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Effects of E-Coaching During Mursion™ Simulations On the Occurrence and Variety of Behavior Specific Praise

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Abstract

We used a concurrent multiple-baseline research design replicated across participants to evaluate the effects of *e*Coaching on increasing the delivery and maintenance of behavior specific praise (BSP) in a mixed-reality Mursion™ classroom simulation. Participants consisted of four master's students in a special education program. Results showed noteworthy increases in the rate and percent participants gave BSP during the intervention condition. Additionally, praise variety increased in all participants, and high rates of BSP were observed as the intervention was faded and removed all together. Our study extends the extant literature on an emerging evidence-based practice (i.e., BSP) and helps validate *e*Coaching and an effective method for providing immediate feedback during Mursion™ classroom simulations.

Background/Rationale

Mursion™ simulations have received growing attention in teacher preparation programs (Dieker et al., 2014; Judge et al., 2013), and the COVID-19 pandemic led to increased use across universities nationwide. Formerly dubbed TeachLive™, Mursion™ is a "mixed reality" environment that provides users repeated opportunities to implement newly learned instructional practices in a simulated classroom (Hartle & Kaczorowski, 2019). Practice-based learning in a "safe" environment enables preservice teachers an opportunity to refine teaching and behavioral strategies over time before stepping foot into the classroom. Simulations involve a combination of human and computerized components (hence, the term "mixed reality") that work behind the scenes to produce a realistic and interactive environment (Dawson & Lignugaris/Kraft, 2017).

Performance feedback is a critical component of Mursion™, and it typically occurs at the conclusion of the simulation (Dalinger et al., 2020). However, preliminary research suggests real-time, in-ear coaching during Mursion™ can improve teacher performance (e.g., Elford et al., 2013), yet findings in the extant literature are limited and mixed, at best. An easy-to-implement behavioral strategy, behavior specific praise (BSP), has been shown empirically to increase student engagement, in real world classrooms, while simultaneously decreasing undesirable classroom behavior (Royer et al., 2019; Zoder-Martell et al., 2019). BSP has also been recognized as a potential evidence-based practice (EBP; Horn et al., in Review; Royer et al., 2019; Zoder-Martell et al., 2019). A need exists to investigate BSP use in virtual classroom environments during teacher development to ensure teacher educators are adequately preparing preservice teachers to implement BSP with fidelity.

Purpose of Study

In response to the aforementioned need, we sought to extend research on *e*Coaching during Mursion™ by experimentally evaluating the effects of real-time feedback delivered via *e*Coaching on increasing the occurrence and variety of BSP given to student avatars in a simulated middle school inclusion classroom. We were interested in learning if master's level students who were enrolled in a graduate-level behavior management course would naturally use BSP, or if practical application of BSP was observed because of bug-in-ear (BIE) coaching. Additionally, we examined how *e*Coaching impacted participants' use of equitable BSP in a simulated classroom setting. The research questions from our study (Horn et al., in Review) included the following:

1. Is there a functional relation between *e*Coaching and increased use of behavior-specific praise during a mixed reality classroom teaching simulation for master's students in a special education program?
2. How does *e*Coaching impact master's students' use of equitable behavior specific praise, during a mixed reality classroom teaching simulation
3. How does *e*Coahing impact master's students' praise variety, as measured by the BSP-OT, during a mixed reality classroom teaching simulation?

Method

We used a concurrent multiple-baseline research design (Ledford & Gast, 2018) replicated across four participants to evaluate the effects of the *e*Coaching in increasing the delivery and maintenance of BSP. Participants reached intervention criterion when 90% of praise statements were coded as BSP for three consecutive sessions. Once they reached criterion, participants immediately transitioned into the fading condition for three sessions (Horn et al., in Review), and one maintenance probe followed fading for all participants. We defined BSP as a positive verbal praise statement given by a participant to a student avatar specifying a description of the behavior being reinforced within 3s of its occurrence (Horn et al., in Review; Scheeler et al., 2018).

We used three recording methods to analyze various dimensions of BSP. First, frequency recording revealed the number of BSP statements given to student avatars by participants. We converted these data to percentage of BSP and rate of BSP per minute. Second, we were interested in learning whether participants directed increased rates of BSP toward the student avatar with a diagnosis of ASD and challenging behavior. To achieve this, we evaluated how *e*Coaching impacted participants use of equitable BSP in an inclusive middle school classroom simulation by comparing the rate in which BSP was delivered to the student avatar with ASD compared to his typically developing peers. Third, we adapted the Behavior-Specific Praise— Observation Tool (BSP-OT; Markelz et al., 2021) to analyze BSP variety and reported the rate of BSP variety per minute. Using interval recording, independent observers indicated each praise statement given (i.e., general praise, BSP) while recording the variety and simultaneously noting who the praise statement was directed toward (e.g., student avatar, group). We calculated varied praise by dividing the number of different descriptive words or adjectives (e.g., love, good, excellent) used by the total number of BSP statements given (Markelz et al., 2021).

Results

Occurrence of Behavior Specific Praise during Mursion™

Study results indicate that participants did not provide BSP consistently (i.e., range, from 0% to 50%) or frequently (i.e., range, from 0 to .4 per minute) during the baseline condition. Upon introduction of the independent variable (i.e., immediate feedback via BIE), data reveal an increase in the use and rate of BSP by all for participants (Khyla = 72%; Tina = 58%; Linsley = 87%; Kim = 80%). Further, fading and maintenance data show that all four participants continued using a high percentage of BSP during each session as the intervention was faded and removed.

Equitable Praise

During the baseline condition, participants were observed using similar mean rates of praise across all students (Nate = .5; Dev = .2; Jasmine = .1). Participants were not observed giving BSP to groups during baseline. During the intervention condition, the mean rate of individual BSP increased and greater differentiation rates were observed (Nate = 6.1; Dev = 4.3; Jasmine = 2.6). Group-directed BSP was observed during the intervention condition, and similar to the latter, higher rates of BSP were observed when the group included Nate. The mean rate of BSP in a group that included Nate (i.e., Nate and at least one other student) was 2.1, compared to a mean rate of 1.3 when the group did not include Nate. High rates of equitable BSP continued as the intervention was faded and removed all together, with individual BSP given to Nate being at least twice that of Dev and Jasmine.

Praise Variety

Participants used little-to-no variety when giving BSP during the baseline condition. As the percentage and rate of BSP increased during the intervention condition, an increase in praise variety was observed across participants as well (e.g., great, good, excellent, like, appreciate, amazing, nice, wonderful, awesome). Participants continued using variety when giving praise as the intervention was faded and removed.

Social Validity Survey

Results from the social validity questionnaire revealed all participants "liked" receiving feedback via *e*Coaching during Mursion™ simulations, crediting feedback delivery for improving their ability to provide BSP. One participant shared, "The feedback taught me what behavior to look for to praise and how to be specific." Another participant stated, "I found that I enjoyed presenting more opportunities for the students to respond just so I could give them more praise. This makes me think of my teaching style…this experience will make me redesign my teaching to be more interactive and will help me build a more student driven agenda to accomplish the curriculum."

Discussion

Results from our investigation suggest providing real-time feedback via *e*Coaching during a mixed-reality classroom simulation is an effective training technique to use during teacher preparation/development. Our findings are consistent with those from Elford and colleagues (2013), validating the value in providing immediate feedback delivered via BIE while engaging in a Mursion™ simulation. Our research extends the literature by targeting an emerging evidence-based practice (i.e., BSP), and in addition to examining the occurrence of BSP, we also measured equitable BSP as well as praise variety. Still, more research is needed.

Implications

Based on our research findings, we recommend:
1. Providing practice-based learning opportunities with feedback delivered via BIE during teacher preparation in simulated classroom environments, such as Mursion™.
2. Incorporating equitable BSP and praise variety when preparing pre- and in-service teachers to use BSP, during simulated clinical experiences, such as Mursion™.
3. Researchers consider using   a behavior specific praise observational tool, such as the BSP-OT (Markelz et al., 2021) to measure the dimensions of effective praise use.

Conclusion

Using mixed-reality teaching simulations in teacher preparation/development is not a new concept (Dieker et al., 2014; Judge et al., 2013). Our results align with preliminary findings from Elford et al. (2013), showing positive effects when BIE coaching is used during Mursion™ classroom simulations. Results from our study support using Mursion™ with BIE coaching during teacher development, as an approach to providing practice-based learning opportunities with feedback that resulted in substantial changes in participants' BSP use (i.e., occurrence, equity, variety).

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