

THE USE OF TOKEN ECONOMIES IN PRESCHOOL CLASSROOMS: PRACTICAL AND PHILOSOPHICAL CONCERNS

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Behavior problems are increasing in frequency among preschool children. Thus, preschool teachers must be prepared to manage the increasing disruptive behaviors exhibited in their classrooms. Because positive behavioral management strategies are accepted by teachers and have been proven effective, token economies may be promising interventions to manage disruptive behavior in the classroom. However, little research has been conducted in this area. In addition, there are developmental, practical, and philosophical issues that should be considered before token economies are recommended for preschool classrooms. This paper reviews the relevant research in this area and addresses each of these concerns.

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The prevalence of behavior problems among preschool children (age 2-5) has been increasing in frequency, and current estimates range from 2% (attention-deficit hyperactivity disorder; ADHD) to 17% (oppositional defiant disorder) (Campbell, 1990; Lavigne et al., 1998). In addition, the author stated that ADHD usually was comorbid with another disruptive behavior disorder. Consequently, it appears that teachers will have increasingly more children with behavior problems in their classrooms. Despite this possibility, 72% of teachers reported feeling insufficiently prepared to manage behavior problems in the classroom (Merrett & Wheldall, 1993). Thus, providing preschool teachers with skills and strategies to manage disruptive behavior effectively in the classroom is essential. Behavioral management strategies (e.g., positive reinforcement, time out, response cost) have proven effective in accomplishing this task (Martin & Pear, 1996; Miltenberger, 2000).

Despite their effectiveness, ease of implementation and teacher acceptability of behavioral techniques must be considered when deciding which strategies to recommend. For example, several studies have found that time out is an effective way to manage problem behaviors in preschool children (e.g., Eisenstadt, Eyberg, McNeil, Newcomb, & Funderburk, 1993; Greene, Kamps, Wyble, & Ellis, 1999; Roberts, Hatzenbuehler, & Bean, 1981). However, extensive training in the use of time out is required to use the procedure effectively with aggressive and defiant children (Barkley, 1997; Hembree-Kigin & McNeil, 1995; Greene et al.), and it may not be feasible for teachers to obtain such training.

A particular problem for preschool teachers is that children with behavior problems often refuse to stay in time out (McNeil, Clemens-Mowrer, Gurwitsch, & Funderburk, 1994; Taylor & Miller, 1997). In addition to causing a major distraction, time out refusal also represents a safety risk for both children and teachers. Thus, a less confrontive, easier, and more positive means of managing disruptive behavior in the classroom, such as a token economy, should be considered for preschool teachers. A token economy (e.g., star chart) is a program in which individuals earn tokens (e.g., poker chips, stickers) for exhibiting targeted behaviors (e.g., compliance), and can exchange these tokens for rewards (e.g., activity, snack) (Martin & Pear, 1996; Miltenberger, 2000). Often, a response cost procedure is used in addition to a token economy. A response cost is characterized by the removal of a certain amount of tokens when an undesirable behavior is exhibited (Martin & Pear). For the purpose of this paper, token economies will be discussed without the addition of the response cost procedure, unless otherwise specified.

Because preschool teachers have to manage children's behavior as well as teach academic readiness and social skills, a classroom behavioral management system should be simple to implement and use in order to allow the teacher to conduct his or her class without major disruptions. Miltenberger (2000) discussed the fact that token economies can require various degrees of effort depending upon their complexity. For example, implementing a token economy requires such considerations as defining the target behaviors, deciding what the tokens will be, and establishing a token exchange rate (Miltenberger). A study was conducted by Storey, Danko, Ashworth, and Strain (1994) in which a simple token economy (i.e., praise and stickers given

for social interactions) was implemented by teachers' aides to increase social interactions during free play. The teachers' aides reported that the token economy was easy to implement and use (Storey et al.). These results suggest that simple token economies entail little effort from the teacher, which would disrupt the class activities less often than a complex token economy.

Teacher acceptability also is a consideration when determining which interventions would be most effective at managing behavior problems in preschool classrooms. According to Witt, Elliott, and Martens (1984), and Elliott, Witt, Galvin, and Peterson (1984), teachers rated positive interventions (i.e., token economies, praise, and home-based reinforcement programs) as more acceptable than negative interventions (i.e., time out, response cost, and ignoring). Similar results have been found concerning mothers (Jones, Eyberg, Adams, & Boggs, 1998). These results are important to consider because parent acceptability of intervention strategies may affect teacher implementation of the strategies. For example, parents of preschool children may remove their children from the preschool if the teacher uses a behavior management strategy with which the parents do not agree.

Surprisingly, little research has been conducted using token economies to manage behavior problems in preschool classrooms (Baker, Stanish, & Fraser, 1972; Filcheck, 2003; Filcheck, McNeil, Greco, & Bernard, in press; McGoey & DuPaul, 2000; Wolfe, Boyd, & Wolfe, 1983). Positive results have been obtained when using token economies to manage disruptive behavior in preschool-aged children in non-classroom settings (e.g., home, mock classroom) (e.g., Budd, Leibowitz, Riner, Mindell, & Goldfarb, 1981; Jones, Downing, Latkowski, Ferree, & McMahon, 1992). In addition, the use of token economies to manage behavior problems in elementary classrooms has been effective (e.g., Anhalt, McNeil, & Bahl, 1998; Bahl, McNeil, Cleavenger, Blanc, & Bennett, 2000; DeMartini-Scully, Bray, & Kehle, 2000). Therefore, implementing a token economy in preschool classrooms has the potential to be an effective means to manage behavior problems.

Developmental Issues and Cognitive Readiness

One possible obstacle to using token economies for preschool children with disruptive

behavior is whether young children have the ability to understand a token economy. More specifically, at this age, children may not comprehend why they receive tokens, or how many tokens they must acquire to receive a reward. According to Piaget, however, children between ages 2 and 7 are in the preoperational stage of cognitive development, which is characterized by increased symbolic-representational ability (Bornstein & Lamb, 1999). In other words, children are able "to use a symbol, object, or word to stand for something" (Bukatko & Daehler, 1995, p. 291). Although it is possible that preschool children could understand token economies, it is important to consider that the complexity of token economies varies greatly. An effective token economy for preschool children must be developmentally sensitive.

Several authors (Jones et al., 1992; Swiezy, Matson, & Box, 1992; Titus et al., 1990) have discussed the importance of creating token economies that meet children's developmental needs. Specifically, these authors stated that in order to appeal to children, token economies should be characterized by structure, predictability, simplicity, brightly-colored tokens, and playfulness. A token economy also should be designed to make accommodations for individual differences (Titus et al.). For example, an active child may be required to sit quietly for shorter periods than a less-active child in order to earn tokens. Structure and predictability in a token economy appear to facilitate understanding among preschool children (Jones et al.; Kysela, 1972-1973; Titus et al.). Thus, clear and specific criteria for which behaviors and when tokens are distributed are qualities of developmentally sensitive token economies. Also, the token economy must be simple enough for preschool-aged children to comprehend. For example, exchange rates should require minimal mathematic skills (e.g., three stickers for a reward).

Because token economies must appeal to preschool children to be more effective (Titus et al., 1990), the actual materials of the system also should be developmentally appropriate. For example, Swiezy et al. (1992) used a bear puppet, "Buddy Bear," to explain the requirements of the token economy to the children. Additionally, the tokens were brightly colored felt shapes that were age appropriate (i.e., dinosaurs, smiley faces) (Swiezy et al.). Furthermore, McGoey and DuPaul (2000) suggested that tokens be visible to the children at all times to serve as visual

reminders of the rules and consequences of the token economy.

to other research (e.g., Musgrove, 1981), these results did not generalize to the regular classroom.

Token economies in non-classroom settings with disruptive preschool-aged children.

Results of research with disruptive preschool-aged children in non-classroom settings have suggested that these children have the developmental capacity to understand token economies (e.g., Barkley, 1987; Budd et al., 1981; Herman & Tramontana, 1971; Musgrove, 1981; Swiezy et al., 1992). For example, in a study by Budd et al., a home-based reinforcement procedure was found to be effective when children earned tokens for the absence of disruptive behavior (i.e., off-area, aggression, negative statements) in a summer treatment program.

Musgrove (1981) implemented a token economy in a facility for individuals with mental retardation. Three preschool-aged children diagnosed with emotional problems were found to have increased compliance and decreased out-of-seat behavior with the token economy. However, these gains were not maintained when the children were transferred to public school (Musgrove). Rowbury, Baer, and Baer (1976) implemented a token economy with 7 children in a mock preschool classroom with a teacher for experimental sessions. Results suggested that when teacher guidance (i.e., praise, prompts, instructions) was combined with the token economy, the children's task completion behavior increased significantly. Because this study was conducted in a mock classroom, results may not generalize to a typical classroom. Additionally, the effectiveness of each type of teacher guidance (e.g., praise) was not examined. In another study, the Good Behavior Game (a token economy in which a puppet, "Buddy Bear," gives children commands and they earn stickers for compliance) was implemented with 4 children with behavior problems (Swiezy et al., 1992). Results indicated that cooperation and compliance increased significantly, and generalization occurred across therapists but not settings.

Herman and Tramontana (1971) conducted a study in which group and individual token economies were used with disruptive preschool children in an experimental room for appropriate rest-time behavior. Additionally, they attempted to generalize behavioral gains to a Head Start classroom. When instructions concerning the token economy were explained to the children, more appropriate rest-time behavior was evident regardless of the reinforcement type. Similar

Summary of developmental issues

In sum, the literature concerning token economies with disruptive preschool-aged children suggests that token economies are effective in producing behavior change in settings other than the classroom. This literature suggests that preschool children are developmentally capable of comprehending token economies. However, research specifically focusing on generalization, disturbing effects (i.e., decreased intrinsic motivation), and whole-classroom token economies is lacking.

PRACTICAL ISSUES WITH THE USE OF TOKEN ECONOMIES IN PRESCHOOL CLASSROOMS

Before establishing a token economy in a preschool classroom to manage disruptive behavior, there are several practical issues to consider. For example, depending on the complexity of the token system, organizing and implementing a token economy can be time consuming (Miltenberger, 2000; Skinner, Cashwell, & Dunn, 1996; Turnbull, 1988), and teachers may decide that their time is better spent elsewhere (e.g., creating activities, using pre-established management systems). Furthermore, because of the increased prevalence of behavior problems among preschool children (Campbell, 1990; Lavigne et al., 1998), teachers often have several children in a classroom with disruptive behavior. A practical issue is whether a teacher can monitor multiple token economies, possibly with different behavioral expectations and different rates of token exchange. Teachers also may be resistant to using a token economy because the rewards or backup reinforcers can be expensive (Corrigan, 1995; Miltenberger, 2000), and because it seems unfair to provide rewards to some children and not others.

Another practical consideration involves maintenance and generalization. In the literature, behavioral gains produced by token economies have not been shown to maintain or generalize reliably (e.g., Corrigan, 1995; Herman & Tramontana, 1971; Musgrove, 1981). A few studies, however, suggested some generalization effects. For example, although behavioral gains did not generalize across settings in a study by Swiezy et al. (1992), they generalized across therapists. In addition, Miller, McCullough, and Ulman (1981) found that behavior change generalized to a non-intervention condition.

Possible solutions to practical concerns

The use of a whole-classroom token economy may address several of these practical considerations (e.g., time, effort, financial constraints, fairness). A whole-classroom token economy is characterized by one token economy in which all of the children in the class (disruptive and typical) participate (Anhalt et al., 1998; Bahl et al., 2000; Filcheck, 2003; Filcheck et al., in press). In addition, all of the children receive the same reward when the reinforcers are distributed, and most of the rewards are activity-based (Anhalt et al.; Bahl et al.; Filcheck; Filcheck et al.) which significantly reduces the cost of backup reinforcers (Kysela, 1972-1973; Miltenberger, 2000).

The use of a whole-classroom token economy has been effective in decreasing disruptive behavior in elementary-aged children (Anhalt et al., 1998; Bahl et al., 2000). For example, Anhalt et al. and Bahl et al.'s whole-classroom system consisted of labeled praise and happy faces for appropriate behavior and a warning and mild aversive consequences (i.e., sad faces) for inappropriate behavior. Additionally, the children were placed randomly into groups of four to five children, and rewards were given to groups with more happy faces than sad faces. Results of both studies indicated that the children's level of appropriate behavior increased with the implementation of the token economy as compared to the regular classroom discipline program. In addition, this system resulted in high rates of teacher and student satisfaction.

The use of a level chart as a whole-classroom token economy may further reduce the time and effort expended by the teacher in managing the system. The use of a class-wide level chart would require that each child's name be placed on the chart, and be moved up a level for appropriate behavior and down a level for inappropriate behavior. The children's names would need to be placed at a specified level in order to receive the reward. Thus, the teacher would not have to dispense tokens to each child for appropriate behavior, which could be time consuming. Additionally, the use of a level chart would not require that children be able to count tokens; they only would have to recognize the level at which they would receive a reinforcer. A level chart, the Level System (McNeil & Filcheck, in press), was used in research conducted by Filcheck (2003) and Filcheck et al. (in press) with positive results described below.

Concerning the practical issues of maintenance and generalization, research suggests that using a fading procedure may aid in the maintenance of behavioral gains after a token economy is withdrawn (e.g., Miltenberger, 2000; O'Leary, Poulos, & Devine, 1972; Storey et al., 1994). Additionally, Stokes and Baer (1977) and Stokes and Osnes (1989) recommend strategies to use to program generalization because it cannot be expected to occur naturally. For example, these authors suggest exploiting current functional contingencies (e.g., reinforcing occurrences of generalization), training diversely (e.g., using sufficient stimulus exemplars), and incorporating functional mediators (e.g., incorporating common salient physical stimuli) as strategies of generalization programming. Because results concerning the maintenance and generalization of token economies have not been promising in the past, it may be necessary, if programming generalization is not pursued actively, to foster realistic expectations in teachers by educating them concerning this issue. For example, Corringan (1995) suggests that "no one expects that positive effects of psychopharmacological agents administered for a short time can be maintained over time and across settings after the agents are withdrawn" (p. 1260). Thus, it may be unrealistic to expect lasting results from a brief token economy intervention after it is removed, and generalization has not been programmed..

TOKEN ECONOMIES IN PRESCHOOL CLASSROOMS WITH DISRUPTIVE CHILDREN

Although little research exists (e.g., Baker et al., 1972; Filcheck, 2003; Filcheck et al., in press; McGoey & DuPaul, 2000; Wolfe et al., 1983) concerning the use of token economies in preschool classrooms with children who exhibit disruptive behavior, available findings support the use of token economies for improving behavior problems in preschool classrooms. For example, Baker et al. conducted a study examining the effectiveness of using a token economy in addition to a time-out procedure to decrease the disruptive behavior exhibited in the classroom by 9 preschool children with mental retardation. The study included a control group of children in different classrooms who were matched for age and IQ. An ABAB design was implemented, and during the treatment the children received poker chips accompanied by social reinforcement (i.e., praise) for appropriate behavior. Chips could be exchanged for a treat (i.e., candy). In

addition, a 5-minute time-out procedure was used in which the children were taken to a time-out booth for severe inappropriate behavior such as temper tantrums and aggression. Results indicated that the experimental group exhibited significantly more disruptive behavior than the control group at baseline. During the treatment phases, the experimental group exhibited less disruptive behavior than the control group. Thus, the token economy was effective.

There are a few concerns with Baker et al.'s (1972) study. First, volunteer workers were trained to implement the token economy, and no treatment integrity observations were conducted to determine if they were implementing the procedures correctly; only daily record logs were kept by the volunteers themselves. In addition, the authors did not report how many time outs were conducted throughout the study. Also, the authors did not assess the relative influences of time out and the token economy on treatment outcome. Finally, the withdrawal and reinstatement phases were only 1 week each; thus, the effects produced may not be representative of the behavior that would have occurred if these phases were longer.

Wolfe et al. (1983) examined the effects of a token economy on cooperative play of children with behavior problems in the preschool classroom. A multiple-baseline design was used across 3 children and 2 settings (i.e., morning and afternoon classrooms). During treatment sessions the target children wore "happy face charts," and stickers were placed on the chart when these children exhibited cooperative play for an entire minute. The children could exchange stickers for outside time. Results suggested that the children's level of cooperative play increased by 50% during the treatment phase, and the number of time outs decreased for 2 of the children. Furthermore, generalization occurred between settings, which contradicts concerns that token economies decrease intrinsic motivation.

McGoey and DuPaul (2000) investigated the effects of a token economy plus a response cost in decreasing the disruptive behavior of 4 preschool children with Attention-Deficit Hyperactivity Disorder (ADHD) using a single-subject reversal design in two classrooms (i.e., ABACABAC and ACABABAC). The token economy phase consisted of buttons which the children could earn for following the classroom rules (e.g., stay in area). Buttons were exchanged for rewards at the end of the day. During

the response cost phase, all of the buttons were displayed on the chart and when a classroom rule was broken, a button was removed. In addition, a typically-behaved control child was observed as a peer comparison in each classroom. According to direct observation and teacher rating scales, both phases were associated with decreased disruptive behavior. Furthermore, teachers rated the response cost procedure as more acceptable than the token economy because the teachers believed that it was easier to implement.

A few limitations concerning McGoey and DuPaul's (2000) study are worthy of mention. For example, the peer comparison was observed less often than the target children, which may have reduced the validity of obtained results. Additionally, the developmental requirements of the token exchange procedure may have been too complex for the children's level of cognitive development. Also, the children did not receive their reward until the end of the school day, which may have resulted in weaker results in the response cost phase. Specifically, if the children lost all of their buttons at the beginning of the day, then the incentive for following rules would be removed for the rest of the day.

Filcheck et al. (in press) conducted a study in which a whole-class token economy, the Level System (described previously), was compared to Parent-Child Interaction Therapy (PCIT; see Hembree-Kigin & McNeil, 1995) skills to determine the efficacy of each in decreasing disruptive classroom behavior. Specifically, an ABACD treatment comparison design with a 4.5-month follow up was used in a preschool classroom referred for being "out of control." Seventeen preschool children and one teacher participated in the study. The teacher was trained in the use PCIT skills, as well as the Level System. Results suggested that the frequency of inappropriate behavior exhibited by the children decreased throughout the study while the number of time outs given by the teacher increased throughout the study. This investigation was limited by the lack of reversal of inappropriate behavior during the withdrawal phase, and the low level of teacher treatment integrity with the Level System. However, it provides preliminary support that the Level System may be a viable option for the management of disruptive behavior in preschool classrooms.

Additionally, the Level System was used in research study with an ABAB design with 4 male

children (2 disruptive and 2 typical) and 5 teachers in a preschool classroom (Filcheck, 2003). Results indicated, through behavioral observation, that the participants exhibited less disruptive behavior when the Level System was used in the classroom. However, teacher-report of child behavior did not indicate a stable decrease in disruptive behavior. The number of time outs given by the teachers steadily decreased throughout the study, except for the 1-month follow up. Limitations of this study include: ceiling effects for the behavior of the typical children, carryover effects for all participants' behavior, and data instability throughout conditions.

In sum, these few studies (Baker et al., 1972; Filcheck, 2003; Filcheck et al., in press; McGoey & DuPaul, 2000; Wolfe et al., 1983) demonstrate that token economies can be effective in decreasing disruptive behavior and increasing compliance and cooperation among preschool children with behavior problems. Thus, they provide preliminary support for the use of token economies with this population.

PHILOSOPHICAL CONCERNS WITH USING TOKEN ECONOMIES IN PRESCHOOL CLASSROOMS

The information presented thus far suggests that token economies may be the logical next step to manage disruptive behavior in preschool classrooms. However, there are several philosophical concerns regarding teachers, children, and parents that may serve as obstacles that interfere with or even prevent the use of token economies in preschool classrooms.

Teachers. Token economies can be time consuming and require much effort from the teacher, which may lead to less academic time in the classroom (Miltenberger, 2000; O'Leary et al., 1972; Skinner et al., 1996; Turnbull, 1988). For example, the teacher may spend more time observing the children's interactions and distributing tokens than teaching academics. Teachers, parents, and administrators are unlikely to approve of a behavioral management system that decreases the amount of time spent on teaching.

Children. One extensively researched philosophical concern with the use of token economies with preschool children is the possible decrease in intrinsic motivation that may result (e.g., Davidson & Bucher, 1978; Ford & Foster, 1976; Levine & Fasnacht, 1976; Kohn, 1993, 2000; Molloy,

1979; O'Leary et al., 1972). This concern has emerged from attribution theory, which states that future behavior results from the manner in which people perceive the causes of their past behavior (Bem, 1972; Kelley, 1973). In other words, "if people perceive salient external rewards as sufficient to account for a particular behavior then they are likely to regard that behavior as being controlled by external rewards" (Molloy, p. 32). It follows that receiving a reward for engaging in intrinsically interesting behavior will lead to a decrease in that behavior when the rewards are removed because that behavior is controlled by external rewards (Molloy). This theoretical idea has been labeled the "overjustification hypothesis" (Molloy).

Kohn (1993) described the negative effects associated with reward systems (e.g., token economies) as they relate to the overjustification hypothesis. Specifically, Kohn and other authors (e.g., Davidson & Bucher, 1978) cite examples of the manner in which rewards decrease intrinsic motivation. In one such example, Lepper, Greene, and Nisbett (1973) found that when preschool children were rewarded for using specific markers to draw, they were less likely to use the markers after the rewards were withdrawn. Kohn stated that reward systems are so powerful that being rewarded only once for exhibiting a certain behavior can "kill your interest in it for weeks" (p. 74). Similarly, Levine and Fasnacht (1974) argued that token economies "should be avoided unless there is a real danger to the person or there is no alternative" because of the potential decrease in intrinsic motivation (p. 820).

Moreover, Kohn (1993, 2000) stated that reward systems, such as token economies, create controlling environments that decrease children's self-esteem. According to the overjustification hypothesis, children begin to believe that they only are behaving (e.g., drawing with specific markers) for the external reward, and not because they like what they are doing (Kohn, 1993). Kohn (1993) contended that this process results in a decrease in self-esteem concerning the specific behavior.

Using token economies in preschool classrooms also may promote competition among students. For example, students may compete against each other to receive the most tokens. This type of environment may decrease the likelihood that children will learn the concepts of teamwork and helping others because they are focused on winning rather

than learning (Kohn, 1993). Thus, using a token economy actually may teach children that competing, rather than helping, is more effective at receiving rewards. In addition, Kohn stated that competition generates anxiety which can impair performance. In other words, the children may become anxious concerning whether or not they will receive a reward which, in turn, may interfere with their engaging in the positive behavior required to receive the reward.

Dependence on token economies is a philosophical concern that not only affects teachers, but can affect children as well. Kohn (1993) asserted that "the more we are rewarded, the more we come to depend on rewards" (p. 83). In other words, children's behavior will continually be associated with external rewards, and they will become so dependent on these rewards that they may not be able to exhibit the targeted behavior without expecting to receive a reward. According to Kohn, dependence on reward systems is expressed by children when the targeted behavior decreases after the withdrawal of the system.

Another potential philosophical concern with the use of token economies to increase appropriate classroom behavior (e.g., sharing, staying on mat) is that the children with behavior problems do not exhibit these behaviors frequently enough to receive the reward (Kohn, 1993; Skinner et al., 1996). These children even may terminate any attempts at receiving rewards because they believe that their efforts are hopeless (Kohn). Finally, the risk exists that the token economy rewards may be more rewarding than the regular class activities, especially if the rewards are activity-based, causing children to perceive the regular class routine as less rewarding once the token economy is implemented. This could lead to the children only participating in the regular class activities enough to obtain the reward (Turnbull, 1988).

Parents. Parental concerns should be considered because it is important for the children's parents to feel comfortable with the school's discipline policy. One parental concern may be that other parents could have access to information regarding their child's behavior. For example, parents may have access to all children's behavioral information (i.e., how many tokens each child received) if the teacher has not removed the tokens obtained for the day when parents enter the classroom to pick up their children. According to Kohn (2000), behavioral charts (e.g., star charts) that are displayed

in the classroom provide evidence that students are being ranked and compared against each other. Kohn suggests that this educational environment is detrimental to children and recommends that parents remove their children from these classrooms.

Parents also may become upset or embarrassed if their child does not receive the rewards obtained by other children. Parents may feel that their child is being singled out or humiliated if he or she regularly obtains fewer tokens and rewards than other children (Corrigan, 1995).

Another aspect of the token economy with which parents may be concerned is the addition of a response cost. A response cost is used in most token economy systems if there are undesirable behaviors (e.g., spitting, fighting) that potentially may compete with the desired behaviors (e.g., sharing, playing gently with toys) (Miltenberger, 2000). Using a response cost is a philosophical concern with parents because such an approach utilizes punishment and parents typically are less approving of punishment approaches (Kohn, 1993).

Research addressing philosophical concerns

Although these philosophical concerns are discussed widely in professional and popular press venues, there is a body of research that contradicts many of these popular beliefs (e.g., Corrigan, 1995; Davidson & Bucher, 1978; McGoey & DuPaul, 2000; Molloy, 1979; Okovita & Bucher, 1976; Reitman, 1998; Reynolds & Kelley, 1997). For example, concerning the frequently cited concern that token economies decrease intrinsic motivation in children, some authors (e.g., Ford & Foster, 1976) suggested that support for this result only has been found when token economies were used with behaviors that were exhibited at a high frequency (e.g., drawing with colorful markers) rather than behaviors that occurred at a low frequency (e.g., keeping hands and feet to self for a disruptive child). Furthermore, these authors stated that token economies typically are advised for behaviors that have low intrinsic interest (e.g., sitting quietly), and thus, implementing a reward system actually increases the probability that children will develop interest in these behaviors (Molloy).

In addition, Molloy (1979) and Davidson and Bucher (1978) conducted studies in which the effects of token economies on preschool children's intrinsic motivation were examined, and results suggested that

no effects on intrinsic interest were evident. Specifically, Molloy assigned 30 children to one of three conditions: token economy, expected reward (received reward without earning tokens), or unexpected reward. The children received tokens or rewards (depending on condition) for drawing with colorful markers. The tokens were exchanged for plastic animals. No significant differences in drawing behavior were found between pre- and post-observations for any condition. Davidson and Bucher's study consisted of an ABAB design in which 4 children received tokens for playing with a certain activity (i.e., house or clown). The authors found that children did not choose to engage in the reinforced activity less when the reinforcement was withdrawn.

Additionally, Eisenberger and Cameron (1996) conducted a meta-analysis that indicated that only expected, tangible rewards that were performance-independent had a detrimental effect on performance when measured by time spent on an activity. This effect was not found with verbal, unexpected, or quality- or completion- dependent rewards. Furthermore, Cameron and Pierce's (1994) meta-analysis of 96 experiments indicated that verbal praise increased intrinsic motivation, providing rewards did not produce a decrease in intrinsic motivation, and tangible rewards affected intrinsic motivation negatively only when the rewards were expected and provided noncontingently.

Recently, Cameron, Banko, and Pierce (2001) conducted a meta-analysis using research over the past 30 years to determine the overall effects of rewards on intrinsic motivation. They found that rewards produce no harmful effects during task performance. Specifically, results indicated that rewards produced positive effects on intrinsic motivation during low-interest tasks, and during high-interest tasks when they were explicitly tied to behavior and success. Negative effects on intrinsic motivation only were found when the rewards were expected, tangible, and not tied to the behavior. Thus, the authors concluded that rewards have no pervasive negative effects on intrinsic motivation.

Another philosophical issue addressed by researchers is that the disruptive children may not receive the rewards of the token economy. Even though research has shown that there have been no disturbing effects on the children who do not receive the rewards (Okovita & Bucher, 1976), one way to improve the possibility that these children will, in

fact, have the opportunity to receive the rewards is to individualize the expectations of each child's targeted behavior (Corrigan, 1995; Skinner et al., 1996). In other words, the teacher may have different behavioral expectations for each child, and thus, the children with behavior problems may receive tokens for exhibiting appropriate behavior at a lower frequency (or lesser degree of "appropriateness") than the children with typical behavior. Therefore, these children would have a similar opportunity to receive rewards as the typically-behaved children (Skinner et al.). However, this possible solution poses another philosophical concern, that individualizing expectations is unfair to the children held to more stringent criteria (Skinner et al.).

Concerning the philosophical issue of the addition of a response cost procedure to a token economy, research conducted by Reynolds and Kelley (1997) suggested that teachers as well as parents considered a response cost procedure to be a highly acceptable technique to use to manage disruptive behavior in preschool classrooms. Furthermore, McGoey and DuPaul (2000) reported that preschool teachers rated a response cost procedure as more acceptable than a token economy procedure because it was fairer and more time-efficient.

In response to Kohn's (1993) claims that reward systems create over-controlling environments and encourage competition, Reitman (1998) argued that psychologists using these techniques often include the teachers, parents, and children in the development of the intervention so that the reward system will be acceptable to everyone involved. Reitman also suggested that Kohn's arguments concerning reward systems (i.e., controlling environments, competition, loss of intrinsic motivation) lacked data. Specifically, Kohn ignored evidence from research that contradicted his viewpoints (e.g., Dickinson, 1989; Vasta & Stirpe, 1979).

Clinical issues addressing philosophical concerns

Amelioration of some of these philosophical concerns may be achieved clinically. For example, taking the background of the teachers and parents into account may be one possible clinical remedy to preventing philosophical concerns (Skinner et al., 1996; Turnbull, 1988). Skinner et al. stated that teachers may not have been trained in the use of contingency management procedures and therefore

may have misconceptions concerning the detrimental effects of such procedures. Also, developing token economies collaboratively with teachers, parents, and children may aid in alleviating many of these concerns (Reitman; Turnbull). For example, psychologists can organize group meetings with relevant individuals to develop the specific procedures and solve any problems that emerge.

Being educated about philosophical issues and taking them into account when developing token economies may help prevent negative perceptions. Examples of ways to be sensitive to philosophical concerns include: withholding tokens for competitive behavior to discourage competition among children, and removing the behavioral charts from view before parents arrive to pick up their children.

Recommendations for Future Directions

Despite the fact that token economies seem to be a promising intervention for managing disruptive behaviors in the preschool classroom, more empirical research needs to be conducted concerning their effectiveness as well as their developmental, practical, and philosophical sensitivity. Specifically, the literature regarding the use of individual token economies in preschool classrooms needs to be expanded. More research is needed that includes developmentally sensitive token economies and exchange rates.

Furthermore, research in this area should be expanded from the use of individual token economies within a classroom to whole-classroom token economies. Thus far, however, no studies have been found that have examined the effectiveness of a whole-classroom token economy in managing behavior problems in preschool classrooms. As mentioned above, the use of whole-classroom token economies may address some philosophical and practical concerns (e.g., less time consuming, children are not "singled out").

Significantly more research concerning parent and teacher satisfaction is needed, as well as preliminary research concerning child satisfaction. Satisfaction should be examined regarding both individual and whole-classroom token economies. The data collected from these studies would provide information concerning the utilization and dissemination of token economies.

Because response cost procedures have been found to be highly acceptable to teachers and parents (McGoey & DuPaul, 2000; Reynolds & Kelley, 1997), further research should examine the use of a response cost in addition to a token economy. The information obtained would provide psychologists with data concerning effectiveness, acceptability, and philosophical concerns (e.g., dependency). In addition, future research could address the concern of other parents having access to the children's behavioral information. While it might be assumed that visibility would increase effectiveness by providing greater feedback to children regarding their behavioral expectations, there currently is a lack of research in this area.

Another area in which future research may be helpful is determining the possible detrimental effects of using token economies with preschool children. For example, some of the issues raised in this paper (e.g., intrinsic motivation) have received attention; whereas, other issues (e.g., dependency, competition) have received little attention with this population. In addition to determining if short-term negative effects exist, the possibility of long-term detrimental consequences should be assessed through studies that include follow-up assessment.

Because previous research with token economies in this area has not resulted in demonstrating effective maintenance and generalization, future research should address this by programming the generalization of the token economy. For example, a phase could be added to a research study in which children's and teacher's generalization behavior is reinforced. Additionally, a stimulus exemplar could be added in that other preschool teachers could use the token economy with the class, or the token economy could be used in other settings (e.g., outside) rather than just the classroom. The effects of these training conditions on generalization of the behavioral gains obtained with the use of the token economy is worthy of future research.

In conclusion, token economies seem to be a promising intervention to assist teachers in managing the increasing levels of disruptive behavior being exhibited in their preschool classrooms (Campbell, 1990; Lavigne et al., 1998). Research suggests that preschool children can, in fact, comprehend and participate in token economies (e.g., Barkley, 1987; Budd et al., 1981; Musgrove, 1981). Yet, several

practical and philosophical concerns may hinder the development and implementation of token economies to manage preschool children's behavior problems. Therefore, the possible negative effects of token economies as well as the overall effectiveness of this approach with preschool populations needs to be evaluated with well-controlled empirical research before any wide-scale dissemination efforts are undertaken.

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