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THE EFFECTS OF TEACHER-DELIVERED E-COACHING ON PARAEDUCATORS AND STUDENTS

Abstract

Paraeducators play a vital role in providing special education services to students with disabilities, yet they often enter the classroom with inadequate training. Using a multiple-baseline across participants research design, we evaluated the effects of job-embedded bug-in-ear (BIE) coaching delivered to paraeducators on their use of behavior specific praise (BSP) while working 1:1 with transition-age students with autism spectrum disorder (ASD). Results showed all paraeducators used optimal rates of BSP during the intervention condition while receiving immediate feedback from the special education teacher (i.e., *eCoach*). High rates of BSP were sustained over time, and changes in expressive social and communicative behaviors in students were observed in relation to the intervention. Our findings extend the literature on BSP and have merit to help establish BIE coaching as an evidence-based practice (EBP) for paraeducators.

Background/Rationale

According to the U.S. Department of Education (2019), the number of paraeducators employed nationwide to provide special education services to students with disabilities far exceeds the number of special education teachers. Paraeducators support students with some of the most significant educational, instructional, and behavioral needs; yet they often enter the classroom with limited preparation (Brock & Carter, 2013; Rosenberg et al., 2020). In a systematic review of the literature on paraeducator-delivered teaching practices, Brock and Carter (2013) found paraeducators to be capable of implementing EBPs with high fidelity following sufficient professional learning and development. Though it is essential to offer effective professional development (PD) opportunities to paraeducators, doing so remains a challenge (Brock & Carter, 2013). In other words, there is a disconnect between the identification of what paraeducators' PD should entail and *how* to effectively put ideologies into practice in the classroom (Brock & Anderson, 2020).

Brock and Anderson (2020) suggest performance feedback through coaching to be an effective and sustainable method for putting professional learning ideology into practice by reinforcing newly learned paraeducator teaching behaviors and correcting errors while they are providing support to students with low incidence disabilities. *eCoaching* with BIE technology is an empirically validated method for providing educators with on-the-spot performance feedback while they are actively teaching (Horn et al., 2020; Rock et al., 2009). Less is known about the efficacy of BIE on paraeducator behavior; however, preliminary findings suggest BIE is a viable

method for improving paraeducator-delivered instruction (Rosenberg et al., 2020; Scheeler et al., 2018).

Purpose of Study

The purpose of our study was to extend the existing *eCoaching* literature by experimentally evaluating the effects of providing on-the-spot feedback via BIE to paraeducators as they worked 1:1 with transition-age students with autism spectrum disorder (ASD). With the special education teacher as the *eCoach*, we measured the effects of job-embedded *eCoaching* on paraeducators' use of BSP. We also measured fading effects and students' expressive social and communicative responses to receiving praise from paraeducators during instruction. The following research questions guided our investigation (see Horn et al., in Review).

1. How does immediate feedback delivered via BIE technology by a special education teacher impact paraeducators' use of behavior specific praise?
2. How does the systematic fading of BIE coaching affect paraeducators' sustained use of behavior specific praise?
3. What social and communicative responses (e.g., eye contact, facial expression, vocalizations or verbalizations) are observed in transition-age students with ASD in response to receiving praise from a paraeducator who is simultaneously receiving in ear feedback on their use of behavior specific praise?

Method

Using a multiple-baseline research design (Ledford & Gast, 2018) replicated across participants, we evaluated the effects of the intervention. That is, we examined the special education teacher's use of BIE to provide on-the-spot feedback to paraeducators' to increase their use of BSP during 1:1 instruction. We measured the percentage of BSP given as well as the rate per minute across baseline, intervention, fading, and maintenance conditions. Following the calculation used by Scheeler et al. (2018), we measured the percentage of BSP by dividing the total number of BSP statements delivered by the total number of [all] praise statements delivered, multiplied by 100. To determine the rate per minute, the total number of BSP statements delivered in each session was divided by the session length (range = 9-16 minutes; Markelz et al., 2021). To ensure reliability across participants and conditions, we calculated interobserver agreement (IOA; Horner et al., 2005). Reliability data were collected across a minimum of 33% of all conditions for each participant. There were three paraeducator/student dyads. Dyad 1 included Faye, a Black female paraeducator with eight years of experience in special education and a high school diploma and some college classes. Faye worked 1:1 with Damani, a 21-year-old Black male student with a diagnosis of ASD and intellectual disability (ID). Dyad 2 consisted of Danny, a Black male, who was a paraeducator with 18 years' experience in special education and a bachelor's degree. Danny worked 1:1 with Jason, a 19-year-old Black male student with a diagnosis of ASD. Dyad 3 included Will, a White male paraeducator, who was in his second year of employment in that position. Will worked 1:1 with Shamar, a 21-year-old Black male student who had a diagnosis of ASD.

To answer our third research question, we examined social and communicative responses of students immediately following (i.e., 1-3s) praise delivery. As such, we observed verbal and nonverbal behaviors following praise delivery from the paraeducator. These behaviors included: 1) making eye contact with the paraeducator, 2) changes in facial expression, and 3) verbalizations (e.g., “thank you”) or vocalizations (e.g., giggle).

Results

Occurrence of Behavior Specific Praise

We measured the percentage of BSP given by paraeducators as well as the rate per minute BSP was offered across conditions. Data revealed the percentage of BSP given during baseline was low across participants (range = 0-10). When paraeducators received immediate feedback via BIE, the mean percentage of occurrences of BSP increased across all three participants (Faye = 73%; Danny = 83%; Will = 92%). Similarly, the mean rate per minute BSP was given during the intervention condition increased across participants (Faye = 2.9; Danny = 1.4; Will = 5.8). High rates of BSP were observed as the intervention was faded and removed.

Students’ Responses to Praise

To answer the third research question, we examined students’ responses to praise. Changes were observed in all three students in the occurrence of eye contact, facial expressions, and vocalizations or verbalizations, all of which immediately followed praise offered by paraeducators. Damani’s rate of eye contact increased by 5.2 in response receiving BSP. Further, during the intervention condition, Damani was observed smiling at an increased rate of 2.8 and his verbalizations/vocalizations immediately following praise delivery increased by 9.4. Jason’s rate of eye contact increased by 7.6 in response to BSP delivery. Facial expressions increased by 2.2 and verbalizations/vocalizations increased by .4 during the intervention condition. Finally, Shamar’s rate of eye contact in response to receiving BSP increased by 6.0. Eye contact often accompanied a smile, as Shamar’s facial expressions increased by 14.6 in response to receiving BSP. His vocalizations/verbalizations decreased slightly, by .7.

Social Validity Survey

Results from the social validity survey revealed the special education teacher and paraeducators found BIE to be an effective form of PD. The teacher noted BIE to be a “much less intrusive way to offer feedback.” The teacher further stated, “In most of the PD I’ve gone to, there is rarely any follow-up on skills learned and I think this [BIE] would help bridge that gap.” All three paraeducators reported they “liked” receiving immediate feedback from the teacher via BIE, and one elaborated, “It was helpful feedback to let me know what to say during the right time.” One paraeducator shared that they “praised the kids more” and another stated they became “more aware of when to praise.” All paraeducators agreed BIE was an effective form of PD, and one suggested it would be “especially effective for new teacher assistants.”

Discussion

Our results suggest BIE coaching is an effective method for providing job-embedded PD to paraeducators who provided instruction to students with ASD. Similar to findings from Rosenberg et al. (2020) and Scheeler et al. (2018), our investigation revealed a functional relation between variables when paraeducators received immediate feedback via BIE. Our study extends the extant literature in two notable ways. First, findings from this investigation contributed to the literature to help establish BSP as an evidence-based practice (Royer et al., 2019; Zoder-Martell et al., 2019). Second, our findings support previous research suggesting *eCoaching* is a viable method for providing training and classroom-based support to paraeducators who support students with ASD.

When paraeducators received immediate feedback via BIE *eCoaching*, they were observed delivering BSP at a mean rate per minute of 5.92 (range = 5.76-6.0). After reaching criterion, all paraeducators sustained high rates of BSP as the intervention was faded and removed. Anecdotal notes indicated Danny gave a lower rate of BSP compared to Faye and Will; however, he his BSP statements reflected greater variety. That is, Danny's BSP reflected careful thought and consideration to the behavior being reinforced. By contrast, Will had the highest rate of BSP, yet there was less variation in the phrases used, albeit specific. Despite these differences, our investigation showed BIE *eCoaching* to be an effective method for increasing the occurrence of BSP in paraeducators. Additionally, data measuring students' observable social responses to receiving praise are promising, as they help validate the social validity of the intervention when working with students who have ASD.

Implications

Based on our findings, we suggest:

1. Special education teachers consider using BIE *eCoaching* to provide classroom-based, job-embedded professional learning and support to paraeducators.
2. Teachers and paraeducators use BSP when working with students with ASD.
3. Researchers consider using a tool (e.g., behavior specific praise observational tool; BSP-OT; Markelz et al., 2021) to investigate dimensions of effective praise use.

Conclusion

Paraeducators are instrumental in providing special education services to students with disabilities; however, research specific to effective professional development is limited (Brock & Anderson, 2021). Our study further validates findings from Scheeler et al. (2018) and Rosenberg et al. (2020), showing BIE is a viable method for providing real-time feedback to paraeducators while they are actively teaching students with ASD. Our study extended previous work by measuring observable changes in expressive social behaviors in students with ASD immediately following praise delivery. Our results also add to the literature on an emerging EBP (i.e., BSP; Royer et al., 2019; Zoder-Martell et al., 2019). Finally, as the third experimental study by an independent group of researchers, our investigation has merit to help establish *eCoaching* as an EBP for paraeducators who work with students with ASD.

References

- Brock, M. E., & Anderson, E. J. (2020). Paraprofessionals who work with students with intellectual and developmental disabilities: What does the research say? *Psychology in the Schools*, 1-21. <https://doi.org/10.1002/pits.22386>
- Brock, M. E., & Carter, E. W. (2013). A systematic review of paraprofessional-delivered educational practices to improve outcomes for students with intellectual and developmental disabilities. *Research and Practice for Persons with Severe Disabilities*, 38(4), 211-221. <https://doi.org/10.1177/154079691303800401>
- Horn, A. L., Gable, R. A., Bobzien, J. L., Tonelson, S. W., & Rock, M. L. (2020). Teaching young adults job skills using a constant time delay and eCoaching intervention package. *Career Development and Transition for Exceptional Individuals*, 43(1), 29-39. <https://doi.org/10.1177/2165143419828983>
- Horn, A.L., Rock, M. L., Douglas, K., Bean, K., Layden, S. J., & Roitsch, J. (in Review). The effects of teacher delivered bug in ear coaching on paraeducators and students. Manuscript submitted for publication. *Education and Training in Autism and Developmental Disabilities*.
- Horner, R. H., Carr, E. G., Halle, J., McGee, G., Odom, S., & Wolery, M. (2005). The use of single-subject research design to identify evidence-based practice in special education. *Exceptional Children*, 71(2), 165-179. <https://doi.org/10.1177/001440290507100203>
- Ledford, J. R., & Gast, D. L., & (Eds.). (2018). *Single case research methodology* (3rd. ed.). New York, NY: Routledge.
- Markelz, A., Riden, B., Floress, M. T., Balint-Langel, K., Heath, J., & Pavelka, S. (2021). Teachers' Use of Specific, Contingent, and Varied Praise. *Journal of Positive Behavior Interventions*. <https://doi.org/10.1177/1098300720988250>
- Rock, M. L., Gregg, M., Thead, B. K., Acker, S. E., Gable, R. A., & Zigmond, N. P. (2009). Can you hear me now? Evaluation of an online wireless technology to provide real-time feedback to special education teachers-in training. *Teacher Education and Special Education*, 32(1), 64-82. <https://doi.org/10.1177/0888406408330872>
- Rosenberg, N. E., Artman-Meeker, K., Kelly, E., & Yang, X. (2020). The effects of a bug-in-ear coaching package on implementation of incidental teaching by paraprofessionals in a K-12 school. *Journal of Behavioral Education*, 29, 409-432.
- Royer, D.J., Lane, K.L., Dunlap, K.D., & Ennis, R.P. (2019). A systematic review of teacher-delivered behavior-specific praise on K–12 student performance. *Remedial and Special Education*, 40(2), 112-128. <https://doi.org/10.1177/0741932517751054>
- Scheeler, M. C., Morano, S., & Lee, D. L. (2018). Effects of immediate feedback using bug-in-ear with paraeducators working with students with autism. *Teacher Education and Special Education*, 41(1), 24-38. <https://doi.org/10.1177/0888406416666645>
- U. S. Department of Education. (2019). 41st annual report to congress on the implementation of the Individuals with Disabilities Education Act parts b and c. Retrieved from <https://www2.ed.gov/about/reports/annual/osep/2019/parts-b-c/41st-arc-for-idea.pdf>
- Zoder-Martell, K. A., Floress, M. T., Bernas, R. S., Dufrene, B. A., & Foulks, S. L. (2019). Training teachers to increase behavior-specific praise: A meta-analysis. *Journal of Applied School Psychology*, 35(4), 309-338. <https://doi.org/10.1080/15377903.2019.1587802>