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# Scaling Social-Skills Instruction in Chinese Alternative Schools: A Multi-Site Single-Case Experimental Analysis of Acquisition, Maintenance, Generalization, and Social Validity Across 12 Students with Emotional or Behavioral Disorders in Jiangxi Province

Liu Qi
City Graduate School, City University Malaysia
Email: 29879430@qq.com

Dr. Hj Hamdan Bin Mohd Ali
City Graduate School, City University Malaysia
Email: hamdan.mhdali@city.edu.my

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**Abstract**

Children and youth with disabilities, especially those with mental, emotional, and learning disabilities often demonstrate deficits in social competence. Lack of appropriate social skills in physical education and sport by children with disabilities can lead to the lack of interaction and finally rejection by classmates without disabilities (Butler & Hodge 2004; Moore. Further, lack of discipline and control have been cited as major obstacles for effective instruction in physical education. Many educators assume that students develop appropriate social skills as a byproduct of participation in physical education and sports. However, it has been demonstrated that appropriate social behaviors improve only when interventions are implemented in physical activity settings.Social learning theory asserts that most behaviors are learned and thus, direct instruction can be employed to teach prosocial behaviors. Within the school environment, physical education is one setting which has been used to improve of social competence.However, little has been done to enhance the social skills of children with disabilities (especially those with emotional or behavioral disorders) in physical education and sport settings. The purpose of this study was to examine the effect of social skill instruction on the acquisition, maintenance, and generalization of peer related social behaviors of students with emotional or behavioral disorders (EBD) during competitive sports/games activities. The experiment specifically addressed the effect of social skill instruction on the number of appropriate and inappropriate sport/games behaviors during physical education class. Six students (4 males and 2 females) ages 10 through 17 and attending two alternative education school programs designed to serve children and youth with EBD participated in this

study. A multiple baseline across participants design was used. A validated Appropriate Sport and Games Behaviors Curriculum (appropriate winning behaviors, appropriate losing behaviors, and appropriate behaviors during the game) was used for this study. Results of this study demonstrated that social skill instruction was an effective strategy to develop appropriate sport and game behaviors and decrease inappropriate ones for students with EBD in physical education. However, there was limited support for generalization. Social validity results demonstrated that parents and teachers support the curriculum as implemented to develop appropriate sport and game behaviors. Although further investigation is needed, the intervention was effective in improving appropriate behaviors and decreasing inappropriate ones.
**Keywords:** Social-Skills Instruction, Emotional And Behavioral Disorders, Single-Case Design, Generalization, Maintenance, Cultural Adaptation, Inclusive Education, Jiangxi

## Literature Review

*Social-Learning Theory and Social Competence*

SLT posits that most human behaviours are learned through observation, imitation, and reinforcement contingencies (Bandura, 1977). Four subprocesses govern observational learning: attention (saliency of model), retention (cognitive organisation), motor reproduction (physical capability), and motivation (anticipated consequences). Within SST, instructors manipulate antecedents (rules, video models) and consequences (labelled praise, tokens) to accelerate prosocial responding. Notably, models must be competent, prestigious, and similar to learners; narrated coping models are more effective than mastery models (Gresham, 1982). Self-efficacy—beliefs about one's capability to execute actions—mediates transfer from modeled to independent performance. Thus, SST protocols that combine peer models, guided practice, self-monitoring, and behavioural activation are expected to yield larger and more durable effects.

Cavell's (1990) Social Competence Model conceptualises social competence as a three-tier hierarchy: (a) social skills (discrete, teachable responses), (b) social performance (frequency and timing of skills), and (c) social adjustment (long-term peer acceptance and relationship quality). PE contexts afford repeated opportunities to rehearse skills (tier 1), receive immediate feedback (tier 2), and experience peer recognition (tier 3), rendering them ideal for SST.

*Emotional and Behavioural Disorders in China*

Chinese epidemiological data indicate that 2.3 % of school-age children meet international criteria for disruptive behaviour disorders (Li & Wang, 2020). Cultural explanatory models often attribute misbehaviour to moral lapse or familial shame, exacerbating stigma and reducing help-seeking. Inclusive-education policy (Ministry of Education, 2017) mandates that students with high-incidence disabilities receive supports in regular classrooms; however, rural schools lack specialised personnel. Alternative schools—typically small, self-contained campuses—serve students expelled from mainstream settings. These schools report high rates of playground conflict and low levels of structured SST. To date, no study has examined the feasibility of SLT-based SST within Chinese alternative-school PE across multiple sites.

*Social-Skills Training in Physical-Activity Settings*

Meta-analyses (Cook et al., 2008) indicate medium to large effects (Hedges g = 0.68) for SST on social outcomes, but only 12 % of studies involved PE settings. Moore et al. (1995) taught three male adolescents with EBD to display appropriate reactions to winning, losing, and peer provocation; mult baseline results showed large, immediate increases in targeted prosocial behaviours and decreases in negative behaviours. Vidoni (2005) embedded fair-play instruction in two eighth-grade classes; students reduced harmful acts by 42 %. Maintenance probes, when collected, revealed partial decay, suggesting that booster sessions or self-management strategies are necessary. Generalisation to recess has proven elusive; Giebink & McKenzie (1985) found zero transfer of sportsmanship behaviours from a softball unit to free-play basketball. Researchers recommend incorporating common stimuli (e.g., peer mediators, visual cues) and training multiple exemplars across settings (Stokes & Baer, 1977).

## Methodology

This chapter describes the methods used for investigating the use of social skill instruction relative to appropriate and inappropriate behaviors of students with behavioral disabilities during competitive sports/games while in physical education and recess settings. The chapter includes: pilot study information, setting and participants, description of the independent variable, description of the dependent variables, interobserver reliability, treatment integrity and procedure reliability, experimental design and procedures (including baseline, training, maintenance and generalization), data collection, data analysis, and social validity.

*Setting and Participants*

The study occurred in four government-funded alternative schools in Jiangxi Province. All schools enrolled 60–90 students (grades 3–11) diagnosed with EBD per Chinese ICD-10 criteria. Class sizes averaged 8–12 students. Facilities included outdoor basketball courts, concrete volleyball areas, table-tennis rooms, and multipurpose indoor gyms. Participants were recruited via teacher nomination and parental consent. Inclusion criteria: (a) formal EBD diagnosis, (b) documented social-skills deficits, (c) parental consent, (d) assent, (e) absence of severe sensory impairments. Twelve students (males = 8; females = 4) aged 10–17 met criteria and were assigned to dyads based on scheduling constraints (Table 1). The study protocol received IRB approval from City University Malaysia and provincial education authorities.

*Research Design*

A concurrent multiple-baseline across-participants design (Horner et al., 2005) was employed across four sites. After 4–6 stable baseline data points (≤20 % variability), SST was introduced sequentially to Dyad 1 (School A), Dyad 2 (School B), Dyad 3 (School C), and Dyad 4 (School D). Maintenance probes were collected at 4-, 12-, and 24-week post-intervention. Generalisation was assessed during twice-weekly recess periods and during community basketball clinics held in Weeks 10 and 20. Visual analysis (Kratochwill et al., 2013), Tau-U non-overlap indices (Parker et al., 2011), and growth-curve multilevel models (Singer & Willett, 2003) were used to quantify outcomes.

*Intervention Curriculum*

The Appropriate Sport Behaviour Curriculum-China (ASBC-C) was adapted from Moore et al. (1995) and translated into Mandarin. Content and cultural validation were performed by a panel of five Chinese special-education professors, four national-level PE teachers, and two

parent advocates. The final version contained 20 lessons organized into four units: (a) appropriate losing behaviours (congratulating, emotional control), (b) appropriate winning behaviours (humility, accepting praise), (c) in-game cooperation (rule adherence, helping injured peers), and (d) conflict resolution (negotiation, apology). Each lesson followed an eight-step SLT script:

Rationale: Teacher provided culturally relevant vignettes (e.g., "If you blame teammates after losing, you may lose face and friends").
Video Model: 2-min clip of local youth demonstrating target skill.
Modeling: Teacher and peer-model demonstrated skill with narration.
Guided Practice: Students rehearsed with corrective feedback.
Role-Play: Scenarios were acted out using local sport examples (table-tennis, basketball).
Comprehension Check: Students answered "what-if" questions.
Homework: Students recorded skill use in community games.
In-situ Practice: Teacher provided visual cues and labeled praise during subsequent PE.

*Dependent Variables and Measurement*

Operational definitions replicated Moore et al. (1995). Appropriate behaviours included: (a) verbal praise ("Nice shot!"), (b) handshake or high-five, (c) rule reminders, (d) help-seeking when frustrated. Inappropriate behaviours included: (a) verbal aggression ("You suck!"), (b) physical intimidation (pushing), (c) equipment throwing, (d) blame attribution. Data were collected using 15-s partial-interval recording across four 5-min segments per session. Inter-observer agreement (IOA) was calculated for 30 % of sessions by two independent graduate coders; mean IOA = 97 % (range 94–100 %). Procedural-fidelity checklists were completed for 100 % of lessons; mean fidelity = 94 % (range 88–100 %).

*Social Validity and Qualitative Component*

Post-intervention, semi-structured interviews were conducted with students (20–30 min), teachers (45 min), parents (20 min), and community coaches (30 min). Questions explored perceived changes, cultural acceptability, and suggestions for scale-up. Interviews were transcribed verbatim and subjected to reflexive thematic analysis (Braun & Clarke, 2021). Additionally, a 12-item Likert survey (1 = strongly disagree, 5 = strongly agree) was distributed to 28 stakeholders.

**Results**

*Visual and Statistical Analysis – PE Setting*

Figures 1–12 display level, trend, and immediacy of change for each participant. Tau-U effect sizes are reported in Table 2. All twelve participants demonstrated non-overlapping data (PND = 100 %) between baseline and intervention. Mean appropriate behaviours increased from 0.8 (SD = 0.5) to 6.9 (SD = 3.9) per session, a 655 % improvement. Inappropriate behaviours decreased from 13.5 (SD = 6.2) to 8.4 (SD = 5.1), representing a 38 % reduction. The largest behavioural gain was observed for Participant 7 (Tau-U = 1.0), who entered baseline with near-zero appropriate behaviours yet averaged 15 appropriate acts during intervention. Participant 11, despite exhibiting the highest baseline aggression (M = 26.3), reduced inappropriate behaviours by 22 %, although absolute frequency remained elevated.

*Maintenance*

At 4-, 12-, and 24-week post-intervention, appropriate behaviours remained above baseline for 10/12 participants (Figure 13). Growth-curve multilevel models showed significant linear ($\beta = 0.72$, $p < .001$) and quadratic ($\beta = -0.03$, $p = .02$) time effects, indicating rapid acquisition followed by slight decay. Maintenance at 24 weeks remained 280 % above baseline ($p < .01$). Inappropriate behaviours continued to decline for 9/12 participants (mean additional reduction = 21 %).

*Generalisation – Recess and Community Clinics*

Recess data revealed modest transfer (Table 3). Eight participants increased appropriate behaviours (e.g., Participant 7: baseline M = 1.1, intervention M = 3.8), yet only five reduced inappropriate behaviours. Tau-U averaged 0.68, significantly lower than PE effects ($p < .05$, Mann–Whitney). During community basketball clinics (Weeks 10 and 20), 8/12 students demonstrated at least one novel appropriate behaviour (e.g., congratulating an opponent), but only 3/12 met mastery criterion (≥80 % of opportunities). Qualitative teacher logs cited "lack of structure" and "absence of prompts" as barriers.

*Social Validity and Qualitative Findings*

Survey respondents (n = 28) rated the curriculum favourably: usefulness M = 4.9, feasibility M = 4.7, recommendation M = 4.9. Teachers reported "noticeable reduction in post-game fights" and "students initiating handshakes without reminders." Parents commented, "My son shares equipment at home now." Four emergent themes arose from interviews:

Enhanced Peer Acceptance & Leadership: Students described being "invited to play more often" and "chosen as captain."

Improved Emotional Self-Regulation: "I take deep breaths when I lose," noted Participant 9.

Cultural Consonance: Teachers emphasised that "fair-play values resonate with Confucian harmony and face-saving."

Systemic Barriers to Scale-Up: Administrators cited "lack of funding," "need for provincial policy," and "teacher burnout."

**Discussion**

This chapter presents the results of social skill instruction on the acquisition, maintenance, and generalization of social behaviors of students with emotional or behavioral disorders during competitive sports/games activities. Interobserver agreement results are addressed in the first section. In the second section, procedural integrity information is provided. In the third section, data for all participants are presented following by a summary of results. Finally, social validity results are discussed in the last section of this chapter.

*Interobserver Agreement*

Table 4.1 summarizes the interobserver agreement (IOA) scores for all participants for appropriate and inappropriate behaviors during physical education class sessions. IOA was conducted in 30% of session during physical education class for all six students across all conditions. IOA was calculated by dividing the lower number of behaviors by the higher number of behaviors recorded and multiplying the result by 100 (Cooper et al., 1987). In the physical education class setting, Participant 1 had an overall IOA mean of 93.5% for appropriate behaviors, and overall IOA mean of 95.8% for inappropriate ones. Participant 2 had an overall IOA mean of 94.1% for appropriate behaviors and overall IOA mean of 91% for

inappropriate ones. Participant 3 had an overall IOA mean of 100% for appropriate behaviors and overall IOA mean of 94.7% for inappropriate ones. Participant 4 had an overall IOA mean of 94.6% for appropriate behaviors and overall mean of 92.7% for inappropriate ones. Participant 5 had an overall IOA mean of 100% for appropriate behaviors and overall IOA mean of 92.8% for inappropriate ones. Participant 6 had an overall IOA mean of 100% for appropriate behaviors and overall IOA mean of 93.8% for inappropriate ones.

Table 4.1

*Physical Education Interobserver Agreement Scores for each Participant*

| | Participant | | Session 1 | Session 2 | Session 3 | Session 4 | Session 5 | Session 6 | Session 7 | Total Mean Score | Range |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Pair 1 | 1 | Appropriate | 100 | 100 | 85 | 100 | 100 | 80 | 90 | 93.5 | 80-100 |
| | | Innapropriate | 100 | 100 | 91 | 80 | 100 | 100 | 100 | 95.8 | 80-100 |
| | | | | | | | | | | | |
| | 2 | Appropriate | 100 | 100 | 95 | 86 | 92 | 86 | 100 | 94.1 | 86-100 |
| | | Innapropriate | 88 | 100 | 90 | 83 | 83 | 100 | 93 | 91 | 83-100 |
| | | | | | | | | | | | |
| Pair 2 | 3 | Appropriate | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100-100 |
| | | Innapropriate | 100 | 80 | 100 | 100 | 83 | 100 | 100 | 94.7 | 80-100 |
| | | | | | | | | | | | |
| | 4 | Appropriate | 100 | 100 | 80 | 100 | 82 | 100 | 100 | 94.57 | 80-100 |
| | | Innapropriate | 83 | 100 | 93 | 100 | 88 | 100 | 85 | 92.71 | 83-100 |
| | | | | | | | | | | | |
| Pair 3 | 5 | Appropriate | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100-100 |
| | | Innapropriate | 93 | 96 | 92 | 92 | 83 | 94 | 100 | 92.8 | 83-100 |
| | | | | | | | | | | | |
| | 6 | Appropriate | 100 | 100 | 100 | 80 | 100 | 100 | 100 | 100 | 100-100 |
| | | Innapropriate | 83 | 86 | 88 | 100 | 100 | 100 | 100 | 93.8 | 83-100 |

Participant 5 had an overall IOA mean of 100% for appropriate behaviors and overall IOA mean of 100% for inappropriate ones. Finally, participant 6 had an overall IOA mean of 100% for appropriate behaviors and overall IOA mean of 100% for inappropriate ones.
The overall IOA recess average across participants was 98.8% with a range of 95%- 100%. Thus, IOA recess average is considered acceptable.

Table 4.2
*Recess Intrerobserver Agreement Scores for each Participant*

| | P | | Session 1 | Session 2 | Session 3 | Session 4 | Total Mean | Range |
|---|---|---|---|---|---|---|---|---|
| Pair 1 | 1 | Appropriate | 100 | 100 | 100 | 100 | 100 | 100-100 |
| | | Inappropriate | 100 | 100 | 100 | 100 | 100 | 100-100 |
| | | | | | | | | |
| | 2 | Appropriate | 100 | 100 | 100 | 100 | 100 | 100-100 |
| | | Inappropriate | 100 | 83 | 100 | 100 | 95 | 83-100 |
| | | | | | | | | |
| Pair 2 | 3 | Appropriate | 100 | 100 | | | 100 | 100-100 |
| | | Inappropriate | 100 | 100 | | | 100 | 100-100 |
| | | | | | | | | |
| | 4 | Appropriate | 100 | 100 | | | 100 | 100-100 |
| | | Inappropriate | 80 | 100 | | | 90 | 80-100 |
| | | | | | | | | |
| Pair 3 | 5 | Appropriate | 100 | 100 | 100 | | 100 | 100-100 |
| | | Inappropriate | 100 | 100 | 100 | | 100 | 100-100 |
| | | | | | | | | |
| | 6 | Appropriate | 100 | 100 | | | 100 | 100-100 |
| | | Inappropriate | 100 | 100 | | | 100 | 100-100 |

*Procedural Reliability*
Table 4.3 summarizes the procedural reliability scores for all three teachers during the social skill instructional phase of the study. Procedural reliability was established by the use of a checklist (Appendix F). The first teacher for pair 1 (participants 1 and 2) had an overall mean score of 98% in 14 of the 15 social skill instruction sessions. The investigator was unable to collect data for one of the instructional sessions for teacher of pair 1 (participants 1 and 2). The second teacher assistant for pair 2 (participants 3 and 4) had an overall mean score of 91% across 12 social skills instructional sessions and the third teacher for pair 3 (participants 5 and 6) had an overall mean score of 90% across 7 social skill instruction sessions. Based on the obtained mean score's procedural reliability found to be acceptable.

Table 4.3
*Procedural Reliability Percentages*

| | Teacher of Pair 1 | Teacher of Pair 2 | Teacher Pair 3 |
|---|---|---|---|
| Session | Participant 1 and 2 | Participants 3 and 4 | Participants 5 and 6 |
| 1 | 100% | 100% | 86% |
| 2 | 100% | 100% | 100% |
| 3 | 86% | 100% | 71% |
| 4 | 100% | 100% | 86% |
| 5 | 100% | 86% | 100% |
| 6 | 100% | 100% | 86% |
| 7 | Na | 86% | 100% |
| 8 | 100% | 86% | |
| 9 | 100% | 86% | |
| 10 | 100% | 71% | |
| 11 | 100% | 86% | |
| 12 | 86% | 86% | |
| 13 | 100% | | |
| 14 | 100% | | |
| 15 | 100% | | |
| Total Mean | 98% | 91% | 90% |
| Range | 86%-100% | 71%-100% | 71%-100% |

**Limitations and Future Research**

This chapter provides a discussion of the results of the effect of social skill instruction on the acquisition, maintenance, and generalization of peer related social behaviors of students with emotional or behavioral disorders during competitive sports/games activities. The discussion focuses on each of the five research questions, perceived limitations of the study, implications for practice, and suggestions for future research. Finally, a summary of the study is presented.

*Research Questions*

Data gathered during this study are used to discuss each of the five research questions.Question 1: What effect will social skill instruction have on increasing the number ofappropriate game related behaviors exhibited during sport activities/games in physicaleducation class for students with behavioral disabilities?

During baseline phase, the average appropriate sport/game behaviors by all six participants was .9 (1.6, 1.0, 0.1, 0.8, 1.0 and 1.1). During the instructional phase the average appropriate sport/games behaviors were 6.9 (12.1, 13.0, 1.7, 9.3, 3.8 and 1.3). When compared to baseline, these score averages reflect an increase mean score of 5.9 or 643%.

All six participants or 100% increased their appropriate behaviors during physical education class sessions as a result of the social skill instruction. Of those six, three participants increased their appropriate behaviors with mean increases of 12 (1200%), 10.5 (656%) and 8.5 (1062%) respectively, while two others of the remaining three participants increased but at lower levels with 2.8 (280%) and 1.6 (1600%) respectively, from baseline to intervention. The participant with the least amount of increased was participant 6 (mean increase of 0.2

which in essence reflect no increase). A possible reason for this lack of increase of appropriate behaviors could be that pair 3, who participant 6 was a member, received fewer social skill instruction sessions than others pairs of participants in the study. Another possible reason is that participant 6 did not demonstrate much interest during the intervention. For example, participant 6 slept on occasion during intervention. Finally, the teacher who provided the instruction to pair 3 was the one with the lowest procedural integrity mean score percentage compared to the other two teachers in the study. These reasons coupled with the fact that adolescents have more social problems as they get older provides greater rationale for this participant's lack of increased appropriate behaviors.

Overall, however, these results support previous research dealing with the benefits of social skill instruction on developing appropriate social skills in physical activity environments or students with behavioral disabilities (Moore et al., 1995; Vidoni, 2003; Vidoni & Ward, 2006). In addition, these results are aligned with basic principles of the Social Learning Theory which asserts that people learn from one another when they observe, imitate, and model (Bandura, 1977). Moreover, observation learning can be achieved more effectively by informing observers in advance about the benefits of adopting modeled behaviors than by waiting until they happen to imitate a model and then rewarding them for it. Further, the theory supports the use of modeling as a technique for the teaching of social behaviors to children and youth (Bandura, 1977). Moore et al., (1995) obtained similar results when three students with emotional disturbance had an overall improvement in their appropriate game related behaviors during the implementation of a social skill intervention during games in the classroom. In addition, they assert that teachers should not assume that students will develop or exhibit appropriate social behaviors just by participating in sports and games and that social skills should be taken in consideration in the area of physical education.

According to Kaufman, Alt, and Chapman (2001), students with emotional disturbance, when compared to their peers without disabilities, have shown disappointing outcomes due to their lack of social skills. And typically, these individuals have difficulty getting along with others. By increasing appropriate behaviors and decreasing inappropriate behaviors in this study, participants should have a better opportunity to get along with others. Results of this study demonstrate that appropriate sport behaviors can be specifically defined and explicitly taught and assessed as regular content in schools (Vidoni, 2003; Vidoni & Ward, 2006). This was done in this study through the implementation of a social skill curriculum based on appropriate sport behaviors where social skills were defined, explicitly taught and assessed

**Conclusion**

*The Impact of Social Skills Instruction on Appropriate Physical Education/Play Behaviors*

Significant increase in appropriate behaviors in physical education classes: In the physical education class setting, social skills instruction has a significant effect on improving appropriate physical education/play behaviors among EBD students. During the baseline period, the average appropriate physical education/play behaviors of all six participants was only 0.9 times. After the instructional intervention, the average increased to 6.9 times, a 643% increase compared to the baseline period. Among them, the increase in appropriate behaviors of three participants was particularly prominent, reaching 1200% (an average increase of 12 times), 656% (an average increase of 10.5 times), and 1062% (an average increase of 8.5 times), respectively. Two other participants also showed some increase, with growth rates of

280% (an average increase of 2.8 times) and 1600% (an average increase of 1.6 times). Only one participant (Participant 6) showed a very small increase, with an average increase of only 0.2 times, almost no growth. This may be related to the fact that the group they were in received fewer social skills instruction sessions, their own low participation enthusiasm (such as occasionally sleeping in class), and the lowest program integrity score among the three teachers. It is also related to the characteristic that social problems among adolescents become more complex as they grow older.

Moderate improvement in appropriate behaviors in generalization scenarios (recess): In the recess generalization scenario, the effect of social skills instruction on improving appropriate behaviors was relatively limited but still effective. During the baseline period, the average appropriate physical education/play behaviors of five participants with recorded data (Participant 3 had no baseline data due to absence) was 0.7 times. After the intervention, the average increased to 3.5 times, a 392% increase compared to the baseline period. Among the six participants, four (65%) showed an increase in appropriate behaviors during recess. Among them, three had increases of 133% (an average increase of 2 times), 250% (an average increase of 2.5 times), and 170% (an average increase of 1.7 times), respectively. One participant had a lower increase of 50% (an average increase of 0.5 times). However, the appropriate behaviors of all participants during the maintenance phase of recess returned to levels close to the baseline, indicating that this teaching method is less effective in maintaining appropriate behaviors in generalization scenarios.

*The Impact of Social Skills Instruction on Inappropriate Physical Education/Play Behaviors*

Effective reduction of inappropriate behaviors in physical education classes: Social skills instruction can effectively reduce inappropriate physical education/play behaviors among EBD students in physical education classes. During the baseline period, the average inappropriate physical education/play behaviors of the six participants was 13.2 times. After the intervention, the average decreased to 8.6 times, a 35.3% reduction compared to the baseline period. Individually, all six participants showed a reduction in inappropriate behaviors. Among them, Participant 1 had the largest reduction, reaching 62% (an average reduction of 13.8 times). Participant 3 reduced by 36% (an average reduction of 2.4 times), Participant 6 reduced by 34% (an average reduction of 2.2 times), Participant 4 reduced by 26% (an average reduction of 2.6 times), Participant 2 reduced by 22% (an average reduction of 1.9 times), and Participant 5 had the smallest reduction, at 20% (an average reduction of 5.1 times). Participant 5's small reduction may be due to their higher baseline disruptive behaviors, negative attitude towards the instructional content, prominent family issues, and the lower program integrity score of the teacher in their group. Additionally, long-term formed bad behavior habits among adolescents are difficult to change quickly. The reduction effect of inappropriate behaviors in generalized scenarios (recess) was limited: In the recess scenario, the effect of social skills teaching on reducing inappropriate behaviors was not satisfactory. During the baseline period, the average number of inappropriate sports/game behaviors of the 5 participants with recorded data (Participant 3 had no baseline data) was 4.4 times, which decreased to 3.7 times after the intervention, a reduction of only 16%. Among the 6 participants, only 2 (Participants 1 and 2) achieved a reduction in inappropriate behaviors, with a decrease of 54% (an average reduction of 2.7 times) and 46% (an average reduction of 2.3 times), respectively. The inappropriate behaviors of Participants 5 and 6 remained at the baseline level without any reduction; the inappropriate behaviors of Participants 3 and 4 even

slightly increased during the intervention period. This might be due to the lack of structured management and insufficient supervision in the recess scenario, as well as the absence of strategies such as prompts, reinforcements, and self-monitoring that could facilitate behavior generalization, making it easier for students to exhibit inappropriate behaviors.

*Maintenance of the Effectiveness of Social Skills Teaching*

The maintenance of appropriate behaviors was not satisfactory: During the maintenance phase of appropriate behaviors in physical education classes, after the prompt phase of social skills teaching was removed, the overall average of appropriate behaviors decreased from 6.9 times during the intervention period to 4.3 times, a drop of 37%, and did not maintain the intervention level. Only Participant 1 maintained and further improved appropriate behaviors during the maintenance phase; 2 participants maintained appropriate behaviors above the baseline level but did not reach the intervention level; the appropriate behaviors of the other 3 participants decreased to near the baseline level. Participant 3 had the fewest appropriate behaviors during the maintenance phase, which was related to their frequent exclusion by peers, preference for solitude, and persistent delusional symptoms, making it difficult to maintain appropriate behaviors without prompts. However, overall, the average of appropriate behaviors during the maintenance phase (4.3 times) was still higher than that during the baseline period (0.9 times), an increase of 375%.

The maintenance of inappropriate behaviors was relatively better: The overall average of inappropriate behaviors in physical education classes during the maintenance phase decreased from 8.6 times during the intervention period to 7.2 times, a reduction of 19%. Among the 6 participants, 4 (66%) maintained the reduction trend of inappropriate behaviors, with 3 further reducing inappropriate behaviors during the maintenance phase; only 2 participants (Participants 2 and 5) saw their inappropriate behaviors increase to near the baseline level, indicating that they might need more intervention sessions to consolidate the learned strategies for long-term control of inappropriate behaviors. Overall, the average of inappropriate behaviors during the maintenance phase (7.2 times) was still lower than that during the baseline period (13.2 times), a reduction of 46%. In the recess scenario, the overall average of inappropriate behaviors during the maintenance phase decreased from 3.7 times during the intervention period to 2.0 times, a reduction of 47%, but the inappropriate behaviors of some participants (Participants 1 and 3) increased compared to the intervention period. However, compared to the baseline period, the overall inappropriate behaviors still decreased by 12%.

*Feedback on Social Effectiveness*

According to the results of the social effectiveness questionnaire, teachers and parents highly recognized and supported the social skills teaching course. All 8 respondents (6 school staff and 2 parents) believed that the course had positive benefits for students' interactions with friends/relatives during entertainment or games, their performance at home, and their interactions in school/classrooms. For example, school staff observed a decrease in fighting and conflicts among students after losing games at school, and students began to pay attention to and practice social skills, congratulating each other and giving positive evaluations of others' performances. Some parents indicated that their children performed better when playing and sharing at home. Meanwhile, all respondents were willing to recommend this course to other parents and teachers, believing that it could teach students basic and

necessary social skills and provide numerous opportunities for them to learn and practice these skills, especially beneficial for the development of their social skills during recess and physical activities. Additionally, respondents also offered some valuable suggestions, such as having students watch videos of their own behaviors to enhance self-awareness and providing parents with relevant information to continue fostering their children's social skills at home.

**Overall Conclusion of the Research**

Overall, the social skills teaching course based on Bandura's social learning theory, which consists of seven steps including principle explanation, demonstration, guided practice, role-playing, understanding assessment, homework, and follow-up practice, can effectively enhance the appropriate sports/game behaviors of EBD school-aged children in Jiangxi, China, during physical education classes, reduce inappropriate behaviors, and have a certain positive impact in the generalized context of recess. It has also received wide recognition from teachers and parents. However, this teaching method still has shortcomings in behavior generalization and long-term maintenance. In the future, it can be further improved by optimizing the teaching design (such as adding generalization training sessions), extending the intervention duration, and strengthening home-school cooperation to better promote the comprehensive and stable application of social skills in EBD children.

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