletcher

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Jodi Robledo, Ph.D
PROJECT COMMITTEE CHAIR

[Signature]

DATE: 4/25/13

Jacqueline Thousand, Ph.D
PROJECT COMMITTEE MEMBER

[Signature]

DATE: 4/25/13

PROJECT COMMITTEE MEMBER

[Signature]

DATE

PROJECT COMMITTEE MEMBER

[Signature]

DATE
Using Games in Inclusive Classrooms to Improve the
Behavior and Academic Performance
of Students with Attention Deficit Hyperactivity Disorder

by

Cheryl Fletcher

A Project Paper
Submitted in Partial Fulfillment of the
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Abstract

This paper details the positive effects of classroom games on students with Attention Deficit Hyperactivity Disorder (ADHD) in inclusive classrooms. Key research includes a 1973 DeVries and Edwards study that demonstrated improved peer-relationships between students who played classroom games. Studies by DuPaul and Stoner (2003) and Fabiano et al. (2007) endorsed classroom games as a strategy for improving student behavior. Geurtz, Luman, and van Meel (2008) focused on the reasons why children with ADHD are motivated by games, and how motivation results in improved academic performance. These findings are important in a climate where many general education teachers have expressed resistance towards inclusion. For example, a study by Van Reusen, Shoho, and Barker (2007) revealed that many general education teachers are reluctant to include special education students in their classrooms. Specifically, these teachers fear increased problems in student behavior. This project provides a website for kindergarten through fifth grade teachers who would like to learn about using classroom games to improve peer-relationships and student behavior, motivation, and academic performance. It is designed to address the academic, social, and behavioral needs of all students in inclusive classrooms. While it provides a preliminary way to align games with the new California Common Core State Standards, additional research will be needed once teachers begin to incorporate the Standards into their lesson plans.

Keywords: games, ADHD, inclusive classrooms, inclusion, behavior, motivation, academic performance, peer-relationships
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Chapter One

Introduction

Picture this: It is Monday morning. Ms. B stands before an inclusive class of 33 fourth grade students who are about to begin the day’s English language arts lesson. Nearly one-third of her students have learning disabilities or Attention Deficit Hyperactivity Disorder (ADHD) with receptive and expressive language impairments; another third—with some overlap—are English Language Learners (ELL) at various levels of English proficiency. The rest of the class is comprised of general education students with an assortment of academic and behavioral strengths and weaknesses. Ms. B begins with a review. “Yesterday we learned about compound sentences with compound predicates and compound subjects.” She queries the students about the meaning of these terms. Next, she has the students open their English books to page 42 and, on an overhead projector, she highlights the first example of two sentences that can be combined into a compound sentence. She asks for, and elicits volunteers to combine the sentences. In a second example, Ms. B asks the students to combine two sentences in cooperation with a “shoulder-buddy.” Then, at random, she calls on various student-pairs to share their answers with the class. Satisfied that her students get the gist of the lesson, she distributes worksheets to each student and directs them to “get to work.” After 5 minutes, she observes that things are not going well. “A” has not started the assignment because he is cleaning his glasses obsessively; “M” is making burping noises to the amusement of “S”, who then mimics him; “C” has taken everything out her desk cubby, as she looks for a pencil; “T” is fixated on a book she recently purchased at the book fair. While each of these students has ADHD, things are not much better with the rest of the class. Ms. B concedes that it is going to be one of those days when nearly everyone will ask to sharpen a pencil, retrieve a backpack, or go to the restroom.
Now picture this: Ms. B stands before the same class and announces: “Guess what? We’re going to play a really fun game today!” The same 33 students snap to attention, and there is an excited murmur.

“Alright!” exclaims “C”. “What’s the game?”

“Can we pick partners? asks “M”? “I want to be partners with “D”.

“Can I hand out dry erase boards? asks “S”.

“Oooh!” exclamies “P”. “Let me hand out erasers!”

“Hold on, hold on,” grins Mrs. B. “Yes you’re going to pick your partners but no, we won’t need the dry erase boards. Today, partners are going to create a poster to play Judge and Jury. This is how it works: Each partner-pair will make a poster and then present and explain it in front of the class. The class will act as jurors and award points. When there is a dispute about points, I’ll be the final judge.”

The students can barely contain their excitement. Ms. B then explains that partners will combine sentences to create compound sentences from the ten problems on page 42 of their English textbook. She reviews the process, using an overhead projector, and has the students practice as a group. As the students get ready to play, she explains the point system: Two points will be awarded for every sentence pair that has been correctly combined; an additional point will be rewarded for sentences with illustrations. A point will be awarded for correct capitalization and punctuation. Finally, super creative sentences will receive a bonus point. Students are allowed to name their partner-pair. Five minutes later, the students are actively engaged with poster sheets and colored markers. The hum of happy voices can be heard throughout the classroom. During the subsequent presentations, the students gather around the
poster presenters in rapt attention, offering playful criticism, suggestions, and praise. They next
day, they beg Ms. B to play Judge and Jury again.

The previous scene captures a real-life day in an inclusive classroom of fourth graders. A
potentially boring subject was made fun and exciting. The students were engaged and
completely on task. Discussions between partners were on-topic. In the follow up presentations,
the students were proud of their work and eagerly studied and critiqued their classmates’
sentences. The English learners, students with learning disabilities, and students with ADHD
were indistinguishable from their classmates. As importantly, the students were reading, writing,
listening and speaking. The bottom line was, learning, with a capital “L.”

Definition of the Problem

After observing this, and similar lessons in a dynamic inclusive classroom, I asked
myself: If a game can turn compound sentences into a fun, valuable learning experience, why
aren’t teachers making games an everyday part of their lesson plans? I asked a few teachers for
their opinions on classroom games. Most mentioned using games as end-of-the year, or after-test
“free time.” One or two said games were either too noisy or distracting. Nearly all admitted that
they didn’t know many games and, even if they did, they wouldn’t know how to incorporate
them into their lessons plans.

In this chapter, we will look at the research questions that will guide this project. A
preview of the literature will examine research on the many positive effects of classroom games
on students with ADHD. It will also explore some of the reasons why teachers have objected, or
been reticent about using games. Next, we will examine the methodology I used in researching
this topic and in developing a working product for teachers in inclusive classroom environments.
Next, the significance of this project will be examined in the context of the increasing number of
students who have been diagnosed with ADHD, as well as the current educational trend towards inclusive classrooms. Finally, I will define key terms to be used throughout the paper and project.

Purpose of the Project

The research questions that will guide this project are: 1) Do empirical studies support anecdotal observations that classroom games improve the behavior, motivation, academic performance, and peer-relationships of elementary school students with Attention Deficit Hyperactivity Disorder (ADHD) in inclusive classrooms? 2) How might games be incorporated into lesson plans to meet the goals of the new California State Common Core Standards?

Preview of the Literature

Numerous research studies validate the positive effects of educational games for students with ADHD in inclusive classrooms. A 1973 DeVries and Edwards study focused on improved peer-relationships as a by-product of classroom games. And though peer-relationships are given less focus in recent literature, they are frequently mentioned as a positive outcome of cooperative learning structures that include games. Studies by DuPaul and Stoner (2003) and Fabiano et al. (2007) awarded positive marks to the use of games as a behavior modification strategy. These studies are aligned to research that ties games to motivation, and motivation to improved behavior and academic performance (Eklof, 2007; Kusman, Sieber, & Harold, 2000; Taht & Must, 2010). While the positive effects of motivation can be seen in students both with and without learning disabilities, Geurtz, Luman, and van Meel (2008) explored some of the reasons why the brains of children with ADHD are particularly responsive to motivation.

Less heartening, is research into general education teachers’ attitudes regarding inclusive classrooms and students with disabilities. For example, a study by Van Reusen, Shoho, and
Barker (2007) revealed that all too many general education teachers feel negatively about including special education students in their classrooms. For these teachers, potential behavior problems are a major concern. Research suggests that these teachers might benefit from professional development programs that include behavioral modification and differentiated teaching strategies (Bradley and West, 1994; Malarz, L., 1996; Van Reusen et al., 2007)

**Preview of the Methodology**

In developing this project, I first imagined the kind of product that elementary school teachers (K-5) might want to use to integrate games and the new California Common Core State Standards in their lesson plans. I decided that a website would be the ideal vehicle for this project because it would be both free and easily accessible to most teachers. In developing this website, I considered ease-of-use, current educational “best practices,” and the objectives of the California Common Core State Standards, in math and English, for students K-5. I collected, reviewed, and considered a large number of games for the site. During the review, I noted whether or not each game met my “best practices” criteria and promoted collaborative learning. When necessary, and if possible, I redesigned games to meet my criteria; games that could not be redesigned were eliminated from the list. I then wrote game data sheets that included the name of each game, the materials needed to play the game, possible student configurations (whole class, partners, small groups, or individuals), and appropriate subjects and grade levels. Next, I studied the new, California Common Core State Standards for students, kindergarten through fifth grade, and devised a way to align individual games to individual standards. Finally, I researched website-creation software, created a website, uploaded my data, and posted it to the Internet.
Significance of the Project

This project is designed to address two current issues of concern to educators: First, it focuses on the increasing number of students who have been identified as requiring special education services for ADHD. Second, it addresses the mandate to—whenever possible--deliver instruction to students with disabilities in a general education setting. Research has indicated that classroom games are one of the strategies that teachers can use to promote the positive behavior, peer relationships, motivation, and academic achievement of all students (DeVries & Edwards, 1973; Fabiano et al. 2007; Shaw et al., 2005). Moreover, there is evidence that games are particularly effective in motivating students with ADHD (Geurtz et al. 2008).

Despite the potential social and learning benefits of classroom games, teachers are often reticent to use them as an instructional strategy. Some doubt their educational value and others fear negative behavioral consequences (Pastore & Falvo, 2010). This project is designed to give teachers an easy way to access, learn about, and then try using games in their lesson planning. It is hoped that they will see the “proof in the pudding:” Classroom games are a great way to get students actively involved in, and excited about learning. Moreover, they can be structured to actually improve student behavior.

Summary of the Chapter

The description of a fourth grade class having fun, and actively engaged in learning, is every teacher’s dream. Fortunately, this dream can be realized, even in an inclusive classroom that includes students with learning disabilities and significant behavior problems. Research supports the use of cooperative learning structures, like games, to support students socially and academically. It is hoped that as new and veteran teachers explore various models of cooperative
learning, they will discover the hidden value of classroom games. Likewise, it is hoped that this project will provide an easy way for teachers to incorporate games into their lesson plans.

Definition of Terms

**Attention Deficit Hyperactivity Disorder (ADHD)** – “A condition that interferes with a person’s ability to regulate activity level, inhibit behavior, and attend to tasks in developmentally appropriate ways” (Ravitch, 2007, p. 22).

**Autism Spectrum Disorder (ASD)** – A group of pervasive, developmental brain disorders “that involves the inability to interpret the emotions of others and that significantly affects verbal and nonverbal communication. Individuals with autism have difficulty with the social interaction necessary to ordinary functioning in social” and other settings (Ravitch, 2007, p. 24).

**Behavior modification** – “Actions or strategies devised to change the way a person customarily acts in certain situations. In the classroom, behavior modification may involve systematic use of rewards and punishments to shape students’ classroom deportment” (Ravitch, 2007, p. 29).

**California Common Core State Standards** – Written educational standards, published by the State of California, that describe “what students should know and be able to do” by subject and grade.

**Classroom goal structures** - The messages students glean from their teachers and other students regarding appropriate education goals.

**Cognitive control** - “A set of strategies, each involving a particular mental process, each consisting of levels of organization from global to differentiated, and each reorganizing so that the attributes of internal stimuli (fantasies) and external stimuli (task at hand) either are assimilated or avoided in serving adaptation and learning” (Bearison, 1986, p. 76).
Contingency management – A strategy that, primarily, trains “parents in the use of appropriate contingencies to facilitate the child's exposure or approach behavior toward feared objects or situations” (Hughes, La Greca, & Conoley 2001, p. 231).

Expressive language impairment – An impairment in the ability to express oneself through speech and/or writing.

Impulse control – The ability to defer or delay pursuit of something desired.

Inhibitory performance – The ability to stop a particular action upon receiving a predetermined prompt.

Interference control - The ability to avoid distraction and stay focused on a subject or task.

Inclusive classroom – A classroom that integrate general and special education students. “To the maximum extent possible, students with disabilities are supposed to be educated alongside their peers in regular education classrooms unless the nature or severity of the disability of a child is such that education in regular classes with the use of supplementary aids and services cannot be achieved satisfactorily” (Ravitch, 2007, p. 119).

Resource center – A classroom where students with disabilities receive individual or small-group instruction (frequently in English and mathematics). Often, these students receive instruction in other subjects in a general education classroom setting.

Shoulder buddies – A term sometimes used by teachers when directing students to confer or collaborate with the student next to them.

Tangible/non-tangible reinforcers – Rewards offered to students, often as reinforcement for good behavior. Tangible reinforcers might include prizes; non-tangible reinforcers might include privileges.
**Token economies** - A classroom behavior modification strategy that teachers use to reward students for positive behavior. In token economies, teachers frequently use prizes, recognition, or privileges as rewards.
Chapter Two

Literature Review

For decades, the behavior management and academic achievement of children with Attention Deficit Hyperactivity Disorder (ADHD) have been significant topics for researchers and educators. Never has this been more true than today when, according to The American Psychiatric Association, the estimates of school-aged children with ADHD range from 3%-7%, with even higher percentages—as high as 9.5%--being reported by parents (http://www.cdc.gov/ncbddd/adhd/data.html). Additionally, inclusive classrooms now serve a significant number of the students who previously received instruction in special education classrooms. Among those students are many with ADHD.

Recent studies indicate that inclusion is not embraced by all general education teachers. In a recent University of Texas study, Van Reusen et al. (2007) surveyed 125 high school teachers. Nearly 54% expressed an “attitude or belief that the inclusion of students with disabilities would negatively impact the learning environment, their delivery of content instruction, and the overall quality of learning in their classrooms” (Van Reusen, et al. 2007, p. 13). The researchers concluded that increased professional development might improve the less-than-enthusiastic attitudes of general education teachers. Of even greater concern, and especially for students with ADHD, is the data analyzed as part of a larger, 2000 study that measured teachers’ attitudes towards their students with disabilities in their inclusive classrooms (Cook, 2000). Data was collected from 70 general education teachers that compared their attitudes of “attachment, concern, indifference, and rejection” towards students with obvious disabilities to those with hidden disabilities.
Of the 173 included students with hidden disabilities . . . 55 (31.8” ) were
nominated by their teachers in the rejection category. Alternatively, teachers
nominated only 16.7% . . . of included students with obvious disabilities
among their students that they would be most relieved to have removed from their
class” (Cook, 2000, p. 209).

Cook concluded that perhaps teachers were more compassionate towards students with the
obvious disabilities that “explained and excused” their unique needs. In contrast, students with
mild or hidden disabilities “violated expectations” and were rejected by general education
teachers because “they fell [sic] outside of teachers’ instructional tolerance and posed [sic]
classroom management problems” (Cook, 2000, p. 209).

The manifestations of negative teacher attitudes were apparent in an early study by Bryan
(1974). Bryan, compared the social behavior and task-oriented activities of children with
learning disabilities in general and special education settings. The participants in the study were
ten third grade boys with learning disabilities. Over a five month period, the participants were
observed and their behavior occurrences were coded under four general categories: Task-
Oriented, Non-Task Oriented, Social Interactions, and Waiting. Additionally, the study
evaluated the impact of the environment on child and, conversely the impact of the child on
his/her environment. Results from this study indicated that children with learning disabilities
were more likely to be ignored by teachers and their peers. Additionally, learning disabled
children spent less time on Task-Oriented activities in a general education classroom. In contrast,
they spent less waiting time, and a significantly greater amount time on Task-Oriented activities
when these students were in a special education setting.
These studies do not bode well for the student with ADHD. Despite its somewhat “hidden” nature, ADHD can severely affect a student—both academically and socially. Students with ADHD often struggle to complete assignments, maintain focus, and control impulses (e.g., out-of-seat behavior, talking, and fidgeting). Other common characteristics of students with ADHD include a lack of engagement, disorganization of materials and assignments, and difficulty with social relationships. Consequently, students with ADHD frequently pose behavioral problems for their teachers (Arcia, Frank, Sanchez-LaCay, & Fernandez, 2008). A study of primary classroom teachers’ understanding of behavior strategies for students with ADHD concluded that “children with ADHD place a substantial demand on teacher skills and time. “Results of this study are consistent with prior investigations and suggest that teachers’ understanding of the condition, and of classroom management options, is very limited” (Arcia et al., 2000, p. 98). As students with ADHD continue to populate inclusive classroom, general education teachers will need to master a variety of different—and differentiated—strategies to meet their needs.

Studies support the use of classroom games as a sometimes-overlooked strategy for promoting positive student behavior, motivation, peer-relationships, and academic achievement (DeVries & Edwards, 1973; Fabiano et al., 2007; Shaw et al., 2005) Additionally, games offer a number of other benefits: When used as an instructional strategy, classroom games 1) can be structured to accommodate various student learning styles (i.e. visual, auditory, kinesthetic); 2) give students different ways to interact with information; 3) give teachers different ways to offer students choices; 4) can be designed to encourage peer-tutoring; 5) reinforce learning; 6) can be used for test review and preparation; 7) encourage teamwork; 8) provide immediate feedback; 9)
can replace boring worksheets or drill work; 10) encourage both individual and team achievement” (Sugar & Sugar, 2002, pp. 4-8).

Classroom Games

It is fairly safe to say that most American classrooms are not well stocked with games—educational or otherwise. While educational games are plentiful, in versions suitable for individual, small group, and whole-class participation, teachers often relegate them to “end of the year” or “after the big test” activities. Speculatively, the paucity of classroom games could be explained by a variety of reasons: Games are fun and, for many, education is not supposed to be “fun”; financially strapped school districts can barely afford books, much less games; classroom management is perceived as being more challenging when students are “playing,” and most games are not aligned to the curriculum, let alone to State Standards.

Classroom Games and Teacher Attitudes

Very little research has been conducted on teachers’ attitudes and opinions about using classroom games as an instructional strategy. Moreover, formal research has been largely limited to studies that examine teacher opinions about computer games. Nevertheless, computer game studies are revealing. In a 2010 study conducted by Pastore and Falvo, ninety-eight pre-service and in-service teachers were queried with a survey that included 18 Likert scale, and four open-ended questions about computer gaming in the classroom. The study’s open-ended questions included: “1) How do you define gaming? 2) What are the advantages of gaming as a classroom tool? 3) What are the disadvantages of gaming as a classroom tool? 4) Do you have other thoughts about gaming as a classroom tool?” Results from the Likert scale and open-ended questions indicated that only about half of the teacher-participants were using, or intended to use games for classroom instruction. The majority of the participants believed that games were a
valuable instructional tool, particularly in motivating students. Nevertheless, many participants were of the opinion that games should not supplant “traditional lectures” (Pastore & Falvo, 2010, p. 6). Additionally, they believed that classroom games were “too distracting” and a potential hindrance to behavior management.

In a 1982, Densgombe hypothesized an altogether different reason why teachers often avoid some of the more permissive teaching strategies, like games. Citing Taylor & Dale (1971), Denscomble noted a “discontinuity in the process of becoming a teacher between the content of college courses and the practical demands of teaching” particularly in the area of classroom management (p. 250):

The hidden pedagogy permeates the understanding teachers (including newcomers) have about the essentials of the job. It is an implicit theory of teaching and is based on the assumption that without first establishing classroom control . . . there is no chance of being able to put across the subject matter of the lesson (p. 250).

In short, many teachers consider classroom games to be an invitation for student misbehavior. The fact is, recent studies contradict this belief, and support classrooms games as a way to improve student behavior, as well as motivation, peer-relationships, and academic performance.

**Classroom Games and Behavioral Modification Strategies**

Using games as a strategy for improved classroom behavior is supported by current theories of classroom behavioral modification strategies. The classroom behavioral modification strategies that have been widely studied, and that are included in most lists of best practices, fall into two categories: The first, clinical behavior therapies (e.g., clear instructions, praise), are considered to be less intensive than the second, contingency management approaches (e.g., token
Behavioral approaches in the classroom typically involve working with teachers to modify antecedents (e.g., commands, establish rules and behavioral expectations), and consequences (e.g., rewards for meeting behavioral expectations, punishments following proscribed behaviors) of targeted behaviors” (Fabiano et al., 2007, p. 197).

Current research shows that both low and high intensity behavior modification strategies result in better student behavior and academic focus (Fabiano et al., 2007). In their 2007 study, Fabiano et al. used a special education setting to compare the effectiveness of behavior modification strategies to medication. The study also compared the effectiveness of different types of behavior modification strategies, without medication. Behavior modification strategies were classified as no behavior modification (NBM), low-intensity behavior modification (LBM), and high intensity modification (HBM). The NBM was intended to approximate a general education classroom using standard classroom management approaches. The LBM used clinical behavior therapy strategies, and the HBM used contingency management approaches. Study results suggested that both LBM and HBM procedures similarly decreased violations of classroom rules and improved academic productivity. Perhaps the most important finding from this study was the evidence that “to obtain the comparable effects across the school day of a low dose of medication combined with a behavioral treatment . . . four times as much medication was required . . . if the medication was used alone” (Fabiano et al., 2007, p. 211). This finding suggests that effective behavior modification strategies might, at the very least, lessen the amount of medication required to help a student with ADHD through his/her school day.

In general, low-intensity clinical behavior therapies are the strategies of choice for the general education classroom teacher because of their similarity to standard classroom management techniques. Contingency management approaches have met with resistance from
some general education teachers who find token economies or behavior support plans logistically difficult to administer to individual students with significant behavior problems. Additionally, teachers have reported complaints from students and parents, who feel this type of reward system excludes the students without behavior problems (Filcheck, McNeil, Greco, & Bernard, 2004).

This issue is addressed by Filcheck et al. (2004) who compared the effectiveness of a whole-class token economy approach called the “Level System,” to two behavior modification strategies. “The Level System is a whole-classroom approach for managing disruptive behavior that utilizes behavioral management strategies such as a token economy, response cost, stimulating rewards, and strategic attention” (Filcheck et al., 2004, p. 351). Study participants included a teacher and her 17 preschool general education students, described by the teacher as “out of control.” The teacher was trained to use the Level System, as well as Child-Directed Interaction (CDI), and Parent-Child Interaction Therapy (PCIT). As part of the study, the teacher and the students’ parents were asked to rate their satisfaction with the three, separately administered teacher interventions. Results of the study found that “the amount of inappropriate behavior exhibited in the classroom decreased with implementation of the Level System” and “resulted in a more positive classroom environment” (Filcheck et al., 2004, p. 359). Additionally, inappropriate behavior further decreased when CDI and PDI skills were added. While the teacher was more positive about the CDI and PDI strategies, she elected to use the Level System post-study. Parent satisfaction with all strategies was high.

These results were consistent with an earlier study, Anhalt, McNeil, and Bahl (1998) that looked at the effectiveness of using “The ADHD Classroom Kit: An Inclusive Approach to Behavior” that was designed for whole-class use in kindergarten through sixth grade general education classrooms. “The basis of the program is that groups of children try to follow the class
rules and instructions in exchange for the privilege to play the Rewards Target Game (RTG), several times throughout the school day (Anhalt et al., 1998, p. 69). The researchers used the Rewards Target Game because it addressed several of the dispositions observed in children with ADHD: 1) Children with ADHD find academic tasks to be “repetitive and tedious” (Anhalt et al., 1998, p. 69) and the game motivates students to stay focused on academic work. 2) Research has shown that children with ADHD benefit from frequent breaks, and playing RTG at various intervals throughout the day provides those breaks. 3) Research has also indicated that children with ADHD benefit from frequently administered rewards, another aspect of RTG. 4) Peer relationships help children with ADHD become more adept in social interactions and behaving appropriately. RTG provides children with the opportunity to practice these skills in a natural setting. The researchers coded classroom observations of a six-year old girl with ADHD, over a period of 23 days, in a general education classroom. Study results indicated that the student reached behavior levels “near normal” when The Kit and RTG were used class-wide. The teacher’s “ratings of hyperactivity reached clinical and borderline clinical significance levels during the baseline and reversal conditions, respectively.” Additionally, the teacher rated her satisfaction with this program as a 47 out of 50” (Anhalt et al., 1998, p. 77). Though promising, it would be difficult to generalize these findings without expanding the study to a greater number of participants.

These studies on behavior management strategies suggest that the more intensive, contingency management approaches may be suitable interventions for students with ADHD in both special and general education classroom settings. “The Level System” and “The Rewards Target Game” used “token economies” as a whole-class strategy, and avoided the pitfalls of a
selective system of punishments and rewards. Moreover, when games are aligned to the curriculum, they can potentially support the behavior of all students.

**Classroom Games and Peer Relationships**

Improved peer relationships are another benefit to classroom games. Long before the advent of personal computers, an early study by DeVries and Edwards (1973) compared the effects of games, teams, and games with teams, on classroom processes. Participants included 110 seventh grade students from four different math classes. For the purposes of the study, the students played a math game called Equations (Allen, 1969) and took standard math quizzes. Research assistants observed and rated student behavior. Additionally, they collected student reports on peer relationships and classroom environment that were later analyzed using the Learning Environment Inventory. Academic achievement was not measured.

Results of the study supported the use of student teams and student teams playing games for improving classroom processes. When classroom games were played in teams, the students experienced an increase in peer relationships, improved perceptions of schoolwork difficulty, and enhanced enjoyment. Teams alone increased peer relationships and “mutual concern” among students, but did not “make the class more enjoyable or less difficult” (DeVries & Edwards, 1973, p. 315-316). One of the most interesting results of this study was the researchers’ conclusion that “it appears that if a student group is given feedback on the performance of its members, the students will concentrate on the members who need the most help” (DeVries & Edwards, 1973, p. 315). Presumably, this type of peer tutoring could lead to improved social relationships and learning outcomes, though more research would be required to prove or disprove that hypothesis.
Classroom Games and Student Motivation and Academic Performance

The proliferation of educational computer games has spawned several studies that examine classroom games in the context of student motivation. A study by Ke (2008) compared the use of educational computer games to "paper-and-pencil" drills to determine if games would produce more positive "math learning outcomes" for 487 fifth grade students from 18 different classrooms. The author also examined the effects of using "alternative classroom goal structures" (e.g., individualistic, competitive or cooperative) to see if variations in goal structures would increase or decrease the effectiveness of computer games (Ke, 2008, p. 543). Study results indicated that computer games were “significantly more effective in promoting learning motivation but not significantly different in facilitating cognitive math test performance and metacognitive awareness” (Ke, 2008, p. 552). Cooperative goal structures increased student motivation "significantly" and individualistic goal structures resulted in a slight improvement in cognitive learning.

Klein and Freitag (2012) used a math board game and supplemental reading material to study the effects of instructional games on student motivation and performance. The researchers designed the game to conform to existing educational game theories. Seventy-five undergraduate students in a class on educational psychology participated in the study. Using a multivariate analysis of variance (MANOVA) to test the differences between groups, study results indicated that the game had "a significant effect on motivation" and received high marks from the participants “in the areas of attention, relevance, confidence building and satisfaction” (Klein & Freitag, 2012, p. 306). While adding supplemental reading material did not further increase motivation, it did improve performance, suggesting that games were—at the very least—a useful addition to other teaching materials and strategies.
Classroom Games and Students with ADHD

The relationship between motivation and academic performance in individuals with ADHD has received significant attention by researchers. The connection between the two is rooted in the ADHD brain. Individuals with ADHD have deficits in cognitive control which, in the broadest sense, is how the human brain processes information and directs behavior (Geurtz et al, 2008). Two different neuro-developmental pathways can lead to ADHD: an executive dysfunction (i.e., cognitive control) pathway, linked to deficits in interference control, and a motivational dysfunction pathway, linked to suboptimal reinforcement processes in children with ADHD. It is suggested that these pathways show a non-reciprocal relationship, with the motivational pathway affecting the cognitive control pathway (Geurtz et al., 2008).

An individual’s interference control, as an aspect of cognitive control, is reflected in their ability to control their actions by reducing or eliminating responses to irrelevant information. Individuals with ADHD are “highly sensitive to motivational manipulations since reward or punishment affect performance on a broad range of tasks” (Geurtz et al., 2008, p. 849). For that reason, contingency management approaches like “token economies,” with tangible, behavior-dependent rewards and loss of rewards (e.g., prizes, privileges), help improve the behavior and task performance of students with ADHD (Geurtz et al., 2008).

Geurtz et al. conducted a 2008 study to see if non-tangible reinforcers (e.g., praise, competition) would also influence interference control in students with ADHD and Autism Spectrum Disorder (ASD). The participants in this study included 77 boys between the ages of 8 and 13 in the Netherlands: 22 with ADHD, 22 with ASD, and 33 classified as typically developing (TD). The researchers “used an adapted version of an Eriksen Flanker task (Eriksen & Eriksen, 1974)” that is often used to study interference control (Geurt et al., 2008, p. 848).
After practicing, the students spent two and one half hours playing a game that features characters from the cartoon Sponge Bob. There were six experimental blocks of 88 trials each, using two motivational conditions: “a neutral condition in which standard instructions were given to respond as accurately and quickly as possible, and a motivational condition in which the children were told that they were competing with peers” (Geurtz et al., 2008, p. 851). The results of the study were consistent with other studies that found motivation to have a positive effect on cognitive control. Moreover, the study showed that non-tangible motivation had a “more general effect on basic information processing” (Geurtz et al., 2008, p. 854), resulting in the improved performance of the children with ADHD. This was not the case with the students with ASD, nor with the students considered to be TD. “Thus, the children with ADHD even improved, when motivated, when hardly any cognitive control was needed to perform the task adequately” (Geurtz et al., 2008, p. 854). The results of this study support the idea that students with ADHD are highly motivated by games, and their task performance improves, even when there is no tangible reward tied to the game’s outcome.

Using a mixed method design, Shaw, Grayson, and Lewis (2005) conducted a "small scale preliminary investigation" to look at the differences in executive function and attention when students were engaged in two different computer tasks. In the first task, students played two educational computer games. In the second task, students completed the CPT II and Pokemon Task, both of which measure attention and impulsivity. While the Pokemon Task uses characters in color, the CPT II uses characters in black and white. Study participants included 36 students between the ages of 6 years, 5 months and 13 years 10 months. Eighteen students with ADHD were matched “as closely as possible” with 18 “typically developing students” (Shaw et al.,
Results of the study showed that, when playing the two computer games, there was no difference in the inhibitory performance in the two groups of students. In contrast, the typically developing participants showed no significant difference on the CPT II and Pokemon tasks, while the students with ADHD showed a significant reduction in error making “on the more game-like” Pokemon Task (Shaw et al., 2005, p. 166). It is important to note that all of the tasks in this study were performed on a computer, with mostly similar outcomes from the TD students and students with ADHD. The exception was the improved task performance of the students with ADHD, in response to the “game-like” Pokemon task.

Slusarek, Velling, Bunk, and Eggers (2001) claimed that the impact of factors such as interest, effort, and motivation can significantly alter the performance of participants with ADHD. Such hypotheses are closely linked and supported by widespread neurological evidence of an under aroused state in ADHD. It is certainly likely that computer games stimulated greater motivation, effort, and arousal than more traditional laboratory-based computerized tasks under an aroused state in ADHD (Shaw et al., 2005, p.166).

**Summary**

With the current move towards inclusion, students with ADHD and other disabilities are increasingly receiving instruction in a general education setting. Research has shown that many general education teachers resist inclusion because they fear an increase in student behavior problems. Worse still, some of these teachers express negative feelings about these students—particularly if their disabilities are less obvious. In response, educational researchers have recommended that general education teachers receive increased training and support in differentiated instruction and behavior management techniques. Within this context, educational
games have been shown to be an excellent instructional strategy for inclusive classrooms. Games improve peer-relationships by engaging students in activities that can be structured around cooperative activities. Games motivate all students, but uniquely so in the case of students with ADHD. Increased motivation engages students and results in increased engagement, focus and on-task behavior. While the link to improved academic performance deserves further attention by researchers, evidence suggests a certain link between motivation and increased academic success. Finally, classroom games can be easily aligned to behavior modification strategies including those that incorporate token economies. When aligned to the curriculum, and properly implemented, students both with and without disabilities benefit from classroom games.
Chapter Three

Methodology

Project Design

In creating this project, my goal was to develop a free, easily accessible tool for teachers in inclusive classrooms to use to integrate learning games into their lesson plans. As a guiding principle, I wanted this tool to reflect current educational theories of “best-practice.” To that end, it would need to: 1) provide engaging activities to motivate students; 2) provide or promote positive behavior support mechanisms; 3) support the academic, social, and other needs of English language learners and students with disabilities; 4) promote positive peer relationships through collaborative learning activities; 5) foster the principles of the Circle of Courage (belonging, mastery, independence, generosity); 6) provide positive, equitable student roles; 7) provide opportunities for students to read, write, listen, and speak; 8) address different learning styles (visual, auditory, tactile, and kinesthetic); 9) support a 4-tiered approach to instruction and learning (direct instruction, whole group practice, partner practice, group practice, and individual practice and mastery). Additionally, I wanted to align the games with the California Common Core State Standards for kindergarten through fifth grade students.

I decided that a website would be the best vehicle for this project, and wanted to design it to include: 1) a database of games that teachers could adapt to various grade levels and subject matters; 2) a reference table of the new California Common Core State Standards for Math, and for English Language Arts and Literacy in History/Social Studies, Science and Technology, kindergarten through fifth grade; 3) a suggested method for teachers to align the games with the Standards; 4) a list of game materials and supplies with pictures and possible sources for
purchase; 5) a lesson plan template that teachers could use to import specific Standards’ verbiage
and game elements into a printable lesson plan.

While there is a proliferation of new, “educational” computer games, I decided against
including them in the project for two reasons. First, I discovered that many of these games were
developed by computer programmers—not educators. Consequently, I feared they would fail the
“best practice” criteria. Second, in my experience, most classrooms lack an adequate number of
computers to allow teachers to generalize game-playing on a daily, or near-daily, basis to an
entire class population.

**Instruments**

I discovered a wealth of teacher-reviewed games, with instructions, on the Internet. After
collecting data on over 50 games, I reviewed each game, using my “best practice” criteria
checklist. When a game fell short in one of the nine categories, I considered whether or not I
could modify it and, if not, omitted it from the list. Additionally, I considered the less obvious:
For example (as one teacher mentioned on a website) Hangman could be devastating for a
student who has experienced a family suicide).

**Procedures**

After reviewing and selecting a list of games to be included on the website, I wrote
teacher instructions for greater clarity, consistency, and lesson-planning applicability. As
anticipated, it was sometimes necessary to modify a game to meet my “best practice” criteria. I
also coded each game for possible use (practice, review, memorization, skill acquisition),
potential classroom configurations (whole class, partner, group or individual), possible subject
matter, suggested grade level appropriateness, and required materials.
I then researched and explored various online website-creation programs and discovered that Google Sites offers a free website creation and hosting product. After establishing an account, I took several days to develop the basic design and structure of the site and to master the Google Sites program.

As I developed the site, I decided to include a “page” that detailed the “best practice” criteria used in selecting the games, as well as one that offered suggestions for “making the most of classroom games.” The suggestions on that page were based on personal experience and observations of successful classroom game-play and included: 1) partner or group English learners and students with disabilities with supportive classmates; 2) introduce game rules and instructions in multiple ways (verbally, in writing, modeling, etc.), then check for understanding; 3) keep every student involved throughout the game (i.e. tally "points" as the game is played so no one is "out" until the end; 4) award material "prizes" sparingly and save prizes for special occasions; 5) award privileges--not just material items (i.e. first to leave, free bathroom pass, free homework pass, etc.); 6) consider structuring a monthly "game day" that is dependent on positive, whole-class behavior throughout the month; 7) think about ways to optimize student-opportunities to read, write, listen, and speak. I also decided to include a mini-blog where other teachers could post game ideas and feedback.

While I had hoped to create a template that teachers could use to import specific Standards’ verbiage and game elements into a printable lesson plan, this function was not available on Google sites or other website design software. Consequently, I decided to create a website page that, in table format, lists the games and their basic elements (purpose, student configuration, and subject). Links are provided from this page to lesson data sheets for each
This feature allows teachers to access an individual game, with instructions and a materials list that can be printed and attached to their lesson plans.

Perhaps the most challenging, and important, aspect of developing this project was devising a way to align the games to the Standards. After studying the Standards, I discovered that each is structured around verbs that specify what students are expected to know/learn or be able to do. Consequently, I developed a template for using backward lesson design to: 1) specifically identify what the Standards are asking the students to know or learn, and 2) identify how the students will show what they know or have learned? With this information, teachers can then review games to: 1) identify what types of game activities would further the students’ knowledge and learning about a topic, and 2) identify what students might produce or demonstrate during game-play to show what they are able to do. In addition to the “Aligning Games to Standards” template, I provided a list of the verbs, by subject, that appear in the Standards.

**Summary**

In designing a website that teachers can use to incorporate games into their lesson planning, I considered cost, ease-of-use, current educational “best practices,” and the need to incorporate the new California Common Core State Standards, across all subject areas, for students K-5. I reviewed every game to be included on the site and, when necessary or possible, modified games to meet my “best practices” criteria. I wrote instructions for each game and included relevant information for lesson planning (possible purposes and grade levels, student configurations, and materials). I used Google Sites to develop the website which includes: links to the Standards by grade level and subject, a method and template for aligning the games to the Standards, a list of the “best practices” criteria used in determining which games would be
included on the site, a list of games materials, suggestions for how to make the best out of classroom games, and a mini blog where teachers can post feedback or game suggestions. Additionally, the games can be accessed in a table format that summarizes each game, its potential purpose, class configuration, and subject-appropriateness. From this table, teachers can link to single page game instructions that can printed and attached to a lesson plan.
Chapter 4

Results

Public schools are undergoing a transformation, as inclusive classrooms replace outdated classroom structures that segregate students with disabilities from the general education population. Despite its proven success, some teachers continue to resist inclusion, citing behavioral issues as a key concern. For inclusion to work, novice and veteran teachers alike must learn, and incorporate strategies for meeting the behavioral, social, and learning needs of all students. Classroom games can be a very effective strategy for improving the behavior, peer relationships, motivation, and academic performance of students in inclusive classroom environments. Yet many teachers have admitted that they do not know enough about classroom games to incorporate them into lesson plans.

Project Overview

This website project, https://sites.google.com/site/inclusiveclassroomgames, provides teachers with an easy-to-use, free resource for accessing, learning about, and using classroom games as a teaching strategy. The website is organized in four main sections: First, a “Home Page” introduces teachers to the site’s purpose and organization. The second section, “California Common Core State Standards,” includes a subsection detailing a way to align the Standards with games. Links are provided to the California Common Core State Standards for English Language Arts (grades K-5 and 6-8), and Mathematics (grades K-5 and 6-8). Additionally, there are links to two, supplemental information sheets for use in aligning the games to the Standards. The third “Games” section includes four subheadings: 1) “Games Criteria” details the process used in selecting, and adapting, games for “best practice.” 2) “Games Supplies” is a list of materials that teachers might want to collect, in anticipation of playing classroom games.
Possible sources for these supplies have also been provided. 3) “Making Games Work” suggests ways to conduct game-play for maximum effectiveness in inclusive classroom environments. 4) “Search for Games” begins with a list of the games that have been included on the website. In summary form, games are named and categorized by possible subject(s), grade(s), class configuration(s) and purpose(s). Game names are “linked” to full instructions for each game.

Instructions include spaces for teachers to fill in the game subject, topic, and grade level. Additionally, the instructions list the game name, class configuration, purpose, materials, and instructions that can be printed and attached to lesson plans. The fourth section is a mini-blog for site users: “Post Your Game Ideas.” Website snapshots are displayed in Figures 1 – 5.
Figure 1. Home Page – This page introduces teachers to the idea that games are a great instructional strategy for improving student behavior, peer relationships, motivation, and academic achievement in inclusive classrooms. It previews the organization of the site which provides:

- an easy way to align games to the new California Common Core State Standards
- lists of classroom games and supplies
- game instruction sheets
- ideas for successful game-play
- a forum for sharing game ideas
Figure 2. California Common Core State Standards – This page is a portal with links to a page that describes how to align games to the Standards (Figure 3); it also links to the actual California Common Core State Standards for English Language Arts (grades K-5 and 6-8), and Mathematics (grades K-5 and 6-8) (Figures 4, 4a, 5, 5a, 6, 6a, 7, 7a).
Figure 3. Aligning Games/Standards – This page suggests a way to align games to the California Common Core State Standards. It recommends that, when reading a State or CAPA Standard, teachers ask themselves “What are the Standards asking the students to know or learn? How will the students show what they know or have learned?” It then suggests that one identify the verbs in the Standards verbiage which will help answer the next question: “What types of activities will further the students' knowledge and learning about this topic?” This page then links to a template (Figure 3a) and list of Standard descriptors (Figure 3b) that can be used in identifying a game activity to meet the requirements of the standards.
### Aligning Games to Standards

**Subject:** ______________________  **Grade Level:** ______________________  

**Topic:** ____________________________________________

<table>
<thead>
<tr>
<th>California Common Core State Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standard:</strong></td>
</tr>
</tbody>
</table>

*Identify what the students need to know/learn about this topic:*

What types of activities might further the students’ knowledge/learning about this topic:

*Identify what the students should be able to do, with respect to this topic:*

What “product” might the students now produce to show what they are able to do:

<table>
<thead>
<tr>
<th>CAPA Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standard:</strong></td>
</tr>
</tbody>
</table>

*Identify what the students need to know/learn about this topic:*

What types of activities might further the students’ knowledge/learning about this topic:

*Identify what the students should be able to do, with respect to this topic:*

What “product” might the students now produce to show what they are able to do:
**Figure 3b**

<table>
<thead>
<tr>
<th>Math</th>
<th>Reading</th>
<th>Writing</th>
<th>Speaking &amp; Listening</th>
</tr>
</thead>
<tbody>
<tr>
<td>analyze</td>
<td>analyze</td>
<td>choose</td>
<td>answer</td>
</tr>
<tr>
<td>apply</td>
<td>answer</td>
<td>demonstrate</td>
<td>build on</td>
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<tr>
<td>classify</td>
<td>compare</td>
<td>develop</td>
<td>create</td>
</tr>
<tr>
<td>compare</td>
<td>contrast</td>
<td>draw evidence</td>
<td>describe</td>
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<tr>
<td>compose</td>
<td>demonstrate</td>
<td>introduce</td>
<td>explain</td>
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<tr>
<td>count</td>
<td>describe</td>
<td>link</td>
<td>express</td>
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<tr>
<td>decompose</td>
<td>determine</td>
<td>orient</td>
<td>paraphrase</td>
</tr>
<tr>
<td>demonstrate</td>
<td>distinguish</td>
<td>produce</td>
<td>participate in</td>
</tr>
<tr>
<td>describe</td>
<td>draw on</td>
<td>provide</td>
<td>produce</td>
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<tr>
<td>determine</td>
<td>explain</td>
<td>recall</td>
<td>recount</td>
</tr>
<tr>
<td>distinguish</td>
<td>identify</td>
<td>recognize</td>
<td>report on</td>
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<tr>
<td>draw</td>
<td>integrate</td>
<td>support</td>
<td>review</td>
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<tr>
<td>estimate</td>
<td>interpret</td>
<td>write</td>
<td>speak</td>
</tr>
<tr>
<td>explain</td>
<td>know and apply</td>
<td>summarize</td>
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<tr>
<td>express</td>
<td>make connections</td>
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<td>tell</td>
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<td>find</td>
<td>quote</td>
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<td>organize</td>
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<tr>
<td>tell</td>
<td>recognize</td>
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<tr>
<td>understand</td>
<td>support</td>
<td></td>
<td></td>
</tr>
<tr>
<td>verify</td>
<td>write</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Figure 4 – This is a portal page to the link for the elementary school level California Common Core State Standards in English Language Arts (Figure 4a).
Figure 4a – This is the opening page to the elementary school level California Common Core State Standards for English Language Arts.
Figure 5 – This is the portal page to the link for the middle school level California Common Core State Standards in English Language Arts (Figure 5a).
Figure 5a – This is the opening page of the middle school level California Common Core State Standards for English Language Arts.
Figure 6 – This is a portal page to the link for the elementary school level California Common Core State Standards for mathematics (Figure 6a).
Figure 6a – This is the opening page for the elementary school level California Common Core State Standards for mathematics.
Figure 7 – This is a portal page to the link for the middle school level California Common Core State Standards for mathematics (Figure 7a).
Figure 7a – This is the opening page for the middle school level California Common Core State Standards for mathematics.
Figure 8. Games – This is a portal page with links to “Game Criteria” (Figure 8a), “Games Supplies” (Figure 8b-8h), “Making Games Work” (Figure 8i), and “Search for Games” (Figure 9-9y).
Figure 8a – Game Criteria - This page details the “best practices” criteria used in selecting and adapting the games for this site. The criteria includes: 1) partner or group English learners and students with disabilities with supportive classmates; 2) introduce game rules and instructions in multiple ways (verbally, in writing, modeling, etc.), then check for understanding; 3) keep every student involved throughout the game (i.e. tally "points" as the game is played so no one is "out" until the end; 4) award material "prizes" sparingly and save prizes for special occasions; 5) award privileges--not just material items (i.e. first to leave, free bathroom pass, free homework pass, etc.); 6) consider structuring a monthly "game day" that is dependent on positive, whole-class behavior throughout the month; 7) think about ways to optimize student-opportunities to read, write, listen, and speak.
Figure 8b – Game Supplies – This page lists supplies and materials that teachers might want to stock in their classrooms, in preparation for playing games.
**Figure 8c** – Game Supplies (continued)

<table>
<thead>
<tr>
<th>Item</th>
<th>Supplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual Dry Eraser Marks</td>
<td><a href="http://www.tamiaswarehouse.com">www.tamiaswarehouse.com</a></td>
</tr>
<tr>
<td>Towel Paper</td>
<td>Office Depot or Staples</td>
</tr>
<tr>
<td>Decks of Cards</td>
<td>Target, Walmart, CVS, etc.</td>
</tr>
<tr>
<td>Dry Erasers</td>
<td>Staples, Office Depot, etc.</td>
</tr>
</tbody>
</table>

[Image of table with game supplies]
**Figure 8d – Game Supplies (continued)**

<table>
<thead>
<tr>
<th>Game Supplies</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry Eraser</td>
<td>Staples, Office Depot, etc.</td>
</tr>
<tr>
<td>Flash Card Maker</td>
<td><a href="https://www.lakeshorelearning.com">Link</a> or googie &quot;flash card maker&quot;</td>
</tr>
<tr>
<td>English (ESLA) Flash Cards</td>
<td><a href="https://www.teachersaxa.com">Link</a> or google &quot;English grammar flash cards&quot;</td>
</tr>
<tr>
<td>Game Pocket</td>
<td>Many versions available on teaching product websites; google &quot;game pocket&quot;</td>
</tr>
</tbody>
</table>
Figure 8e – Game Supplies (continued)
Figure 8f – Game Supplies (continued)
Figure 8g – Game Supplies (continued)
Figure 8h – Game Supplies (continued)
Figure 8i – Making Games Work – This page offers suggestions for making the most of classroom games in inclusive environments. Suggestions include: 1) Partner or group English learners and students with disabilities with supportive classmates; 2) Introduce game rules and instructions in multiple ways (verbally, in writing, modeling, etc.), then check for understanding; 3) Keep every student involved throughout the game (i.e. tally “points” as the game is played so no one is “out” until the end; 4) Award material “prizes” sparingly. Save prizes for special occasions; 5) Prizes can be privileges – not just material items (i.e. first to leave, free bathroom pass, free homework pass, etc.); 6) Think about structuring a monthly “game day” that is dependent on whole-class behavior throughout the month; 7) Think about ways to optimize student opportunities to read, write, listen, and speak during game-play.
<table>
<thead>
<tr>
<th>Game</th>
<th>Subject(s)</th>
<th>Grade(s)</th>
<th>Configuration(s)</th>
<th>Purpose</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Baseball</td>
<td>Any</td>
<td>6&lt;sup&gt;th&lt;/sup&gt;-8&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Whole Class</td>
<td>Practice, Review, Assessment</td>
<td>Trivia game with a baseball theme.</td>
</tr>
<tr>
<td>Around the World</td>
<td>Any</td>
<td>Any</td>
<td>Small Groups</td>
<td>New Learning, Practice, Review, Assessment</td>
<td>Engaging small group activity for practicing names or terms.</td>
</tr>
<tr>
<td>Card/Board</td>
<td>Any</td>
<td>1&lt;sup&gt;st&lt;/sup&gt;-6&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Whole Class</td>
<td>New Learning, Practice, Review, Assessment</td>
<td>Good way to get students to actively listen.</td>
</tr>
<tr>
<td>Chain Reaction</td>
<td>Any</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt;-6&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Whole Class</td>
<td>New Learning, Practice, Review, Assessment</td>
<td>Encourages students to think more deeply about a subject, topic, or category.</td>
</tr>
<tr>
<td>Chalkboard Math</td>
<td>Math</td>
<td>6&lt;sup&gt;th&lt;/sup&gt;-8&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Whole Class</td>
<td>Practice, Review, Assessment</td>
<td>Problem-solving game played in teams.</td>
</tr>
<tr>
<td>Chalkboard Baseball</td>
<td>Any</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt;-6&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Whole Class</td>
<td>Practice, Review, Assessment</td>
<td>Kinesthetic game for practice and review.</td>
</tr>
<tr>
<td>Concentration</td>
<td>Any</td>
<td>1&lt;sup&gt;st&lt;/sup&gt;-6&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Small Groups, Pairs</td>
<td>New Learning, Practice, Review, Assessment</td>
<td>Activity for matching related subjects or ideas.</td>
</tr>
<tr>
<td>Detective</td>
<td>Any</td>
<td>6&lt;sup&gt;th&lt;/sup&gt;-8&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Whole Class</td>
<td>New Learning</td>
<td>Good game for introducing new material.</td>
</tr>
<tr>
<td>Dictionary Deception</td>
<td>English</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt;-5&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Whole Class</td>
<td>New Learning</td>
<td>Useful for learning new vocabulary words.</td>
</tr>
<tr>
<td>Digits Math</td>
<td>Math</td>
<td>K-6&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Whole Class</td>
<td>New Learning, Practice, Review, Assessment</td>
<td>Great for addition, subtraction, multiplication, and division facts.</td>
</tr>
<tr>
<td>Fast Facts Math</td>
<td>Math</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt;-6&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Whole Class</td>
<td>Practice, Review, Assessment</td>
<td>Encourages students to stay task-focused on math problems.</td>
</tr>
<tr>
<td>5 in 10</td>
<td>Any</td>
<td>K-5&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Whole Class</td>
<td>Practice, Review, Assessment</td>
<td>Students recall what they know about various categories of things (ex. State Capitols).</td>
</tr>
<tr>
<td>Flashcards</td>
<td>Any</td>
<td>6&lt;sup&gt;th&lt;/sup&gt;-8&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Small Groups</td>
<td>Practice, Review, Assessment</td>
<td>Good game that empowers students to generate their own questions.</td>
</tr>
<tr>
<td>Game Name</td>
<td>Grade Levels</td>
<td>Class Size</td>
<td>Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------------------</td>
<td>--------------</td>
<td>------------</td>
<td>-----------------------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flashcard Relay</td>
<td>Any</td>
<td>2nd-6th</td>
<td>Whole Class, Practice, Review, Assessment for answering questions.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Game Board Learning</td>
<td>Any</td>
<td>Any</td>
<td>Whole Class, Practice, Review, Assessment for any type of problem solving questions.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Get Out of Here</td>
<td>Any</td>
<td>6th-8th</td>
<td>Whole Class, Practice, Review, Assessment as a “ticket out the door.”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graffiti Review</td>
<td>Any</td>
<td>6th-8th</td>
<td>Whole class, Brainstorming game that forces students to get up and move around the classroom.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In-n-Out</td>
<td>Any</td>
<td>6th-8th</td>
<td>Whole Class, New Learning, Review activity for activating prior knowledge and reviewing material.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jeopardy</td>
<td>Any</td>
<td>6th-8th</td>
<td>Whole Class, Practice, Review, Assessment based on the classic trivia show.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Judge and Jury</td>
<td>English</td>
<td>Any</td>
<td>Pairs/Whole Class, Practice, Review, Simple review game that gets students out of their seats.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>King or Queen of (fill in the blank)</td>
<td>Any</td>
<td>6th-8th</td>
<td>Whole Class, Review, Simple review game.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moving On Up</td>
<td>Any</td>
<td>K-4th</td>
<td>Whole Class, Practice, Review, Kinesthetic question and answer activity.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiplication Bingo</td>
<td>Math</td>
<td>6th-8th</td>
<td>Whole Class, New Learning, Practice, Review, Assessment through a game of bingo.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 vs. 30 (or whatever the class size is)</td>
<td>Any</td>
<td>6th-8th</td>
<td>Whole Class, Practice, Review, Multiple choice-based game where one student tries to beat the whole class.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pass the Chicken!</td>
<td>Any</td>
<td>K-5th</td>
<td>Whole Class, Practice, Review, Kinesthetic activity to encourage recall.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Password</td>
<td>Any</td>
<td>3rd-6th</td>
<td>Whole Class, New Learning, Practice, Good activity to encourage speaking, listening, and participation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Persuasion</td>
<td>Any</td>
<td>6th-8th</td>
<td>Whole Class, New Learning, Practice, Review, Assessment, Students debate and discuss controversial issues.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Game Name</td>
<td>Subject</td>
<td>Grade(s)</td>
<td>Setting</td>
<td>Activity Type</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------</td>
<td>---------</td>
<td>----------</td>
<td>----------</td>
<td>--------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Piecing the Puzzle</td>
<td>Any</td>
<td>1st-5th</td>
<td>Whole Class</td>
<td>New Learning, Practice, Review, Assessment</td>
<td>Requires students to think about something they are reading.</td>
</tr>
<tr>
<td>Place Your Bets</td>
<td>Any</td>
<td>6th-8th</td>
<td>Whole Class</td>
<td>Practice, Review</td>
<td>Versatile review game that incorporates gambling.</td>
</tr>
<tr>
<td>Power-Write</td>
<td>Writing</td>
<td>6th-8th</td>
<td>Whole Class</td>
<td>New Learning, Activating Prior Knowledge</td>
<td>Good game for activating prior knowledge before introducing a new topic.</td>
</tr>
<tr>
<td>Quick Questions</td>
<td>Any</td>
<td>3rd-5th</td>
<td>Whole Class</td>
<td>Practice, Review, Assessment</td>
<td>Requires students to compose and answer questions about what they are learning.</td>
</tr>
<tr>
<td>Say and Switch</td>
<td>Any</td>
<td>6th-8th</td>
<td>Whole Class</td>
<td>Review</td>
<td>Excellent group review game for auditory learners.</td>
</tr>
<tr>
<td>Scavenger Hunt</td>
<td>Any</td>
<td>6th-8th</td>
<td>Partners, Small Groups</td>
<td>New Learning, Review</td>
<td>Fact finding game using multiple resources.</td>
</tr>
<tr>
<td>Silence</td>
<td>Any</td>
<td>Any</td>
<td>Whole Class</td>
<td>New Learning, Practice, Review, Assessment</td>
<td>A kinesthetic activity that requires students to put things in order.</td>
</tr>
<tr>
<td>Silent Speed Ball</td>
<td>Any</td>
<td>6th-8th</td>
<td>Whole Class</td>
<td>Practice, Review, Assessment</td>
<td>Ball throwing fact recall game.</td>
</tr>
<tr>
<td>Snowball Fight</td>
<td>Any</td>
<td>6th-8th</td>
<td>Whole class</td>
<td>Review</td>
<td>Crumpled up pieces of paper are the weapons of choice in this review game.</td>
</tr>
<tr>
<td>Sparkle</td>
<td>Any</td>
<td>1st-3rd</td>
<td>Whole Class</td>
<td>Practice, Review, Assessment</td>
<td>Excellent way to practice and review spelling.</td>
</tr>
<tr>
<td>Speed Read</td>
<td>Any</td>
<td>6th-8th</td>
<td>Partners</td>
<td>Review, Assessment</td>
<td>Students compete to pronounce vocabulary words</td>
</tr>
<tr>
<td>Story Twice</td>
<td>English</td>
<td>6th-8th</td>
<td>Small Groups</td>
<td>New learning, Review</td>
<td>Good game for practicing writing skills, or writing about a new topic.</td>
</tr>
<tr>
<td>The Quiet Game</td>
<td>Any</td>
<td>1st-2nd</td>
<td>Whole Class</td>
<td>Behavior</td>
<td>A silly game that helps young students settle down.</td>
</tr>
<tr>
<td>Times Table Football</td>
<td>Math</td>
<td>6th-8th</td>
<td>Whole Class</td>
<td>New Learning, Practice, Review, Assessment</td>
<td>Multiplication game with a football theme.</td>
</tr>
<tr>
<td>Football</td>
<td>Math</td>
<td>6th-8th</td>
<td>Whole Class</td>
<td>New Learning, Practice, Review, Assessment</td>
<td>Multiplication game with a football theme.</td>
</tr>
<tr>
<td>Game Name</td>
<td>Grade/Subject</td>
<td>Assembly</td>
<td>Purpose</td>
<td>Summary</td>
<td></td>
</tr>
<tr>
<td>-----------------------</td>
<td>---------------</td>
<td>----------</td>
<td>----------------------------------</td>
<td>----------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Toss a Question</td>
<td>Any 6th-8th</td>
<td>Whole Class</td>
<td>Practice, Review</td>
<td>Good kinesthetic review game.</td>
<td></td>
</tr>
<tr>
<td>Toss the Ball</td>
<td>Any 6th-8th</td>
<td>Whole Class</td>
<td>New Learning, Practice, Review, Assessment</td>
<td>Ball throwing fact recall game.</td>
<td></td>
</tr>
<tr>
<td>Trashketball</td>
<td>Any 3rd-6th</td>
<td>Whole Class</td>
<td>New Learning, Practice, Review, Assessment</td>
<td>A kinesthetic activity for answering questions.</td>
<td></td>
</tr>
<tr>
<td>Twister Review</td>
<td>Any K-5th</td>
<td>Whole Class</td>
<td>Practice, Review</td>
<td>A kinesthetic question and answer game.</td>
<td></td>
</tr>
<tr>
<td>Two Truths and a Lie</td>
<td>Any 6th-8th</td>
<td>Whole Class</td>
<td>Practice, Review, Assessment</td>
<td>Students must differentiate between fact and fiction.</td>
<td></td>
</tr>
<tr>
<td>War</td>
<td>Math 6th-8th</td>
<td>Partners</td>
<td>New Learning, Practice, Review</td>
<td>Competitive multiplication card game.</td>
<td></td>
</tr>
<tr>
<td>What’s Your Number</td>
<td>Math 3rd-6th</td>
<td>Whole Class</td>
<td>New Learning, Practice, Review, Assessment</td>
<td>This is especially good for learning/practicing multiplication tables.</td>
<td></td>
</tr>
<tr>
<td>Whozit/Whatzit?</td>
<td>Any 3rd-6th</td>
<td>Whole Class</td>
<td>Practice, Review, Assessment</td>
<td>Reinforces memory of names and terms.</td>
<td></td>
</tr>
<tr>
<td>You’re Outta Line</td>
<td>Any 4th-6th</td>
<td>Whole Class</td>
<td>Practice, Review</td>
<td>Fun flashcard-type activity.</td>
<td></td>
</tr>
</tbody>
</table>

Figure 9 – Search for Games - This page summarizes all of the games on the site. Games are listed alphabetically and include the game name, possible subject(s), grade(s), configuration(s), purpose(s), and a summary. Site users can click on the game name to be directed to full-page game instructions that can be printed out and attached to lesson plans. Figures 9a-9y are the full-page instruction sheets for each elementary school level game. Instructions include spaces for teachers to fill in the game subject, topic, and grade level. Additionally, the instructions list the game name, configuration, purpose, materials, and instructions. Individual instructions can be printed and attached to lesson plans.
Game Instructions

**Subject:** Any

**Grade Level:** K-5th

**Topic:** Any

<table>
<thead>
<tr>
<th><strong>Game Name:</strong></th>
<th>5 in 10</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Configuration:</strong></td>
<td>Whole Class</td>
</tr>
<tr>
<td><strong>Purpose:</strong></td>
<td>Practice, Review, Assessment</td>
</tr>
<tr>
<td><strong>Materials:</strong></td>
<td>Lists of categories</td>
</tr>
<tr>
<td><strong>Instructions:</strong></td>
<td></td>
</tr>
<tr>
<td>1. Teacher divides class into two teams.</td>
<td></td>
</tr>
<tr>
<td>2. Teacher calls on one person from each team to stand in front of the class.</td>
<td></td>
</tr>
<tr>
<td>3. The questioning team selects a category (e.g. State Capitals).</td>
<td></td>
</tr>
<tr>
<td>4. The standing member of the opposing team has 10 seconds to list 5 things from that category.</td>
<td></td>
</tr>
<tr>
<td>5. Note: In order to ensure continual participation of all students, teacher may direct students who are seated to write their answers on a small whiteboard or piece of paper.</td>
<td></td>
</tr>
</tbody>
</table>

*Figure 9a*
### Game Instructions

**Subject:** Any  
**Grade Level:** Any  
**Topic:** Any

<table>
<thead>
<tr>
<th><strong>Game Name:</strong></th>
<th>Around the World</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Configuration:</strong></td>
<td>Small Groups</td>
</tr>
<tr>
<td><strong>Purpose:</strong></td>
<td>New Learning, Practice, Review, Assessment</td>
</tr>
<tr>
<td><strong>Materials:</strong></td>
<td>Flashcards</td>
</tr>
</tbody>
</table>

**Instructions:**

1. Teacher divides students into groups of 6-8.
2. Each group sits in a circle.
3. Teacher selects a starting person in each circle.
4. Starting person stands behind student to his/her left to form a pair.
5. Teacher holds up a flashcard or poses a question to the first pair.
6. The first student (in that pair) to answer the question correctly moves clockwise to challenge the next student.
7. If the sitting student says the answer first, he/she switches places with the standing student.
8. This process continues until at least one student makes it completely around the circle.

(Note: If it is necessary to provide academic support to some students for this activity, consider giving all students a free one-time “pass”, or a ticket that entitles them to consult with a buddy.)

*Figure 9b*
**Game Instructions**

**Subject:** Any  
**Grade Level:** 1st-6th

**Topic:** Any

<table>
<thead>
<tr>
<th>Game Name</th>
<th>Card/Board</th>
</tr>
</thead>
<tbody>
<tr>
<td>Configuration</td>
<td>Whole Class</td>
</tr>
<tr>
<td>Purpose</td>
<td>New Learning, Practice, Review, Assessment</td>
</tr>
<tr>
<td>Materials</td>
<td>Notecards</td>
</tr>
</tbody>
</table>

**Instructions:**

1. Before delivering a lecture, teacher provides students with cards containing key words, phrases, or facts from the lecture.
2. While teacher lectures, students listen for the information on their cards.
3. When students hear information from their card, they post their card on the board.

*Figure 9c*
**Game Instructions**

**Subject:** Any  

**Grade Level:** 2nd-6th

**Topic:** Any

<table>
<thead>
<tr>
<th><strong>Game Name:</strong></th>
<th>Chain Reaction</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Configuration:</strong></td>
<td>Whole Class</td>
</tr>
<tr>
<td><strong>Purpose:</strong></td>
<td>New Learning, Practice, Review</td>
</tr>
<tr>
<td><strong>Materials:</strong></td>
<td>Paper</td>
</tr>
</tbody>
</table>

**Instructions:**

1. Teacher selects a topic/category and writes it on the board (e.g. foods).
2. Each student writes the letters A to Z on a sheet of paper.
3. Students have five minutes to create an alphabetical list of things related to this category.
4. Teacher selects a student to start the game. That student must say the name of something on their list.
5. The first student calls on another student to name something that begins with the last letter of the first student’s word. The third student must name a thing that begins with the last letter of the second student’s word and so on.
6. Students who cannot come up with a word are eliminated from the game.
7. The last student standing wins the game.
8. Other possible categories: cities, songs, things in nature, people's first names, authors' names, vocabulary words).

Figure 9d
**Game Instructions**

**Subject:** Any  
**Grade Level:** 3rd-6th  
**Topic:** Any

| **Game Name:** Chalkboard Baseball  
**Configuration:** Whole Class  
**Purpose:** Practice, Review, Assessment  
**Materials:** Spongy Nerf-Type Ball, Flashcards  
**Instructions:** |
|---|---|
| 1. Teacher draws a giant baseball diamond on the board with big circles around the four bases and places ball in a bucket filled with water.  
2. Teacher divides students into two teams.  
3. Each student takes a turn coming up "to bat" (answer a question).  
4. If student answers correctly, he/she wrings out the wet ball and throws it at the board. Wherever the ball hits, that's the base they get.  
5. If student answers incorrectly, the question gets passed to the opposing team. |

*Figure 9e*
Game Instructions

**Subject:** Any  
**Grade Level:** 1st-6th

**Topic:** Any

<table>
<thead>
<tr>
<th><strong>Game Name:</strong></th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Configuration:</strong></td>
<td>Small Groups/Pairs</td>
</tr>
<tr>
<td><strong>Purpose:</strong></td>
<td>New Learning, Practice, Review, Assessment</td>
</tr>
<tr>
<td><strong>Materials:</strong></td>
<td>Notecards</td>
</tr>
</tbody>
</table>

**Instructions:**

1. Students take turns picking up cards with words or pictures.
2. Students try to find matching or corresponding cards.
3. Sample Cards:
   - Sight words
   - Vocabulary words with definitions
   - Pictures with words
   - States with capitals
   - Words with parts of speech
4. Note: Students can create cards, or teacher can create and laminates for future use.

*Figure 9f*
**Game Instructions**

**Subject:** English  
**Grade Level:** 3rd-5th

**Topic:** Vocabulary

<table>
<thead>
<tr>
<th><strong>Game Name:</strong></th>
<th>Dictionary Deception</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Configuration:</strong></td>
<td>Whole Class</td>
</tr>
<tr>
<td><strong>Purpose:</strong></td>
<td>New Learning</td>
</tr>
<tr>
<td><strong>Materials:</strong></td>
<td>Paper</td>
</tr>
</tbody>
</table>

**Instructions:**

1. Teacher writes an unfamiliar word on the board.
2. Teacher writes the definition of the word on a sheet of paper.
3. Students write what they think the word means on pieces of paper.
4. Teacher collects definitions and reads them aloud while students listen.
5. Teacher reads definitions once more and students vote for the definition they think is the real one.
6. Students earn a point for selecting the correct definition. They can also earn a point each time another student guesses their definition.
7. The student with the most points at the end of the game wins.
8. Sample Words:
   - *Fabulist* (FA-beeyuh-list) -- a creator or writer of fables
   - *Coppice* (KAH-pes) -- a thicket, grove, or growth of small trees
   - *Malaria* (mi-lee-AR-ee-eh) -- an inflammatory disorder of the skin characterized by redness, burning, or itching.

*Figure 9g*
Game Instructions

Subject: Math  

Grade Level: K-6th

Topic: Addition, Subtraction, Multiplication, Division Facts

<table>
<thead>
<tr>
<th>Game Name:</th>
<th>Digits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Configuration:</td>
<td>Whole Class</td>
</tr>
<tr>
<td>Purpose:</td>
<td>New Learning, Practice, Review, Assessment</td>
</tr>
<tr>
<td>Materials:</td>
<td>Whiteboards (possibly)</td>
</tr>
</tbody>
</table>

Instructions:

1. Teacher calls on two students to stand at the front of the class and face each other.
2. When teacher says “Go!” both students put out their hands, holding up 1-10 fingers.
3. The student who adds/multiplies his/her opponent’s fingers first wins.
4. The winning student continues to the second round, while the loser returns to his/her seat.
5. Students continue game until there is only one person left.
6. Note: In order to ensure continual participation of all students, teacher may direct
7. students who are seated to write their answers on a small whiteboard or piece of paper.

Figure 9h
**Game Instructions**

**Subject:** Math  
**Grade Level:** 3rd-6th  

**Topic:** Addition, Subtraction, Multiplication, Division  

<table>
<thead>
<tr>
<th><strong>Game Name:</strong> Fast Facts</th>
<th><strong>Configuration:</strong> Whole Class</th>
<th><strong>Purpose:</strong> New Learning, Practice, Review, Assessment</th>
</tr>
</thead>
</table>

**Materials:**

**Instructions:**

1. Teacher distributes worksheets containing 100 simple math problems face-down on students’ desks.
2. Teacher sets timer for five minutes and instructs students to turn their papers over.
3. Students answer as many questions as they can, with the ultimate goal of beating their previous record.
4. Teacher reads answers aloud.

*Figure 9i*
### Game Instructions

**Subject:** Any  
**Grade Level:** 2nd-6th  
**Topic:** Any

| **Game Name:** Flashcard Relay  
| **Configuration:** Whole Class  
| **Purpose:** Practice, Review, Assessment  
| **Materials:** Flash Cards |

**Instructions:**

1. Teacher places two equal stacks of flash cards on a desk in the front of the room.

2. Teacher divides students into two teams.

3. Students form two single-file lines facing the desk (one line for each team). The first student in each line should be about 10 feet from the desk.

4. When the teacher says “Go!” the first person in each line races to the desk, takes the first card in the pile, calls out the answer, throws the card in a discard pile, and then races to tag the next person in line.

5. The two teams play simultaneously.

6. If a student answers incorrectly, or not at all, he/she must place the card at the bottom of the deck and select another card. Students may continue to draw cards until they get a correct answer, or until they have drawn five cards. The first team to correctly answer all the facts in a deck wins.
Game Instructions

**Subject:** Any  
**Grade Level:** Any  

**Topic:** Any

<table>
<thead>
<tr>
<th><strong>Game Name:</strong> Game Board Learning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Configuration:</strong> Whole Class</td>
</tr>
<tr>
<td><strong>Purpose:</strong> Practice, Review, Assessment</td>
</tr>
<tr>
<td><strong>Materials:</strong> Colored paper</td>
</tr>
</tbody>
</table>

**Instructions:**

1. Design a giant candyland-esque style game-board around the room with different questions on each colored dot.

2. Students must answer questions correctly to in order to advance to the next dot (space on board). The first student to circle the board wins.

---

*Figure 9k*
**Game Instructions**

**Subject:** Any  
**Grade Level:** 4th-6th  
**Topic:** English

<table>
<thead>
<tr>
<th>Game Name: Judge and Jury</th>
<th>Configuration: Pairs/Whole Class</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Purpose:</strong> Practice, Review, Assessment</td>
<td></td>
</tr>
<tr>
<td><strong>Materials:</strong> Big Poster Sheets, Colored Markers, Textbooks or Worksheets</td>
<td></td>
</tr>
</tbody>
</table>

**Instructions:**

1. Divide students into pairs (more proficient students can support less proficient students). Allow students to name each of their own pair teams.
2. Select sentences (from a textbook or worksheet) that require students to punctuate, diagram, combine, or restructure.
3. Tell students that each pairs will create a poster to show their sentence work.
4. On the class white board, show students the points they may earn for their work.  
   (Example: 1-3 points for each sentence that was done correctly, 1 point for neatness, 1 point for presentation, 1 point for defense of their answers, 1 bonus point for every sentence that is also illustrated.)
5. Give students a set time to complete their posters.
6. Have each pair present their posters in front of the class, who will act as the Jury.  
   Seat the class in a close semi-circle around the presenters. After each presentation, the class votes for points to be awarded. Ask, “How many would give this team x-number of points for correct work? How many would give y-number of points?” etc. Encourage discussion as to why some students would award more points, while others would award less. In the event of a dispute, or if teacher disagrees with class, teacher can overrule as the Judge.
7. Write team names and points on board. Tally points in the end to determine winners.

---

*Figure 91*
### Game Instructions

**Subject:** Any  
**Grade Level:** K-4th

**Topic:** Any

<table>
<thead>
<tr>
<th><strong>Game Name:</strong> Moving On Up</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Configuration:</strong> Whole Class</td>
</tr>
<tr>
<td><strong>Purpose:</strong> Practice, Review, Assessment</td>
</tr>
<tr>
<td><strong>Materials:</strong> None</td>
</tr>
<tr>
<td><strong>Instructions:</strong></td>
</tr>
</tbody>
</table>

1. Preparation: Teacher uses tape to create a starting line and a finish line on the floor. The floor tiles serve as spaces or levels.
2. Teacher divides students into two teams and selects one player from each team to start.
3. Teacher poses a question. The student who raises his/her hand first and answers correctly gets to move ahead one square.
4. Teacher calls on one student from each team to stand where the first two left off.
5. Teacher asks another question. The first student to answer correctly moves forward.
6. This process continues until someone reaches the finish line.

*Figure 9m*
## Game Instructions

**Subject:** Any  
**Grade Level:** K-5th  
**Topic:** Any

<table>
<thead>
<tr>
<th><strong>Game Name:</strong> Pass the Chicken!</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Configuration:</strong> Whole class</td>
</tr>
<tr>
<td><strong>Purpose:</strong> Practice, Review, Assessment</td>
</tr>
<tr>
<td><strong>Materials:</strong> Rubber Chicken</td>
</tr>
<tr>
<td><strong>Instructions:</strong></td>
</tr>
</tbody>
</table>
| 1. Teacher directs students to sit in a circle and hands rubber chicken to the first student. That student is “It”.

2. Teacher asks student holding the rubber chicken to name five things related to a particular topic (e.g. name five U.S. presidents) then instructs him/her to "Pass the chicken!"

3. As soon as teacher says, "Pass the chicken," the student passes the chicken to the right and begins listing things.

4. Students quickly pass the chicken around the circle (no one wants to be caught with the chicken).

5. If the student lists five things before the chicken makes its’ way around the circle, the last person holding the chicken is not “it.”

6. If the chicken returns to the original student before he/she can name five things, the original holder is still "it."

7. Sample Topics:
• Multiples of 5

• Authors of children's books

• Countries in South America

• Things that grow in the desert

• Vegetables

• Rivers in the United States

• Large bodies of water

• Animals found in salt marshes

Figure 9n
### Game Instructions

<table>
<thead>
<tr>
<th><strong>Subject:</strong></th>
<th>English, History, Science</th>
<th><strong>Grade Level:</strong></th>
<th>3rd-6th</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Topic:</strong></td>
<td>Any</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| **Game Name:**     | Password                  |                  |         |
|--------------------|---------------------------|                  |         |
| **Configuration:** | Whole Class               |                  |         |
| **Purpose:**       | New Learning, Practice, Review, Assessment |         |         |
| **Materials:**     | None                      |                  |         |

**Instructions:**

1. Teacher selects two students to be the "contestants."
2. Contestants stand at the front of the class, facing the rest of the class.
3. Teacher writes a word on the board so that everyone but the two contestants can see it.
4. Contestants take turns calling on volunteers from the class to offer one-word clues.
5. Contestants continue until one of the contestants correctly guesses the word on the board.
6. The contestant who guesses the password remains at the front of the class, while the student who provided the final clue replaces the other contestant.
Game Instructions

Subject: Any
Grade Level: 1st-5th

Topic: Any

Game Name: Piecing the Puzzle

Configuration: Whole Class

Purpose: New Learning, Practice, Review, Assessment

Materials: Laminator, paper

Instructions:

1. Preparation: Teacher laminates about 10 pieces of paper. Each piece of paper should contain information about a topic from the curriculum (e.g. vocabulary word, math formula, etc). After laminating, teacher cuts each piece of paper into 3-4 pieces.

2. Teacher gives one piece to each student.

3. Students walk around the classroom to put their puzzles together.

Figure 9p
**Game Instructions**

**Subject:** Any  
**Grade Level:** 3rd-5th  
**Topic:** Any

<table>
<thead>
<tr>
<th>Game Name:</th>
<th>Quick Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Configuration:</td>
<td>Whole class</td>
</tr>
<tr>
<td>Purpose:</td>
<td>Practice, Review, Assessment</td>
</tr>
<tr>
<td>Materials:</td>
<td>None</td>
</tr>
<tr>
<td>Instructions:</td>
<td></td>
</tr>
</tbody>
</table>

1. Before the game begins, each student must generate two questions about a given topic.
2. Teacher directs students to sit in a circle and selects one student to begin the game.
3. The first student points to another student and asks a question.
4. If student answers correctly, he/she may point to another student and ask a question.

*Figure 9q*
# Game Instructions

**Subject:** Any  
**Grade Level:** K-6th  
**Topic:** Any

<table>
<thead>
<tr>
<th>Game Name:</th>
<th>Silence</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Configuration:</strong></td>
<td>Whole Class</td>
</tr>
<tr>
<td><strong>Purpose:</strong></td>
<td>New Learning, Practice, Review, Assessment</td>
</tr>
<tr>
<td><strong>Materials:</strong></td>
<td>Sticky notes or index cards</td>
</tr>
<tr>
<td><strong>Instructions:</strong></td>
<td>Students must arrange themselves in a particular order without speaking.</td>
</tr>
</tbody>
</table>

**Examples:**

- Kindergarten: Students line up silently according to height.
- Kindergarten: Each student wears a tag with their birthday written on it. Students line up silently in order of birthdate from January 1 to December 31.
- Elementary: Each student wears a tag with the name of a state capital. Students line up in alphabetical order. Students may also line up according to the state for each capital.
- Elementary: Each student has an index card with the name of a U.S. president. Students arrange themselves in order of the presidencies.
- Elementary: Each student has an index card with a fraction written on it. Students arrange themselves in order of fraction size.
- Elementary: Each student has a card or picture of a clock displaying a time of day. Students arrange themselves in order of the time shown.
- Elementary: Students have cards with names of major U.S. city and their populations. Students arrange themselves in order of population size.
**Game Instructions**

**Subject:** English  
**Grade Level:** 1st-3rd

**Topic:** Spelling

---

**Game Name:** Sparkle  
**Configuration:** Whole Class  
**Purpose:** Practice, Review, Assessment  
**Materials:** None

1. **Instructions:** Teacher directs students to stand side-by-side, in a line.
2. Teacher calls out a word for the students to spell.
3. The first student in line calls out the first letter of that word; the second person calls out the second letter; the third person calls out the third letter and so on.
4. The student who calls out the last letter in the word must turn to the next person in line and say “sparkle”. The person who is "sparkled" must return to his/her seat.
5. After a student is sparkled, the teacher calls out a new word.
6. If a word is misspelled, the person to say the first wrong letter must sit down and the spelling of that word continues.

---

*Figure 9s*
Game Instructions

Subject: Any

Grade Level: K-2nd

Topic: Any

Game Name: The Quiet Game

Configuration: Whole Class

Purpose: Behavior

Materials: White Board and Marker

Instructions:

1. Write the names of the students on the board with 10, vertical lines next to each name.

2. Tell students that every time they talk they will lose a point. (This is a silly game that little kids love. Very useful in getting a rowdy group to settle down.)

Figure 9t
Game Instructions

Subject: Any

Topic: Any

Grade Level: 3rd-6th

Game Name: Trashketball

Configuration: Whole Class

Purpose: New Learning, Practice, Review, Assessment

Materials: Trashcan, pieces of paper

Instructions:

1. Teacher divides students into four teams.
2. Teacher calls up students, one team at a time, and asks a question from a piece of paper.
3. If one student answers correctly, the whole team gets a point.
4. The student who answers correctly then crumples the piece of paper into a ball and attempts to toss it into the can. If the student makes the shot, the team gets another point.
5. If a student answers incorrectly, another team is called up to answer.
6. Note: For added review, teacher may direct students to create their own questions.
### Game Instructions

**Subject:** Any  
**Grade Level:** K-5th  
**Topic:** Any

<table>
<thead>
<tr>
<th>Game Name:</th>
<th>Twister Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>Configuration:</td>
<td>Whole Class</td>
</tr>
<tr>
<td>Purpose:</td>
<td>New Learning, Practice, Review, Assessment</td>
</tr>
<tr>
<td>Materials:</td>
<td>Twister Mat and Wheel</td>
</tr>
</tbody>
</table>

**Instructions:**

1. Teacher divides students into two teams.
2. Each team selects a student to represent the whole team on the Twister mat.
3. Both representatives stand on the side of the mat.
4. Teacher asks a question. The first student to answer correctly puts a hand or foot on the circle of their choice.
5. If a student answers incorrectly, or not at all, the teacher spins the wheel and the student must move to the random color.
6. The student who falls first loses the game.

*Figure 9v*
**Game Instructions**

**Subject:** Math  
**Grade Level:** 3rd-6th  
**Topic:** Addition, Subtraction, Multiplication, Division  

<table>
<thead>
<tr>
<th><strong>Game Name:</strong> What’s Your Number?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Configuration:</strong> Whole class</td>
</tr>
<tr>
<td><strong>Purpose:</strong> New Learning, Practice, Review</td>
</tr>
<tr>
<td><strong>Materials:</strong> Name Tags</td>
</tr>
</tbody>
</table>

**Instructions:**

1. Teacher creates “name tags” for each student. Each tag contains a multiplication fact or a simple math problem.
2. Students wear their name tags for the whole day.
3. Instead of addressing each other by name, students must call each other by the answer to their math problem.
**Game Instructions**

**Subject:** Any  
**Grade Level:** 3rd-6th  
**Topic:** Any

<table>
<thead>
<tr>
<th>Game Name</th>
<th>Whozit/Whatzit?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Configuration</td>
<td>Whole Class</td>
</tr>
<tr>
<td>Purpose</td>
<td>Practice, Review, Assessment</td>
</tr>
<tr>
<td>Materials</td>
<td>None</td>
</tr>
<tr>
<td>Instructions:</td>
<td></td>
</tr>
</tbody>
</table>

1. Teacher writes a Whozit/Whatzit puzzle on the board related to the curriculum.
2. Students try to guess the name or term; teacher adds clues to reinforce the context for the name or term.
3. Sample Whozit/Whatzit Puzzles:
   - Tall Mischief Her Sun (Clue: person) -- Thomas Jefferson
   - Shock Cussed Toe (Clue: person) -- Jacques Cousteau
   - Docked Hearse Whose (Clue: person) -- Dr. Seuss
   - Tight An Hick (Clue: thing) -- Titanic
   - My Gulch Hoard Un (Clue: person) -- Michael Jordan
   - Thumb Ill Key Wake Owl Licks He (Clue: place) -- The Milky Way Galaxy
4. Note: Teacher may challenge students to create their own Whozit/Whatzit Puzzles for the class to solve.

*Figure 9x*
### Game Instructions

<table>
<thead>
<tr>
<th><strong>Subject:</strong></th>
<th>Any</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Grade Level:</strong></td>
<td>4th-6th</td>
</tr>
<tr>
<td><strong>Topic:</strong></td>
<td>Any</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Game Name:</strong></th>
<th>You’re Outta Line</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Configuration:</strong></td>
<td>Whole Class</td>
</tr>
<tr>
<td><strong>Purpose:</strong></td>
<td>New Learning, Practice, Review, Assessment</td>
</tr>
<tr>
<td><strong>Materials:</strong></td>
<td>Flashcards</td>
</tr>
<tr>
<td><strong>Instructions:</strong></td>
<td></td>
</tr>
<tr>
<td>1. Teacher selects two students to be the line leaders and divides the rest of the class into two teams.</td>
<td></td>
</tr>
<tr>
<td>2. Teams line up single-file two feet in front of the line leaders.</td>
<td></td>
</tr>
<tr>
<td>3. Line leaders call students up one at a time to ask questions from the flashcards.</td>
<td></td>
</tr>
<tr>
<td>4. Students who answer correctly may return to their desks. Students who answer incorrectly, or not at all, must go to the back of the line to try again.</td>
<td></td>
</tr>
<tr>
<td>5. The first team with no one left standing in line wins.</td>
<td></td>
</tr>
<tr>
<td>6. Differentiation: Teacher can select the appropriate cards to hand to the line leaders.</td>
<td></td>
</tr>
</tbody>
</table>

*Figure 9y*
Figure 10 - Post Your Game Ideas – This page provides a mini-blog for site users. This area has been provided for feedback, and as a way to collect additional games for the site.
Chapter Five

Discussion

This project was prompted by my clinical practice experience with a group of fourth grade students with ADHD. Over a period of eight weeks, I observed these students in the school’s resource center where they received English language arts instruction, as well as in an inclusive classroom where they studied math with general education students. In both classes, I witnessed how excited these students became when they were given the opportunity—as they frequently were—to play learning games. The students with ADHD, who were often distracted, disruptive, or off-task, suddenly became engaged and attentive. And, along with increased engagement, I observed improvements in their behavior, class participation, and the quality of their class work. Likewise, the general education students were enthusiastic about math games, and demonstrated similar social and learning benefits. In discovering how easy it was to incorporate games into lesson plans, I wondered why teachers seldom include them in lessons requiring students to practice, review, or memorize their learning. Additionally, I wondered: Why are students with ADHD so motivated by games? Does research support my observation that games improve the peer-relationships, behavior, and academic performance of students with ADHD? These questions prompted my research and subsequent project: A free and easy-to-use website resource for teachers who would like to 1) explore educational games, 2) learn how to incorporate these games into lesson plans that are aligned with the new, California Common Core State Standards and 3) access detailed game instructions to include in lesson plans.

This chapter will review the development of my project in the context of what I learned about the new Standards and students with ADHD. I will also discuss the positive implications of using games in inclusive classrooms, and how I intend to implement and expand on the
material I posted to the website. Additionally, I will discuss the limitations of my project and will offer suggestions for future research on games for students with ADHD and other disabilities.

**Lessons Learned**

In reviewing the development of this project, I can identify three stages that furthered my ability to meet the challenges of an inclusive classroom. First, from the beginning, I wanted the games on the website to reflect what I consider to be “best practices” for an inclusive classroom environment. I visited numerous teacher and educational websites to collect games and discovered that many descriptions were thorough and included supplemental information about possible uses, materials, and even noise levels. Other descriptions were minimal and required me to think through the practical process of setting up a game. Without exception, every game I researched required me to consider how it might be adapted to meet the various learning styles and needs of students in an inclusive classroom. This was valuable practice in adapting teaching strategies for an inclusive classroom.

Later in the project development, I was challenged by the task of aligning games to a set of Standards that had not yet been implemented. This was made more difficult by the fact that teacher committees were just beginning to meet to dissect the new Standards, and to develop curriculum for their districts and/or school sites. At one point, I feared that this as-yet-to-be-developed curriculum would be the missing link in my alignment of the games to the Standards. However, as I studied the Standards, I discovered that they placed a new emphasis on having students show their understanding of their learning. I began to see that games could—and in fact, should—be aligned by that purpose, rather than by specific content or curriculum. I then made a list of what I refer to as the “verbs in the verbiage” (of the Standards) which includes
words like: answer, compose, create, demonstrate, describe, explain, express, generate, introduce, model, paraphrase, produce, review, speak, summarize, and tell. These verbs direct the way students will express their understanding of their learning. By identifying how students will demonstrate understanding, I was able to find or adapt games that encourage the practice of those skills. This gave me a deeper understanding of the Standards, and will influence how I implement them in future lesson plans.

Finally, towards the end of the project, I reflected on my early inclination to keep the scope of my project somewhat narrow: Games for Students with ADHD in Inclusive Classrooms. I was glad that I had limited the scope because I discovered that project took on a life of its own. As it unfolded, I began to realize that virtually any game I included for students with ADHD could—with conscious revision—be made suitable for all the students in an inclusive classroom. I realized that the games needed to be about inclusion, not ADHD and this is reflected in the website.

**Educational Implications**

I was very excited when I first observed the success of game-play, for students with ADHD in an inclusive classroom. Previously disruptive students became cooperative and joined their classmates in activities that encouraged friendship and learning. When I witnessed the success of this strategy, and its positive implications for inclusive classrooms, I wanted to share it with other educators.

For inclusion to succeed, educators must commit themselves to finding strategies to make it work. Theoretical models are not enough to convince skeptics that classrooms can be structured, and lessons adapted, to benefit to all students. Today, technology makes it possible for educators to share their ideas in ways no one could have imagined 20 years ago. Educators 4
must expand their notions of collaboration to include websites, blogs, and video presentations. Additionally, professional development opportunities must include more teacher “field trips” to schools sites that have successfully developed and implemented inclusive “best practices.”

Hopefully, this project will, in some small measure, serve the interests of both collaboration and inclusion.

**Project Implementation Plans**

In developing this project, I hoped to create an out-of-the-package resource that would be ready to use and share with other teachers. Moreover, I wanted this resource to be a work-in-progress that would facilitate ongoing input from other teachers. To that end, the website is now posted on the internet and includes a “Post Your Game Ideas” area for unlimited user feedback and ideas. The website currently includes 25 games for elementary school students and 25 games for middle school students with a suggested method for aligning the games to the Standards and to individual lesson plans. I plan on sharing this resource by creating and disseminating “business cards” with the website address. These cards can be shared with teachers at my future school site and at professional development events. Additionally, I will continue to expand the database of games. As I collect additional games from websites hosted by other teachers, I will invite them to share links. I would also like to add a section for IPAD games. Increasingly, IPADs are being used in special education settings and several IPAD programs exist that allow teachers to design games specific to their curriculum and their students’ needs.

**Limitations of Project**

This project was limited by three factors: First, it lacked a study to validate my observations that game-play benefits students with ADHD in inclusive classrooms. While I have
personally witnessed improvements in student behavior, peer-relationships, and motivation, I was unable to measure either the extent of the improvements or their impact on academic achievement. Next, the project was limited by the absence of existing literature on games in inclusive classrooms. While several studies in my literature review connect games to positive student outcomes, one must surmise a correlation to inclusive classrooms. Finally, recent literature on educational games tends to focus on computer games that: 1) are often developed by programmers, not educators; 2) are difficult, if not impossible, to adapt to specific curriculum; 3) invite individual, rather than collaborative learning, and 4) require technology that is frequently lacking in classrooms.

**Future Research or Project Suggestions**

In the course of developing this project, I noted three subjects for further research. First, while my literature review documented a correlation between game-play and increased motivation in children with ADHD, a subsequent correlation between motivation and academic achievement was suggested, but not definitive. I would argue that improvements in motivation, resulting in improved on-task behavior, cannot help but advance the academic performance of students with ADHD. This, however, is an area for future research to include measures of improvement in academic achievement.

Another area for research would be the effect of educational games on students with autism. As suggested by Geurtz, et al. (2008), the same two neuro-developmental pathways linked to problems with interference control and motivation in ADHD, are also affected in individuals with autism. The differences and similarities in these effects, invite additional study.

Additionally, future research should address the resistance many general education teachers have to inclusion. If, as suggested by my research, student misbehavior is a major
concern for these teachers, it would be useful to conduct research that measures improvements in student behavior during game play.

Summary/Conclusion

The educational landscape of American schools is constantly evolving. Today, many teachers are facing the dual challenge of incorporating the new Common Core State Standards into newly constituted, inclusive classrooms. While the benefits of inclusion are well-documented, not all general education teachers have embraced it. Inclusion requires a fresh mindset, along with an innovative set of behavioral and instructional strategies. This paper addresses the potential for classroom games to mitigate some the challenges teachers face with students with ADHD; the website project addresses the needs of all students in inclusive classrooms.

The literature review showed that many teachers resist both game-play and inclusive classrooms (Van Reusen et al. 2007). Nevertheless, revealing research by DeVries and Edwards (1973) pointed to improved peer-relationships between students who played classroom games. DuPaul and Stoner (2003) and Fabiano et al. (2007) found game-play to be useful strategy for improving behavior in students with ADHD. Geurtz, Luman, and van Meel (2008) looked at the positive effects games have on the brains of students with ADHD.

In response to the findings in the literature review, the project was designed to meet the needs of teachers in inclusive classrooms, looking to incorporate games into lesson plans aligned to the new, California Common Core State Standards. The project was developed with an eye to best teaching practices that: 1) provide engaging activities to motivate students; promote and/or provide positive behavior support mechanisms; support the academic and other needs of English language learners and students with disabilities; promote positive peer-relationships through
collaborative learning activities; foster the principles of the Circle of Courage - Belonging, Mastery, Independence, and Generosity; provide positive, equitable student roles; provide opportunities for students to read, write, listen, and speak; address different learning styles (visual, auditory, tactile, and kinesthetic), and support a 4-tiered process of instruction and learning that includes direct instruction, whole group practice, partner or small group practice, and individual practice and mastery.

Games were selected from teacher websites and then reviewed and adapted, as necessary, for the purposes of the website. The website includes easy access to the Standards, grades K-9, a template for aligning the games to the Standards, a suggested list of games materials, a reference list of games by purpose, subject, and grade level, individual game instructions that can be attached to lesson plans, suggestions for “making games work” in inclusive classrooms, and a blog-like forum for teacher feedback and ideas.

The primary limit to this project was that it did not include research on the effects of game-play on students with ADHD in an inclusive classroom setting and, unfortunately, there was no existing research on game-play in inclusive classrooms. Additionally, current research on game-play tends to focus on computer games which are difficult to adapt to individual lesson plans and require technology-stocked classrooms. Future research is needed into the links between improved student motivation and academic performance as well as the effects of games on students with autism and other disabilities.

The behavioral and instructional challenges inherent to inclusion are best seen as an opportunity for teachers to reexamine their teaching strategies. Incorporating SDAIE and other differentiation strategies will improve the social and learning environments of general educational classrooms. Additionally, it may be worth taking a look at some of the “old tricks,”
like games, that have hidden potential for solving a myriad of classroom challenges. Hopefully, this project will invite further exploration and collaboration from open-minded, optimistic teachers in California and beyond.
References


American Counseling Association, 471-507.


