
The Power of Games in Educational Therapy: Using Non-Academic Materials to Build Therapeutic Relationships, Create Positive Mindsets, and Improve Executive Functioning Skills

Risa Graff, MA, BCET, FAET

Although educational therapy is typically centered around helping clients perform better in school or in the workplace, the goals of the practice are significantly broader than providing interventions for reading, writing, and mathematics skills. To help clients optimize learning and be successful in life, the educational therapist (ET) must also help clients reach overarching goals such as: changing their beliefs about themselves as learners; internalizing executive functioning skills; and developing stamina for difficult work. To help clients make progress toward these critical goals and to build a therapeutic relationship with each client, the ET needs an extensive array of materials, techniques, and methodologies. This article offers client anecdotes to illustrate how an ET can use carefully selected games and puzzle series to achieve essential goals.

INTRODUCTION

Sometimes it's easy to tell that a client would rather be any place in the world than in my office. On Samantha's first day of educational therapy, I watched with concern as Mrs. R. waited outside her van, hands on hips, cajoling her 10-year-old daughter to get out and come in. When they finally arrived at my doorstep, Samantha's mother firmly nudged her through the door and said, "Go work hard with Mrs. Graff." Mrs. R. was barely out the door herself when Samantha defiantly announced, "I'm terrible at school stuff! I'm bad at reading! And why do I have to come here?" Samantha plopped down in a chair and began playing with a nearby pen while I tried to engage her in conversation about things she liked to do. When she accidentally dropped the pen, she glanced at me with an expression that clearly said, "Now you have a reason to be mad at me." Samantha's recent diagnostic evaluation included a laundry list of deficits and remedial needs, but had not mentioned her tough protective shield or her sadness about how she was doing at school. I took a deep breath and decided that our first session needed to focus on beginning a relationship where Samantha would trust me not to embarrass her. We would also begin by building Samantha's confidence in her ability to think. I told Samantha that I was going to show her several puzzle games and let her pick the one that interested her. All of the games looked absolutely nothing like school work, did not appear babyish, and would allow me to provide whatever scaffolding was needed to ensure success. No matter which game she chose, I believed that Samantha would experience pleasure from successful problem solving, and I would be able to provide honest compliments.

An educational therapy hour passes quickly, and the ET must constantly make decisions about the most effective way to spend the precious moments in each session. I frequently feel pressure to plunge into remediation tasks or school work, and sometimes that's the right course of action. But after many years and many clients, I have found that the session is often more fruitful if we begin with a brief activity where the client has never experienced failure and may easily approach the task with a positive mindset. Using specific kinds of games and puzzles can be an effective component of building a therapeutic relationship, and can help clients develop a positive mindset for learning while honing their executive functioning skills.

Beginning a session with a well-chosen game or puzzle series allows the client to easily succeed, thus setting a positive tone at the outset of the session and providing opportunities for me to label and praise my client's success. New clients often enter their first educational therapy sessions fearfully, wondering whether they will be embarrassed as they often are in school. Using puzzles and games typically enables me to give clients a sense of comfort, helping me establish an environment where it is safe for clients of any age to take risks. In addition, I find that by using specific puzzles and games at the beginning of a client's educational therapy experience, the client learns how it feels to be relaxed, yet able to apply effort on something that is actually difficult. As I observe clients solving puzzles or pausing to plan a game strategy, I provide clear and informative feedback (Kaganoff, 2010) about their emerging executive functions by labeling behaviors such as: initiating focus; pausing to reflect and plan; demonstrating cognitive flexibility; attending to visual/spatial details; or developing stamina for persistence. I also explain that if they can stay focused and strive to master a difficult game or puzzle, they will eventually be able to transfer these key skills to school work. Because there are no apparent "norms" for these games and puzzles, I can provide specific and believable positive feedback that enhances self-esteem. Once our relationship is well established and key executive functioning skills have been introduced, middle and older adolescents typically begin their sessions with a brief conversation and then move quickly to academic needs. With younger clients, games designed to enhance executive functions might be used at every session as a warm-up activity. Younger clients frequently need the comfort of knowing that each educational therapy session will begin with a task that does not remind them of school, but will help them become ready for the school work that follows.

CHANGING MY OWN MIND ABOUT CLIENTS' MINDSETS

Although I heard the term "cognitive arousal" many times during graduate school, I had no instructions about how to increase cognitive arousal nor how to impart a useful understanding of this term to children. From the beginning of my practice, it was obvious to me, and I'm sure to my readers, that clients arrive for their sessions with a wide range of abilities to self-regulate, which significantly bears upon their readiness to learn. For many years I viewed games as more of a reward for hard

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work than as a vehicle to teach how it feels to work hard, but one particular client totally changed my view. In 1991 I began working with an amazing six-year-old girl named Rachel* who had Familial Dysautonomia (FD). FD is a “rare genetic neurological condition that affects the sensory and autonomic nervous systems, causing gastrointestinal, cardiac, pulmonary, orthopedic, renal and ophthalmologic problems” (<http://ghr.nlm.nih.gov/condition/familial-dysautonomia>). As a result of the physiological challenges she experienced, Rachel often arrived at her educational therapy sessions with a widely fluctuating ability to put energy into learning. Rachel’s parents were determined to make her life as rich and full as possible, and brought Rachel to educational therapy and sent her to school as consistently as her illness allowed. Knowing that Rachel experienced such serious physiological problems gave me a different perspective toward her than I had with other clients who came in seeming to have no energy for learning. My own negativity (suppressed of course) about dealing with children who practically lay down on the desk rather than working, disappeared when I worked with Rachel because I felt that she “couldn’t” rather than “wouldn’t” gather up her energy to engage in work.

One morning during our first year together, I brought out a game spinner that showed the numbers “one” to “ten” and asked Rachel to think about what “power setting” her brain was on that day. We had recently talked about microwave ovens, and Rachel knew that microwaves had numbered buttons that controlled their power. I described a brain power setting of “one” as being like you’re about to fall asleep, and a setting of “ten” as the feeling that you could solve any problem in the world. Rachel set the spinner at a “three” as she told me how tired she was feeling. I told Rachel we were going to play *Hoppers* (www.thinkfun.com), one of her favorite games, and that after the game, she could reset the spinner if her brain’s power level had gone up. *Hoppers* is a simple game where plastic frogs are set up in patterns on a small pegboard. Frogs can only move by jumping over other frogs; the jumped frog is then removed from the board. The 40 pattern cards make it progressively harder to achieve the goal of having only one frog left. Just seeing the game made Rachel perk up a little, and as she worked to have only one frog left on the board, she became focused on the game rather than her body. After 10 minutes of *Hoppers*, Rachel reset the spinner to show that her brain was on “eight.” I realize that this sounds very simple, but this experience pointed the way for me to use materials in new ways with all of my students. It wasn’t just seeing how games and puzzles could be used to teach executive functions, though that was important; this experience taught me how critical my own

CRITERIA FOR CHOOSING GAMES, PUZZLES, AND OTHER NON-ACADEMIC EDUCATIONAL THERAPY TOOLS

- Provide pleasure for the client.
- Be simple to learn.
- Can be played in 3 to 10 minutes.
- Puzzle series should begin with easy tasks and progress gradually to more difficult ones.
- Not be based on luck.
- Require some amount of pausing, reflecting, and planning.
- Provide opportunities for the ET to observe and label specific positive behaviors of the client.
- Can be scaffolded by the ET to ensure a level of success.
- Two-player games that allow the ET to demonstrate or verbally mediate strategies and thought processes.

Note: The games and puzzles suggested in this article are not meant to be all inclusive or an endorsement. While they are good examples of activities that I find effective in my practice, there are many more games and puzzles that would be equally useful in the practice of educational therapy. All of the items listed are available from multiple sources.

mindset or belief system was when I tried to help my clients form positive beliefs about themselves as learners and self-regulators. My experiences with Rachel allowed me to see other clients with a “can’t yet” rather than a “won’t” perspective, thus freeing me to happily provide them with positive, non-academic experiences to begin their educational therapy sessions.

DEVELOPING STAMINA FOR STRUGGLE

Learning how to become mentally engaged and willing to sustain a task while struggling are goals for many of my educational therapy clients. I often use training for an athletic event as a metaphor for developing mental stamina. Just as building muscles requires repetitive training, building stamina takes repetitive practice.

Bob is a classic example of a student who needs to develop academic stamina. He is a high school freshman who is very bright, but gives up easily when he perceives that a task is going to be difficult. Bob is currently taking honors geometry, and while he has the cognitive capacity to keep up with his tenth-grade class, he gives up as soon as a homework problem looks difficult. Bob

has been diagnosed with ADHD, primarily inattentive type, and a visual-motor deficit. He reads slowly, and has trouble initiating and sustaining school tasks he perceives as boring or challenging. I normally use Bob's school work as the vehicle for working on his academic stamina and metacognitive skills, but recently he came in grinning from ear-to-ear because he had nothing due the following day. I grinned too, and then offered Bob a choice of three activities that would support his educational therapy goals. He happily chose *Chocolate Fix* (www.thinkfun.com).

Chocolate Fix is a deceptively simple set of 40 progressively challenging deductive reasoning puzzles. The player's job is to put nine pieces of plastic candy into the correct spots in a 3 by 3 grid or "candy box." Each of the 40 puzzles contains visual clues related to the position, shape, and/or color of the candy pieces. As the tasks progress, the player must deduce or infer correct candy placement by combining information from multiple clues. Bob quickly solved puzzle #37 and felt very pleased with himself. His quick solution gave me an opportunity to compliment him on paying careful attention to visual details and not jumping to conclusions. Then came puzzle #38—an extremely tricky puzzle requiring Bob to make multiple inferences and to carefully check to see whether he had met the requirements of each individual clue. Puzzle #38 provided a different type of learning opportunity—it took Bob 35 minutes to come up with the correct solution! It was a wonderful opportunity for Bob to experience the joy of success that may come after a period of intense reasoning. While watching Bob, I was able to provide complimentary and informative feedback on his mental stamina (staying with a problem that wasn't easy), self-monitoring (repeatedly checking the clues), and his cognitive flexibility as he tried multiple solutions. When puzzle #38 was finally solved, I asked Bob to tell me what strategies he could take from this problem-solving process and apply to his current school work. His thoughts were: (1) If something doesn't work, start with a clean slate to clear your mind; this might mean getting a new piece of paper or erasing a whole problem; (2) Don't immediately ask for help because it's more satisfying to get it yourself; and (3) Be flexible—try new ways to get the answer.

Bob and I both felt delighted with that educational therapy session, but neither of us was fooled into thinking that his problems with self-monitoring and academic stamina were solved. What his successful puzzle experience did was give us a reference experience that we could talk about when Bob is struggling to write a paper or complete a difficult geometry proof. It will be a small but important positive step in Bob's thenceforth educational therapy.

IF ONLY SHE WOULD STOP TO THINK...OR, THE POWER OF THE PAUSE

Metacognition, the ability to think about one's own thinking, is often hard to break down into component parts. I find that this critical aspect of executive functioning is particularly difficult for clients who are anxious and/or have trouble controlling their speed of response. Constructive pausing, self-reflection, and planning

ahead are three metacognitive skills which can be introduced and practiced through games. There are many computer learning games in which the player receives negative feedback (you lose a "life") for impulsively responding incorrectly. However, my experience is that computer games encourage quick moves and subsequently, discourage constructive pausing. Games such as *Rush Hour*, *Lunar Lockout*, *Hoppers* (www.thinkfun.com), *Quoridor*, and *Quarto* (www.gigamic.com) reward pausing, self-reflection, and planning. Each of these games or puzzle series requires the player(s) to carefully move small wooden or plastic pieces. Though the visual-motor requirement is minimal and can be done easily by a five-year-old, having to perform these small physical tasks sets the stage for slower, more thoughtful play than would be accomplished on a computer. When similar games are played on a touch screen, it's all too easy to press the "re-set" button and begin over and over again rather than thinking through a problem.

Cathy is a sixth-grade student who struggles with self-regulation issues in most domains of her life. Cathy's recent neuropsychological evaluation outlined difficulties with regulation of attention, sleep, eating, emotions, and body movement. Cathy tends to do everything at high speed except for sleeping and homework. She struggles to inhibit impulses and to monitor her own behavior at school and at home. Although Cathy tries to keep up a façade of indifference, she is keenly aware of her academic difficulties and anxious about her school performance. In educational therapy sessions, Cathy's ability to maintain appropriate focus and to keep her body in one place vary greatly from day to day and moment to moment. When we begin Cathy's educational therapy sessions with a game that highlights her visual-spatial strengths, she appears calmer, feels smart, and is more open to learning about herself.

Rush Hour (www.thinkfun.com) is a series of puzzles which require a player to extricate a small red car from a crowded parking lot. The player must first pay close attention to how the cars and trucks are set up on the puzzle card and replicate the exact configuration of vehicles on a small plastic "parking lot." Vehicles can only move backward or forward in the lane they are placed in. It's one of those games where it takes a minute to learn the rules and hours to solve all of the puzzles. What often happens with clients who are impulsive is that they get close to a solution, but are moving the little vehicles so quickly that they don't see that they are close to success. I typically let clients play several of the beginning puzzles without telling them about the power of pausing. If the first puzzles seem easy, I ask them to tell me how they solved them. I compliment them if I observe pausing, planning, subvocalizing, or any form of strategy. If someone gets stuck, I will offer a suggestion such as: "You're very close to finding the way out. Try putting your hands on the desk and see if that helps you slow your mind down so that you can see your solution." I may also suggest that the student re-set the game, look away for a moment, and imagine that they are clearing the old game out of their mind so that they can take a fresh look. Watching students play is very informative. In Cathy's case, she solved the first puzzles quickly and attempted to solve

FAVORITE NON-ACADEMIC MATERIALS

Puzzle Series—one player

Rush Hour by Thinkfun

Railroad Rush Hour by Thinkfun

Lunar Lockout by Thinkfun

Hoppers by Thinkfun

Chocolate Fix by Thinkfun

Two-Person Games

Make Seven by Pressman Toys

Quarto by Gigamic

Quoridor by Gigamic

Batik by Fundex/Gigamic

Pass the Pigs by Hasbro

Connect Four by Hasbro

Mindbenders by The Critical Thinking Company

A series of deductive reasoning puzzles which teach: problem solving; careful reading; stamina for struggle; inferential thinking; integration of visual and linguistic information; and manage to appeal to clients of all ages and intellects. Four levels of puzzles with many examples at each level; each level becomes progressively more difficult.

the more advanced ones using the same strategy—trial and error. She moved cars up and back over and over again without a plan, even though I had seen her ability to visually plan on the simpler examples. Initially, Cathy was unable to even take her hands off of the cars and place them on the table. I explained that I would help her pause to think by gently placing my hands on hers and calmly putting her hands on the table. Then I asked Cathy to tell me two things: “What is blocking the red car?” and “Do you see any extra room in the parking lot?” This simple process requires lots of self-regulation on my part. As I gently placed her hands on the desk, I calmed my voice and spoke slowly about how I knew she was going to see the solution herself. From this stage, we progressed to Cathy being able to take her own hands off with a one-word cue of “pause.” Next, I asked Cathy to tell me each time she was going to pause, and I gave her a little check mark for each pause, so that we could observe how many pauses a puzzle might need. There were no miracles, but there were enough “ah ha” moments when Cathy paused and saw that she was on the verge of a solution to make the pause meaningful to her. She also had the pleasure of feeling very smart as she moved through the puzzle series and reached the “expert” level.

Nonacademic tasks continue to give her great pleasure and to serve as critical reference points when we talk about executive functioning skills and about areas where she truly excels.

The process of teaching Cathy to pause and plan or pause and self-reflect has now been integrated into other nonacademic problem-solving activities and into academic tasks. Different kinds of tasks require different kinds of self-questioning for the client to make optimal use of pausing. One of Cathy’s educational therapy goals is for her to improve her reading comprehension. She is fairly proficient at answering straightforward, factual questions, but struggles with figurative language and drawing inferences—“they take too much thinking.” Cathy’s “default setting” is to read as quickly as possible and answer questions as quickly as possible. A combination of difficulties with self-regulation and with negative thoughts about herself as a learner contribute to this pattern. Since Cathy sees herself as a poor reader, she prefers to finish assignments fast and then put them out of sight. We recently began working through a reading comprehension program where the student reads a brief excerpt from a novel and then answers a set of 5 to 7 questions. The student is required to give the “evidence” for her answers by writing down which of the numbered sentences best supports their answer. Cathy is finally beginning to realize how the skills she uses in *Rush Hour* can be used to understand what she reads. Before we begin reading, I ask Cathy to tell me how pausing helped her solve puzzles. She can easily explain that by pausing frequently, she solved puzzles more easily and had more fun. Then I ask her how she can use pausing and thinking to better understand what she is reading. It’s a big leap to go from pausing in an activity that brings intrinsic pleasure to pausing and asking herself, “Did that [what I just read] make sense to me?” At the time of this writing, Cathy had reached the stage where she could verbalize how the pausing mechanism works for her on games, but she still required external cues to pause while reading. I’m working on teaching her to pause and reflect on her understanding of a reading passage by quietly keeping track of how often she rereads for self-clarification or pauses to ask a comprehension-related question. I reward Cathy with a simple prize after she accumulates a specific number of points. Academic successes don’t yet provide enough intrinsic gratification for Cathy to sustain her effort without a tangible reward. Nonacademic tasks continue to give her great pleasure and to serve as critical reference points when we talk about executive functioning skills and about areas where she truly excels.

ESSENTIAL EDUCATIONAL THERAPY OBJECTIVES WHICH CAN BE REINFORCED THROUGH GAMES AND PUZZLES

- Developing a positive mindset about one's capacity for learning.
- Learning how to become mentally engaged.
- Developing persistence even when a task is perceived as difficult.
- Finding joy in learning.
- Learning ways to move from "tired and negative" to "positive and alert."
- Learning the power of pausing to reflect.
- Learning the power of planning ahead.
- Gaining a sense of empowerment through becoming more aware of one's strengths, needs, and emerging skills.
- Learning how to transfer a positive mindset and specific executive functioning skills to school tasks, employment, and life skills.

WHAT I'VE LEARNED USING PUZZLES AND GAMES IN MY EDUCATIONAL THERAPY PRACTICE

I began incorporating puzzles and games into my practice 25 years ago with the simple intention of helping clients feel happier about coming to do difficult academic work. Now I view puzzles and games as tools for achieving essential goals. I've learned how much easier it is for clients to be open to learning new skills when they are doing an activity which is enjoyable rather than one where they have already experienced failure. By carefully watching my clients play games and solve puzzles, I have honed my ability to pick up nuances and details. Watching a client extricate the red convertible from a gridlocked *Rush Hour* parking lot provides opportunities to observe problem-solving strategies, self-regulation, attention to detail, and frustration tolerance. The observations are more salient because they're not tainted by the client's negative feelings about academic inadequacy. Clients are usually open to receiving informative feedback when playing games or solving puzzles because they are invested in winning or finding the solution. Later, when I use similar feedback to encourage the same strategy on academic work, we can refer to their previous success in using that strategy in a game. There is also a lot to be learned through the process of two-person games, particularly when the game is actually difficult for *me*. It's an opportunity for my client to watch me try out strategies and hear me talk about how I feel as I struggle. I'm very careful about which clients I will engage in a game that is truly competitive, but when a client legitimately trounces me, it provides a boost to their esteem and strengthens our relationship. Games are great tools to teach clients what it feels like to take risks and go all

out. One of the ways that I measure my success is by observing whether I have helped my clients gain the knowledge which brings the confidence and the courage to persist.

* Rachel Reich is a real name and is used with permission from her parents. Rachel died in 1999 of complications from Familial Dysautonomia. She would love knowing that people are reading about her life and learning from her experiences.

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Risa Graff has been an educational therapist for 35 years and has a private practice in Olympia Fields, Illinois. She is a past president of AET and currently serves as AET's representative to the National Joint Council on Learning Disabilities. She is a co-author of Why Is My Child's ADHD Not Better Yet?, a book written to help parents recognize what to do when secondary disorders impact a child's treatment. A third-degree black belt in Tae Kwon Do, Risa often looks for techniques from martial arts, yoga, and games to help her clients reduce stress, increase pleasure, and maximize learning.