



EVIDENCE BASED INTERVENTION NETWORK EBI BRIEF

Mystery Motivator (Academic Intervention)¹

The Mystery Motivator intervention has been implemented in a variety of academic settings, primarily with elementary school age students. As first described by Jenson and colleagues (1994), this intervention involves the intermittent use of unknown reinforcers. In order to gain access to the reinforcer, students must engage in or refrain from predetermined academic or social behavior, as determined by the teacher. Several studies highlight the efficacy of Mystery Motivator to increase low rates of desired academic behavior due to performance (rather than skill) deficits.

Theoretical support

The theory underlying Mystery Motivator is grounded in behaviorism. The primary foundational principle is *positive reinforcement*, or the delivery of a desired stimulus following a behavior to increase future occurrences of that behavior. Additionally, reinforcement that is delivered on a *variable ratio* schedule (that is, after an unpredictable number of desired behaviors) results in a consistent level of behavior that is more likely to be maintained over an extended period of time (Alberto & Troutman, 2006).

Empirical support

In one of the earliest studies using this intervention, Moore and colleagues (1994) investigated the effectiveness and social validity of Mystery Motivator with a sample of nine elementary school students. Teachers in two classrooms (one third grade and one fifth grade) implemented the intervention on a classwide basis. Baseline and post-intervention levels of homework completion were recorded, and eight of the nine students targeted in the intervention demonstrated increases in rates of homework completion. Although homework accuracy was not specifically addressed in this study, collateral improvements in this area were noted as well. Furthermore, teachers found the intervention “acceptable” and easy to implement within their classrooms, and were able to execute the intervention with high integrity.

In a similar study, Madaus et al. (2003) explored the impact of Mystery Motivator on rates of math homework completion and accuracy among five 5th grade students. The five participants were selected from two general education classrooms (three from Classroom A and two from Classroom B), based on recommendations from teachers and the school principal. Mystery Motivator was implemented on an individual basis, with only the five selected students participating in the game. Students who completed 100% of the assigned math homework with at least 80% accuracy each day were allowed an opportunity to earn the mystery reinforcer. The intervention was implemented using an ABAB reversal design, for approximately six weeks. The results of this study indicated that the four students exhibiting problems with homework completion showed improvement in this area. The authors also note that the intervention was equally effective for children in both classrooms. With regard to accuracy, three of the four students presenting with difficulty in this area also demonstrated improvement, with two students showing statistically significant gains in homework accuracy from baseline to the end of the intervention. Furthermore, both students and teachers in this study rated

¹ Written by Stacy White, Indiana University doctoral student, spring 2010



EVIDENCE BASED INTERVENTION NETWORK EBI BRIEF

Mystery Motivator as likeable and easy to implement, and were somewhat likely to use this intervention again in the future or recommend it to peers. As in Moore et al.'s (1994) study, teachers were able to implement the intervention with 100% integrity.

Finally, a recent study by Lynch and colleagues (2009) compared the effectiveness of three modifications of the Mystery Motivator intervention on students in a self-contained class. Six students in various grades who identified with either a learning disability or speech impairment participated in the study. The authors implemented three variations of Mystery Motivator, using three types of group contingencies: *independent*, where the homework completion and/or accuracy requirement was in place for all students, but reinforcers were available on an individual basis; *interdependent*, where the class average of homework completion and/or accuracy was used to determine if the entire class received a reinforcer; and *dependent*, where the availability of reinforcement for the entire class was based on the homework performance of one randomly-selected student. Following a two-week baseline period, an alternating treatment design was used, whereby one of the three contingency treatments was administered each school day over a 35-day period. Overall, all of the tested variations of Mystery Motivator were found to increase students' rates of homework completion, and the interdependent contingency was most effective at increase rates of homework accuracy. The teacher in this study reported that all three variations of Mystery Motivator were beneficial and easy to implement, and that she would recommend this intervention to other teachers. With the exception of one participant, students also enjoyed the intervention and the randomization of reinforcers. As in the other studies summarized above, Mystery Motivator was implemented with 100% integrity.

In sum, there is support in the research literature for the use of Mystery Motivator to improve academic outcomes, particularly with regard to homework completion and accuracy, for elementary school-age students. Though few studies have investigated the efficacy of this intervention, the emerging data suggest that Mystery Motivator is effective for students with and without disabilities, and is perceived favorably by both teachers and students.



EVIDENCE BASED INTERVENTION NETWORK EBI BRIEF

References

- Alberto, P.A. & Troutman, A.C. (2006). *Applied behavior analysis for teachers* (7th ed.). Upper Saddle River, NJ: Pearson Education, Inc.
- Jenson, W. R., Rhode, G., & Reavis, H. K. (1994). *The Tough Kid Tool Box*. Longmont, CO: Sopris West.
- Lynch, A., Theodore, L.A., Bray, M.A., & Kehle, T.J. (2009). A comparison of group-oriented contingencies and randomized reinforcers to improve homework completion and accuracy for students with disabilities. *School Psychology Review*, 38(3), 307-324.
- Madaus, M.M.R., Kehle, T.J., Madaus, J., & Bray, M.A. (2003). Mystery motivator as an intervention to promote homework completion and accuracy. *School Psychology International*, 24, 369-377.
- Moore, L.A., Waguespack, A.M., Wickstrom, K.F., Witt, J.C., & Gaydos, G.R. (1994). Mystery motivator: An effective and time efficient intervention. *School Psychology Review*, 23(1), 160.