Using a Mnemonic to Develop Effective Incentive Systems

Linda L. Forbringer

An Article Published in

TEACHING Exceptional Children Plus

Volume 4, Issue 1, September 2007

Copyright © 2007 by the author. This work is licensed to the public under the Creative Commons Attribution License

Using a Mnemonic to Develop Effective Incentive Systems

Linda L. Forbringer

Abstract

Special educators frequently provide consultation for parents and general education teachers who are struggling to manage student behavior. One intervention often discussed is the use of rewards to increase student motivation. While research has shown that well-designed incentive systems can provide an effective intervention, poorly designed systems are often ineffective, and can be counter-productive. Unfortunately, the special educator is often placed in the position of having to critique and try to improve poorly designed incentive systems. The author uses a mnemonic formed from the letters in the word 'incentive' to propose a quick, research-based method for evaluating incentive systems. The mnemonic provides a useful tool to use when consulting with parents and general educators. Referring to the mnemonic can help when critiquing existing systems, and sharing the mnemonic can help others learn how to create more effective incentive systems in the future.

Keywords

incentives, rewards, behavior management, self-regulation, consultation

SUGGESTED CITATION:

Forbringer, L. L. (2007). Using a mnemonic to develop effective incentive systems. *TEACHING Exceptional Children Plus*, 4(1) Article 6. Retrieved [date] from http://escholarship.bc.edu/education/tecplus/vol4/iss1/art6

Michael has AD/HD and a behavior disorder. He spends most of his day in a general education classroom. His general education teacher, Mrs. Jones, is concerned because in class Michael frequently blurts out answers, even though students are expected to raise their hands. Mrs. Jones says she has to remind Michael at least seven times each day to sit quietly in his seat. She is a committed teacher who wants to help Michael, and proudly shares with the special education teacher an incentive system she has developed for Michael. "I'm going to write the word 'SURPRISE' on a sheet of paper, and promise him a surprise if he keeps at least an 'S' by the end of the week. I'll watch him during class, and if he's quiet, I'll leave the letters there. But if there's a problem, I'll erase one letter. If he still has an "S" on Friday, I'll give him a surprise, like a nice pencil or an eraser."

The special education teacher needs to provide feedback to the teacher, but without damaging the relationship she has established with this individual.

Rewards such as those described above are increasingly prevalent in today's schools. In many classrooms, teachers offer extra credit projects and bonus points in an effort to motivate struggling learners. Pizza parties, movies, and parking permits entice students to study or behave appropriately. In Kansas City, students have been paid for good grades and attendance with gift cards worth up to $150 (Kumar, 2004). Professionals urge parents to use incentives (American Academy of Pediatrics, 2001; Goodman & Gurian, 2004).

Special education teachers frequently develop incentive systems to help motivate their students. They also consult with parents and other teachers who work with their students. Kelly Miller is the special education teacher who works with Michael. In previous years, she had a self-contained classroom, but a growing emphasis on inclusion has resulted in most of her students now spending some or all of the day in the general education classroom. Increasingly, Kelly's role is becoming that of consultant, supporting parents and helping other teachers create an optimal learning environment for students in their classrooms who have special needs. Kelly knows that research supports the use of incentives as an effective way to motivate reluctant learners (Cameron & Pierce, 1994; Chance, 1992; Marzano, Pickering & Pollock, 2001). However, she also knows that, to be effective, an incentive system must be well designed. Poorly designed or implemented systems are generally ineffective, and studies have shown they can actually be counter-productive (Deci, 1971; Lepper, Greene, & Nisbett, 1973).

Kelly is concerned because the incentive system described above is not likely to be effective. Kelly needs to provide feedback to the teacher, but without damaging the relationship she has established with this individual. She decides to share a mnemonic created from the letters in the word "INCENTIVE" (see Fig. 1) that she has found helpful in critiquing her own incentive systems. Mnemonics provide a simple, research-based method for remembering information (Bos & Vaughn, 2006; Lenz & Deshler, 2004; Mastropieri & Scruggs, 1991; Stronge, Tucker & Hindman, 2004; Wolfe, 2001). By sharing the tool she uses to evaluate her own incentive systems, Kelly hopes to improve the intervention offered to Michael. At the same time, she believes the mnemonic will help Michael's

teacher develop her own ability to design more effective incentive systems in the future.

I = Incentive or Instruction?

Does the child need an incentive to boost motivation, instructional assistance, or both?

Offering a reward is not an appropriate intervention in every situation. The purpose of an incentive is to increase motivation. Often children struggle, not because they lack motivation, but because they lack the prerequisite skills necessary for success. Before implementing an incentive system, it is important to assess the child's skills and, if instructional assistance is needed, create a plan to provide it.

On the other hand, sometimes a child's motivation needs a boost. In the case of Michael, who has AD/HD and is disrupting class by blurting answers, it is probably very difficult for him to wait for recognition before speaking. Students with learning disabilities, attention deficit disorder, or other physical or mental disabilities often must expend twice as much effort to complete the same task as their non-disabled peers. Offering these students an incentive can boost motivation and help them succeed.

Negative systems are problematic for several reasons.

Kelly explains to Mrs. Jones that, when thinking about using an incentive with a student, she asks herself whether the child has the necessary skills to perform the desired behavior. If the answer is no, then merely offering an incentive, without providing necessary skill development, will probably fail. On the other hand, offering a reward while simultaneously providing instructional support can be a powerful intervention. The two teachers agree that an incentive could help motivate Michael to reduce some of his disruptive behavior. However, simply offering him an incentive will probably not be sufficient. He will probably also need cues or other supports to help him remember the hand-raising rule. Mrs. Jones decides to begin each instructional period with a brief review of behavior expectations and then provide cues throughout the period. In addition to this instructional support, she will use an incentive system to boost Michael's motivation.

N = Not Negative

Does the incentive system focus on positive behavior rather than negative behavior?

Research and best practice both suggest that an incentive system that rewards appropriate behavior is preferable to one that punishes inappropriate behavior (Kampwirth, 1988; Martella, Nelson, & Marchand-Martella, 2003). The system that Mrs. Jones has proposed involves writing the letters in the word "SURPRISE," then removing a letter each time Michael misbehaves. This is an example of a negative system, because the child is first given something, then parts are taken away for misbehavior. Unfortunately, many of the incentive systems suggested in popular teacher literature are negative systems. For example, stoplights are frequently recommended to indicate whether a child can participate in free time or other privileges. The child begins the day with a green light, and as long as the child behaves, the light remains green. When the child misbehaves, the light is moved to yellow, and then to red, and the child loses the right to participate in some rewarding activity. Other common negative systems involve writing the child's name on the board, and adding checkmarks as additional infractions occur.

Kelly knows that negative systems are problematic for several reasons. First, their design requires the teacher to attend to inappropriate behavior, rather than helping the teacher recognize appropriate behavior. Studies of effective classrooms suggest that teachers should provide at least three times more attention when students are behaving appropriately, than the amount of attention provided for inappropriate behavior (Sprick, Garrison & Howard, 1998). Kelly knows that Michael will benefit from recognition when he controls his impulsive talk-outs. If Mrs. Jones walks over and erases a letter every time he forgets, Kelly fears Michael will be embarrassed, and may eventually become so frustrated he stops trying. Such negative systems may be especially counterproductive with students from certain ethnic backgrounds. Recent research with minority students indicates that students from Arab, Asian, and Hispanic cultures respond more positively to quiet, private feedback than to more public correction such as writing names on the board or posting stoplights (Cheng, 1998; Lockwood & Secada, 1999; Walqui, 2000). Kelly suspects this caution is true for all the students on her caseload.

When selecting interventions, Kelly is also aware that the principle of least restrictive alternative suggests that teachers must first try the least aversive procedure. More aversive procedures, such as response cost systems, should be used only as a last result after more positive interventions haven tried (Alberto & Troutman, 1990; Council for Exceptional Children, 2003; Martella et al, 2003). The system Mrs. Jones suggested violates the principle of least restrictive alternative.

Kelly uses the "N = Not Negative" portion of the mnemonic to explain to Mrs. Jones why it is important to create a positive system. She and Mrs. Jones agree that Michel will be more likely to succeed if the system helps Mrs. Jones recognize his appropriate behavior. Kelly suggests that Mrs. Jones start with a blank paper, and award Michael a letter after a specified time period if he has remembered to raise his hand before commenting. Now that Mrs. Jones understands the rationale for using a more positive system, she is happy to make this change.

C = Criterion

How well does the child have to perform to earn the reward? Does the criterion shape the desired response?

When deciding what a child must do to earn a reward, it is important to start small and let the child experience initial success. Just as a trainer working with an aspiring pole-vaulter will first set the bar low, then gradually raise it as the young athlete becomes more skillful, so too the initial criterion for an incentive system should be set low, and gradually be raised as the child experiences success.

A common failure is the criterion is set too high.

A common failure in incentive systems is that the criterion is set too high. Experts caution that when a child cannot achieve success, his behavior may actually deteriorate (Alberto & Troutman, 1990; Walker & Shea, 1999). In Michael's case, the criterion has been set too high. Mrs. Jones says that she currently reminds Michael seven times each day to sit quietly in his seat, but the criterion she has set will allow him to blurt an answer no more than seven times in the entire week. Kelly brainstorms with Mrs. Jones how they might set a more realistic criterion for Mi-

chael. One option they discuss is for Mrs. Jones to initially award Michael a letter when he talks out fewer than seven times in a day. This, they believe, is a starting point where he could be successful. However, they agree that an even better strategy would be to devise a system where Michael receives feedback throughout the day. Mrs. Jones suggests that, instead of waiting until the end of the day to provide feedback, she could give Michael a letter for every class period when he remembers to raise his hand. This is something he has shown he can do, and so he can be successful and receive positive feedback for his accomplishment. Using baseline data to determine a realistic criterion increases the probability that the intervention will be successful.

E = Easy

Is the system easy to understand and implement?

An incentive system should help improve behavior, not make life more difficult. If explaining or implementing the system requires the teacher to interrupt a lesson in order to record student behavior or to pass out rewards, it can interfere with learning, and the teacher may be tempted to abandon the system. Poorly designed systems can actually create behavior problems. For example, in some systems that focus on negative behavior, when a student is caught misbehaving the teacher directs the student to give back a token or move his card, or demonstrate failure in some other public way. When this happens, many students will express their embarrassment by becoming increasingly oppositional. A child with a behavior disorder may retaliate by throwing tokens across the room, ripping things off the wall, or in other ways creating a great disruption in the classroom.

The best systems allow a small reward for expending some effort, but a greater reward for expending greater effort.

In Michael's example, the teacher originally planned to erase a letter every time Michael spoke without raising his hand, and eventually modified this to giving Michael letters when he remembers to raise his hand. Awarding these letters should not take too much time or be too difficult to implement. However, Michael has a behavior disability. It is possible he might become defiant or argumentative when told he did not earn the letter for a given time period, so Mrs. Jones will be sure to provide the feedback at a time that will not disrupt ongoing instruction. Any system that takes too much time to implement, or creates behavior problems in the classroom, is not a useful system.

N = Never leave a child with nothing left to work for!

Is the system designed so the child always has a reason to keep trying?

The system Mrs. Jones originally designed for Michael would very quickly have left him with no reason to keep trying. If Michael lost all the letters in the word "SURPRISE" on Monday, which is unfortunately a likely scenario, there would be no incentive for him to continue trying on Tuesday, Wednesday, Thursday or Friday, because he would have already lost the possibility of earning the reward. A suggested improvement to Mrs. Jones' system was to allow Michael to earn the letters to attain the reward, rather than having the teacher erase letters. However, Kelly realizes that Mrs. Jones needs to make an additional modification. If she simply tells Michael that he will get a reward if he earns

all the letters in the word "SURPRISE" by Friday, it is quite possible that he will have earned all the letters by Wednesday, and still not need to try on Thursday or Friday. Kelly suggests an easy solution. By removing the arbitrary time limit, Michael will always have a reason to keep trying. For example, Mrs. Jones can design the system so that Michael receives the reward as soon as he has earned all the letters, whenever that occurs, and then have him immediately begin working towards his next reward.

The best systems allow a child to earn a small reward for expending some effort, but a greater reward for expending greater effort. Mrs. Jones agrees to the suggested modifications, which means Michael could earn a small surprise very quickly if he tries hard. Such an incremental system, where the child receives some reward for some effort, and greater reward for greater effort, can more effectively motivate the child to exhibit consistent effort.

Figure 1: Incentive Systems

I	**Incentive or Instruction?** Does the child need an incentive, instructional assistance, or both?
N	**Not Negative!** Does the incentive system focus on the child's positive behavior?
C	**Criterion:** Does the criterion shape the desired response?
E	**Easy?** Is the system easy to understand and implement?
N	**Never leave a child with nothing left to work for!** Is the system designed so the child always has a reason to keep trying?
T	**Time:** Is the amount of time the child must work to receive the reward realistic for the child's developmental level?
I	**Individualized Incentive:** Is the incentive offered something that this child finds motivating?
V	**Verbal feedback:** Provide verbal feedback to develop the child's self-discipline.
E	**Evaluate:** If the system is not effective, re-evaluate. Have you followed all eight guidelines?

T = Time

Is the amount of time the child must work to receive the reward realistic for the child's developmental level?

Children's sense of time differs from that of adults. If the child perceives the reward is in the distant future, it will be a less effective motivator than if the child sees the possibility of reward as close at hand. Children may be given frequent points or tokens to show their progress towards earning the reward, but the reward itself should be offered within a time period that the child understands. Canter and Canter (1992) suggest that students in kindergarten and first grade should be able to earn their reward the same day; those in second and third grade may be able to work towards a reward for two days to a week; students in fourth through sixth grade should be able to work for one week, and students in grades seven through twelve can work for up to two weeks for a reward. However, children within any given grade may differ in their maturity levels. Usually the least mature students in the class are the ones who need the incentive system the most. When deciding how long to ask students to work for a reward, it is important to consider the developmental level of the least mature students in the group.

Not all children will be equally motivated by any given incentive.

Mrs. Jones expected Michael to work for a week to earn his surprise. Michael is a third grade student, but one of the less mature students in the class, so working for a week may not be a realistic expectation. When Kelly and Mrs. Jones modified the system so Michael could receive a surprise as soon as he accumulated seven letters, they made it possible for him to earn a reward in two days. The shorter time period increases the probability that Michael will be successful.

However, Mrs. Jones is concerned because, while she will do whatever is necessary to help Michael succeed, she does not want him to become too dependent on frequent rewards. With the modifications they have made, Michael could earn multiple surprises each week. The two teachers agree that the first time this incentive system is used with Michael; it will be implemented as they have just discussed. He will receive a letter at the end of each class period if he has controlled his comments, and a surprise as soon has he earns seven letters. This will allow Michael to earn his first surprise in as few as two days. To prevent Michel from developing the expectation that he should receive these frequent rewards forever, when Mrs. Jones introduces the system to Michael, she will explain that these are the rules for the first surprise. After he has earned the first surprise, they will sit down and renegotiate. They may decide to use the same rules to earn a second surprise. However, Michael needs to understand that over time he will be expected to work for longer periods of time before receiving a reward.

I = Individualized Incentive

Is the incentive you have selected something that will motivate this child?

If the incentive system is going to work, the child must want the reward enough to work hard for it. Just because the child's teacher or parent thinks a particular item or activity should be rewarding, does not mean the child will perceive it as rewarding (Downing, 1990; Downing, Moran, Myles & Orms-

bee, 1991; Shea & Bauer, 1987; Smith & Rivera, 1993).

Mrs. Jones meant well, but Michael might not believe that receiving a pencil or an eraser was worth the effort involved in making significant changes in his behavior.

Children differ, and not all children will be equally motivated by any given incentive. The list of potential rewards is almost limitless, and can include material items such as food, trinkets, school supplies, or art supplies. Privileges and social rewards such as extra recess, choice of assignment, using preferred art materials, being line leader, getting a preferred parking permit or positive note home can be extremely effective. The rewards can also include providing attention or offering bonus points to improve a grade. To make sure that the incentive offered is something that will motivate Michael, Kelly and Mrs. Jones discuss several options. First, they look at the function of his current behavior. When Michael blurts out in class he gains the attention of his classmates and teacher. Therefore, it is important for Michael to receive similar recognition when he raises his hand and waits for permission before speaking.

Whenever incentives are used, they should be paired with social reinforcement.

Kelly and Mrs. Jones also discuss ways to identify additional incentives. They can watch what Michael does during free time, and use those items and activities as rewards. They can ask him what he would like to earn, or use an interest inventory to identify potential rewards. A third option is to offer choices for rewards, such as letting him spend reward points on items from a classroom store, or select from a list of choices on a reward menu. Kelly shares with Mrs. Jones the reward menu she uses in her classroom. She suggests that by giving Michael the choice of receiving a small reward quickly, or saving for a larger reward later, he could develop the ability to delay gratification.

For the first surprise, Mrs. Jones decides to simply discuss with Michael what he thinks might be an appropriate reward. However, she tells Kelly that if this system works with Michael, she might consider expanding it to other struggling students in her class. If that happened, she thinks she would switch to a reward menu, because offering choices would be more effective with a group of children who might be best motivated by a variety of incentives.

V = Verbal Feedback

When the child receives reinforcement, do you pair it with verbal feedback that helps the child develop self-discipline?

Whenever incentives are used, they should be paired with social reinforcement, such as a smile, a ‘thumbs-up’ gesture, a pat on the back, or verbal praise. Pairing social reinforcement with incentives develops the student’s ability to maintain the desired behavior after the incentive system ends (Walker & Shea, 1999). Mrs. Jones plans to give Michel plenty of positive feedback.

Kelly tells Mrs. Jones that the “V” in the mnemonic helps her remember that some kinds of praise are more effective at helping a student progress from needing external controls to developing an internal locus of control. Several researchers have demonstrated that achievement increases when students attribute success or failure to their own effort (Brophy, 1981; Marzano et al., 2001). However, not all students realize that the effort they put into a task directly affects their success, and instead attribute failure to their own

lack of ability, bad luck, or other people, such as unfair teachers (Marzano et al., 2001). When Michael does well, it will be important for Mrs. Jones to make explicit the role his own effort had on his success. When he begins to attribute success to his personal effort, research suggests that his achievement will increase (Marzano et al., 2001). Incentive systems are supposed to be temporary interventions designed to help motivate students. Mrs. Jones will help Michael move beyond the need for an incentive system by providing thoughtful verbal feedback to him along with the earned reward.

It is important to start small and let the child experience initial success.

E = Evaluate

If the system is not effective, re-evaluate the eight guidelines for effective incentive systems.

A well-designed incentive system will be effective. If the system is not working, the problem is usually with one of the eight factors described above. For example, the criterion may be set too high and the child has become discouraged, or the incentive offered may not be something the child truly desires. A child who lacks necessary skills may need more instructional assistance in addition to the incentive system.

If the incentive system developed for Michael is not effective, then reviewing the first eight letters in the mnemonic can help identify areas in need of revision. Kelly and Mrs. Jones have carefully considered these eight questions in designing the system, so they expect the revised system will be effective. They have already planned for the system to be evaluated and perhaps modified after Michael earns his first surprise. However, if Michael struggles, the two teachers agree to use the mnemonic to re-evaluate and improve the plan. They know that, if they evaluate and adhere to these research-based guidelines, the system they design will help Michael achieve success in the inclusive classroom setting.

Final Thoughts

Collaboration and consultation are important aspects of the special educator's role. As students with disabilities spend increasing amounts of time in inclusive general education classrooms, the need for collaboration increases. Using the mnemonic to critique an incentive system is an easy way for special educators to assure that interventions are well designed. The mnemonic also provides a useful tool when consulting with parents and teachers. By sharing the mnemonic guidelines, special educators can help others learn how to create effective incentive systems.

References

Alberto, P. A., & Troutman, A.C. (1999). *Applied behavior analysis for teachers* (5th ed.). Upper Saddle River, NJ: Merrill.

American Academy of Pediatrics. (2001). *Understanding ADHD: Information for parents about attention deficit/ hyperactivity disorder*. Elk Grove Village, IL: American Academy of Pediatrics.

Bos, C. S. & Vaughn, S. (2006). *Strategies for teaching students with learning and behavior problems* (6th ed.). Boston, MA: Pearson.

Brophy, J. (1981). Teacher praise: A functional analysis. *Review of Educational Research, 51*, 5-32.

Cameron, J., & Pierce, W. D. (1994). Reinforcement, reward, and intrinsic motivation: A meta-analysis. *Review of Educational Research, 64*(3), 363 –423.

Canter, L., & Canter, M. (1992). *Assertive discipline: Positive behavior management for today's classroom*. Santa Monica, CA: Canter and Associates.

Chance, P. (1992). The rewards of learning. *Phi Delta Kappan*, 200 – 207.

Cheng, L. (1998). Enhancing the communication skills of newly-arrived Asian American students. ERIC/CUE Digest, Number 136. New York: ERIC Clearinghouse on Urban Education. (ERIC Document Reproduction Service No. ED 420 726).

Council for Exceptional Children. (2003). *What every special educator must know: Ethics, standards, and guidelines for special educators* (5th ed.). Upper Saddle River, NJ: Pearson.

Deci, E. L. (1971). Effects of externally mediated rewards on intrinsic motivation. *Journal of Personality and Social Psychology, 22*, 113-120.

Downing, J. A. (1990). Contingency contracts: A step-by-step format. *nterven-tion in School and Clinic*, 26(2), 111 – 113.

Downing, J. A., Moran, M. R., Myles, B. S., & Ormsbee, C. K. (1991). Using reinforcement in the classroom. *Intervention in School and Clinic, 27*(2), 85 – 90.

Goodman, R. F. & Gurian, A. (2004). *About discipline- helping children develop self-control*. Retrieved November 17, 2004 from NYU Child Study Center Web site: http://www.aboutourkids.org/aboutour/articles/discipline.html

Kampwirth, T. J. (1988). Behavior management in the classroom: A self-assessment guide for teachers. *Education and Treatment of Children, 19*(1), 1 – 10.

Kumar, K. (September 5, 2004). Money for grades: How much should it pay to be smart? *St. Louis Post Dispatch*.

Lenz, B. K. & Deshler, D. D. (2004). *Teaching content to all: Evidence-based inclusive practices in middle and secondary schools*. Boston, MA: Pearson.

Lepper, M. R., Greene, D., & Nisbett, R. E. (1973). Undermining children's intrinsic interest with extrinsic reward: A test of the overjustification hypothesis. *Journal of Personality and Social Psychology, 28*, 129 – 137.

Lockwood, A. T., & Secada, N. G. (1999). *Transforming education for Hispanic youth: Exemplary practices, programs, and schools. NCBE Resource Collection Series, No 12*. Washington, DC: National Clearinghouse for Bilingual Education. (ERIC Document Reproduction Service No. ED 434 788)

Martella, R. C., Nelson, J. R., & Marchand-Martella, N. E. (2003). *Managing disruptive behaviors in the schools: A school-wide, classroom, and individualized social learning approach*. Boston, MA: Allyn & Bacon.

Mastropieri, M. A. & Scruggs, T. E. (1991). *Teaching students ways to remember: Strategies for learning mnemonically.* Cambridge, MA: Brookline Books.

Marzano, R. J., Pickering, D. J., & Pollock, J. E. (2001). *Classroom instruction that works: Research-based strategies for increasing student achievement.* Alexandria, VA: Association for Supervision and Curriculum Development.

Shea, T. M., & Bauer, A. M. (1987). *Teaching children and youth with behavior disorders* (2nd ed.). Upper Saddle River, NJ: Prentice Hall.

Smith, D. D., & Rivera, D. M. (1993). *Effective discipline*. Austin, TX: Pro-Ed.

Sprick, R., Garrison, M., Howard, L. M. (1998). *CHAMPs: A proactive and positive approach to classroom management.* Longmont, CO: Sopris West.

Stronge, J. H., Tucker, P. D., & Hindman, J. L. (2004). *Handbook for qualities of effective teachers.* Alexandria, VA: Association for Supervision & Curriculum Development.

Walker, J. E. & Shea, T. M. (1999). *Behavior management: A practical approach for educators*. Upper Saddle River, NJ: Merrill.

Walqui, A. (2000). Access and engagement: Program design and instructional approaches for immigrant students in secondary school. *Topics in immigrant education 4, Language in education: Theory and practice, 94.* Washington, DC: Center for Applied Linguistics.

Wolfe, P. (2001). *Brain matters: Translating research into classroom practice.* Alexandria, VA: Association for Supervision & Curriculum Development.

About the author:

Linda Forbringer is an Assistant Professor in the Dept. of Special Education and Communication Disorders at Southern Illinois University Edwardsville.