Evaluating the effectiveness of Virtual Behavior Skill Training on Teachers of Students with Autism in Nigeria

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BACKGROUND

This study examines the effectiveness of a culturally responsive virtual training model using a single-subject multiple-baseline design to evaluate Behavior Skills Training (BST) delivered to teachers of students with autism in Nigeria. Given the limited availability of in-person training and behavioral support services in many Nigerian educational settings, this study employed a virtual Behavior Skills Training package delivered in real time using Bug-in-Ear (BIE) technology to coach teachers during classroom instruction.

Teachers participating in the study worked with students diagnosed with autism who exhibited challenging behaviors and skill deficits requiring individualized intervention. Each teacher received remote training and coaching on evidence-based strategies, such as Picture Exchange and behavior contract designed to increase functional communication and reduce problem behavior.

Cultural and contextual considerations were central to the training design. These included assessing teachers' professional experiences and comfort with technology, adapting materials to fit classroom resources, and respecting local educational norms. Additionally, social validity was measured at multiple points to capture teacher perceptions of training acceptability, confidence in implementation, and readiness to address behavioral challenges.

METHODS

Participants:

Teachers. Two teachers currently employed at an autism center in the Western region of Nigeria participated in the study. Both teachers are male.

Students. The study included two students diagnosed with autism, age 15 and 17. Both student students are male.

Setting:

Trainer provides virtual coaching during school hours, via HIPPA-compliant Zoom platform

Design:

A nonconcurrent multiple-baseline design was implemented across teacher/student dyads. The full study included five teachers working in an autism center in Nigeria and five students with autism. For this poster, data from two teacher/student dyads are presented to illustrate the outcomes.

Dependent Variables:

(1) Teachers' abilities to implement evidence-based interventions

(2) Functional Communication (and problem behaviors for Student 1)

Independent Variable:

Implementation of Virtual BST using BIE technology to coach teachers in real time.

Interobserver Agreement (IOA):

IOA was collected for 25% of sessions across all phases

- Teacher/Student *Data*: Average of 96% agreement, ranging from 75%-100%
- Teacher Implementation *Data*: Average of 92% agreement, ranging from 75%-100%

PROCEDURES:

Assessments. Each teacher completed an intake survey and participated in a functional assessment interview to identify target student behaviors and teacher training needs.

Preparation. Based on assessment outcomes, an individualized action plan was developed for each teacher-student dyad. Visual supports and data collection sheets were created to guide implementation and monitor progress.

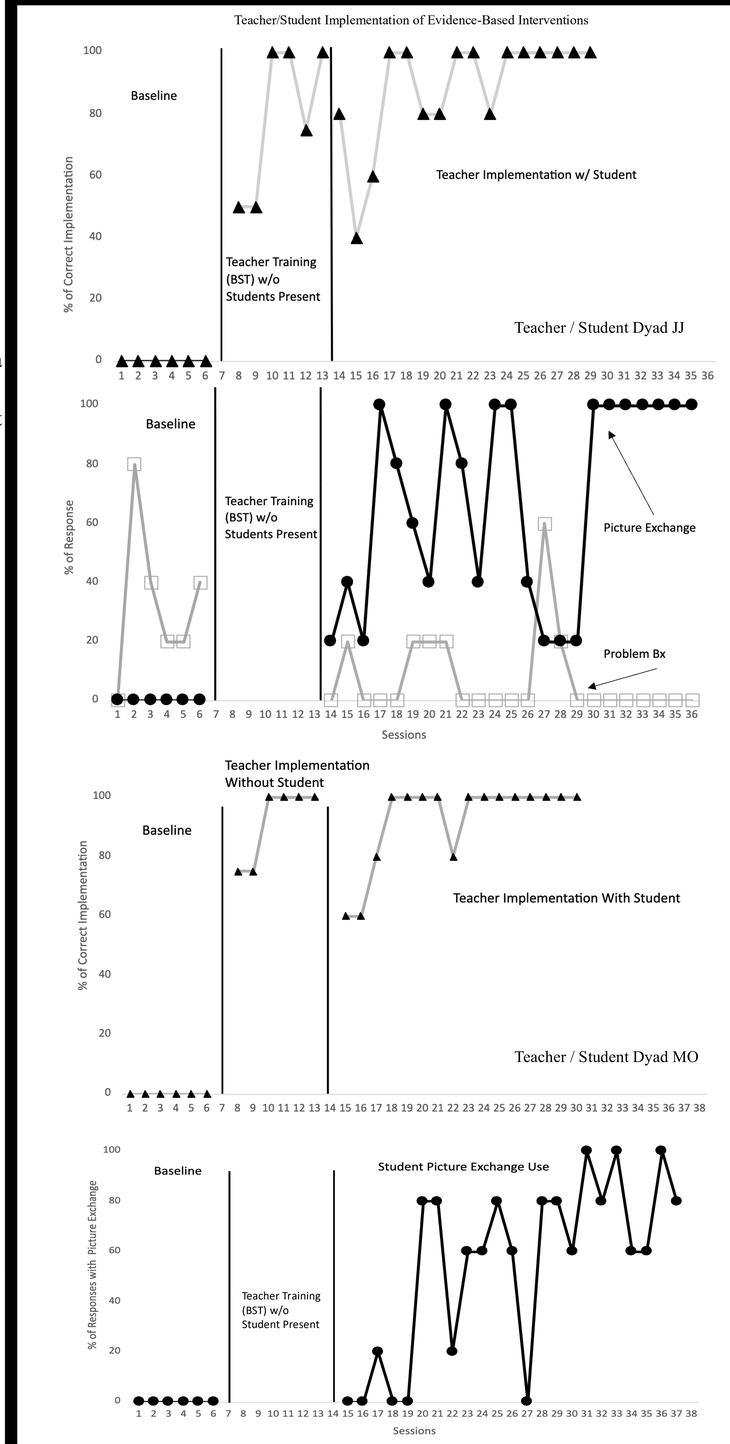
Mastery Criteria. A mastery criterion of 80% accuracy was established for all teacher-implemented strategies.

Baseline. A minimum of five baseline sessions were conducted to assess the teacher's implementation of instructional strategies and the student's use of targeted skills or display of problem behaviors.

Teacher Training. Each teacher received individualized training sessions covering evidence-based interventions based on their identified training needs found during assessment. All interventions were taught using BST and practiced until mastery was met.

Intervention. At the start of each session, the trainer provided instructions and modeling. Teachers then implemented the selected intervention with their student while receiving real-time. coaching and feedback through BIE technology.

This study introduced a feasible real-time virtual Behavior Skills Training for teachers in Nigeria using Bug-in-Ear technology that demonstrated noted change in teacher implementation of evidence-based interventions.



RESULTS

Teachers:

Baseline: Baseline data indicated that teachers demonstrated 0% independent use of evidence-based interventions prior to receiving training.

Teacher Training: On average, teachers independently implemented evidence-based interventions 85% of the time.

Student JJ:

Baseline: JJ engaged in problem behavior ranging from 1 to 4 occurrences per session, with an average of 2 occurrences across five baseline sessions.

Intervention: Following the introduction of Picture Exchange Communication System, JJ demonstrated a 100% reduction in problem behavior across eight consecutive sessions. In seven of those sessions, he independently used Picture Exchange without requiring teacher prompts.

Student MO:

Baseline: MO demonstrated significant difficulty initiating communication. Across six observed sessions, he did not independently make verbal requests during any of the five opportunities provided per session. His responses were limited to yes/no answers when teachers rephrased questions into a choice format.

Intervention: With the introduction of the Picture Exchange, MO showed steady improvement in functional communication. Initially, he engaged with the system only when prompted, often touching picture icons without presenting them. Over time, his reliance on teacher prompts decreased, and he began using PECS more independently. By the end of the intervention, MO averaged 80% independent requests per session across seven consecutive sessions.

Findings suggest that virtual BST is a feasible and effective method for building teacher competency and improving student outcomes in Nigerian autism centers, offering a scalable model that does not require the physical presence of a trainer.

Social Validity. Social validity was assessed at six points: week 2, 5, 8,11, 14 and 17, using a 10-point Likert scale. Teachers rated their confidence in managing challenges commonly encountered when working with students with autism, their confidence independently implementing the intervention and implementing with a trainer

Social Validity Confidence Level	Weeks											
	Week 2		Week 5		Week 8		Week 11		Week 14		Week 17	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Handling autism challenges	9	.82	9.3	.94	10	0	10	0	10	0	9.7	.47
Independent implementation	9.7	.47	9.7	.47	10	0	10	0	10	0	9.7	.47
Implementing with trainer	9.7	.47	9.7	.47	10	0	10	0	10	0	9.7	.47

Note. Teachers means and standard deviations across 6 points in 17 weeks social validity survey

LIMITATIONS AND FUTURE RESEARCH

Client barriers*:* Teacher Collaboration for generalization.

Limitations: Time zone differences, Poor internet connectivity, sending materials internationally, scheduling changes due to center activities.

Future Research: Exploring structured peer-coaching models within virtual BST.

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