SENSE Theatre® to Enhance Social Competence in Autism

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What has theatre taught you about autism?
Theatre is the artistic expression of social communication, the foundation of shared social experience and live narrative.
Acting engages us in new ways of thinking, interacting, and believing. Theatre forces us to take on different perspectives, thoughts, feelings and behaviors.
Theatre may be an ideal setting and approach for teaching fundamental skills to people with autism.
Autism Spectrum Disorder (ASD) and Theatre

**Disability/Challenges**
- Theory of Mind
- Face Memory
- Social Interaction
- Communication

**Theatrical Techniques**
- Improvisation
- Role-Playing
- Theatre Games
- Scripting, Character Development
SENSE Theatre® is a unique intervention research program designed to improve the social and emotional functioning of children with autism and related neurodevelopmental disorders.
Theatre has taught me that people with autism can engage in more reciprocal communication through peers, play and performance.
SENSE Theatre® is based on Peers, Play and Performance

- **Peers**: peer-mediated by typically developing (TD) actors. Peers are the target and the interventionist.

- **Play**: important for development, facilitates motivation to participate.

- **Performance**: active, performance-based social skills program.
Behavioral Techniques: Implemented by trained typically developing (TD) peers and counselors.

- Shaping
- Natural reinforcers
- Extinction
- Prompting
- Live and video peer modeling
Theatre Techniques: Implemented by TD actors - “expert models”

- Theatre Games
- Improvisation
- Role-Playing
- Scripting
- Singing
- Choreography
- Character work
- Performing a play with music
Corbett et al., (2011)
SENSE Theatre 501(c)(3)

Corbett et al., (2014)
Martin-McCoy-Jesperson
Discovery Grant

Corbett et al., (2016)
NIMH MH097793
Improvement in Social Competence Using a Randomized Trial of a Theatre Intervention for Children with Autism Spectrum Disorder

Blythe A. Corbett¹,²,³, Alexandra P. Key²,⁴, Lydia Qualls¹, Stephanie Fecteu¹,⁵, Cassandra Newsom¹,²,⁵, Catherine Coke⁶, Paul Yoder²,⁷

- Randomized Control Trial
- Participants: N = 30
  - Experimental N = 17
  - Waitlist control N = 13
- 10 Saturdays, 4 hours each
- Children with ASD 8-14 yr.
- Peers 1:1 pairing
- Funded by NIMH
Measuring Social Competence
Kennedy & Adolphs model (2012)

- Brain structures and their networks serving social processes
- Cognitive processes necessary for social ability
- Broader, long-term ability to interact with others
- Observable Interactions with others
Measuring Social Competence in ASD
Kennedy & Adolphs model (2012)

Face Memory
- Brain structures and their networks serving social processes

Theory of Mind
- Cognitive processes necessary for social ability

Communication
- Broader, long-term ability to interact with others

Social Functioning
- Observable Interactions with others

Social Brain

Social Behavior
- Play with Peers
Social Cognition: Memory for Faces

F(2,28) = 6.01, p = 0.02, -.98
Behavior: Peer Interaction Paradigm

Group Play $F(2,28), 4.35, p = 0.04, d = .77$
Functioning: SRS Social Communication

F(2,28) 5.37, p = 0.03, d = -.86
ERP: Incidental Memory task

- 50 novel faces
- 50 novel houses
- One of each randomly selected to be repeated
IMF in TD and ASD (Key & Corbett, 2014)
Social Brain: Incidental Face Memory

![Graphs showing ASD Tx: Pre-Treatment and ASD WLCnt: Pre-Treatment with red and blue lines representing Face_repeated and Face_single, respectively. The figure indicates a value of d = .93.](image)
Social Brain: Incidental Face Memory

d = .93
# Autism Spectrum Disorder (ASD) and Theatre

<table>
<thead>
<tr>
<th>Disability</th>
<th>Ability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theory of Mind</td>
<td>Attribute mental states to others</td>
</tr>
<tr>
<td>Face Memory</td>
<td>Remember people’s faces</td>
</tr>
<tr>
<td>Social Interaction</td>
<td>Group Play with peers</td>
</tr>
<tr>
<td>Communication</td>
<td>Communicate with others</td>
</tr>
</tbody>
</table>
What has theatre taught us about autism?

The supportive context, active role-playing, and dynamic learning environment of the theatre, fosters the development of key social skills that children with autism most need to learn.
National Institute of Mental Health

University School of Nashville

http://vkmc.vanderbilt.edu/vkc/

http://kc.vanderbilt.edu/senselab/
Thank you!

www.sensetheatre.com
What can theatre teach us about the autism spectrum?
People on the spectrum...

...Can connect

...Have empathy

...Are creative
What aspects of theatre drive specific outcomes?
Reading and Expressing Nonverbal Cues

facial expression
body language
vocal tone/prosody

Social Perception
Social Skills

- Social Perception
- Conflict resolution
- Reciprocal communication
- Theory of Mind and Empathy
SCIP Social Competence Intervention Program

(Research Press, Guli, Wilkinson & Semrud-Clikeman, 2008)
SCIP Content

Creative Drama Games
Process Dramas/Improvisations
Discussion
Video Modeling

Process Drama Example: “Detective Agency”
SCIP in action
--Treatment and control group observed before and after intervention in unstructured play and social time at school

--Treatment group significantly increased more positive interactions with peers and decreased more solitary behaviors than clinical control group

--Results emphasize importance of perception targeted, process based interventions to generalize social skills
Positive Participant Responses

“I noticed his face shows more expression.”

“Now I know a lot about feelings and can talk to my friends more easily.”

“I have noticed her showing more empathy toward her sister.”

“I can understand what they’re saying with body language a little clearer.”

“He seems to have improved in being able to think about what the other person may be feeling.”

“I learned that I could handle myself a lot better than I thought I could!”
“The language of the body is the key that can unlock the soul”

-Constantin Stanislavski
What has theater taught me about ASD?

Matthew D. Lerner, Ph.D.
Assistant Professor of Psychology, Psychiatry, & Pediatrics

Director, Social Competence & Treatment Lab
Department of Psychology
Stony Brook University

Kennedy Center Webinar
(Koenig, De Los Reyes, Cicchetti, Scahill, & Klin, 2009; Reichow & Volkmar, 2009)
<table>
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<tr>
<th>Steps</th>
<th>Trainer Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Watch the other person.</td>
<td>Notice tone of voice, posture, and facial expressions.</td>
</tr>
</tbody>
</table>
Knowledge

Didactics  Modeling  Role Play

“Outside-in approach”

Skills

(Goldstein & McGinnis, 1997)
(Koenig, De Los Reyes, Cicchetti, Scahill, & Klin, 2009; Reichow & Volkmar, 2009)
Performance

Targeted Activities → Practice → Social Reinforcement

“Inside-out” approach

Skills

(Lerner & Levine, 2007; McMahon, et al., 2013; Lerner et al., 2014a & b; Mendelson et al., 2016)
Current Evidence

• Community-based Studies
• Randomized Controlled Trials
• Testing Mechanisms
Socio-Dramatic Affective Relational Intervention

(Lerner & Levine, 2007)
Generalized & Maintained Effects

SDARI vs. Treatment as Usual

DANVA - Adult Voices

\( \beta_{11} = -0.63, \quad p < 0.05 \)

\( R^2 = 0.34 \)

(Lerner, Mikami, & Levine, 2011)
Replicated Effects

\( \beta_{11} = -0.496, \quad p < 0.05 \)

(Lerner, Spies, Jordan, & Mikami, 2009)
Randomized Controlled Trials

- SDARI

- Second Step (Committee for Children, 1992)

- 30 minutes/day, daily sessions, 20 days

(Lerner & Klein, 2011)
Relative Improvements Via “Blinded” Teachers

\[ \beta = -0.279, \quad p < 0.001 \]

(Lerner & Klein, 2011)
Randomized Controlled Trial 2

- SDARI
- Skillstreaming *(Goldstein & McGinnis, 1997)*
- 4 90-minute after-school sessions

*(Lerner & Mikami, 2012)*
Both Led to Friendships...

Friendship Effects

Reciprocated Friendship Nominations

\[ F(1, 11) = 4.93, \quad p < .05 \]

(Lerner & Mikami, 2012)
Social Preference Effects

SDARI = *Faster*

$L_{\text{SDARI}} = F(L_{\text{Lerner}} \& M_{\text{Mikami}}, 2012)$

\[ F(1, 11) = 24.44, \quad p < .001 \]

(Lerner & Mikami, 2012)
Community-Based Study

*Insight* Predicts SDARI Effects

\[ \beta_{11} = -0.743, \quad p < 0.05 \]

(Lerner, Spies, Jordan, & Mikami, 2009; Lerner, Calhoun et al., 2012)
So, We Now Know That...

• Both Knowledge & Performance-based interventions can help

• Seem to work differently
  – Generalization & maintenance
  – Different outcomes
  – Speed of effects

• But... can we learn what works best for whom??
  – Lab
  – Real-world
Lab-Based Studies!
Some New Info From the Lab...

• High knowledge
  – May get in the way of positive interaction: in more structured condition

• Social creativity
  – More is “better” in performance-training

• Self-awareness/insight
  – May affect response to performance-training

• SDARI-specific findings
  • Improvements in sociometrics
  • Accelerated social ERPs

• MAY BE ABLE TO “MATCH” KIDS TO INTERVENTION-TYPE!
So what have I learned?

- Structured ≠ rote
- Humor!
- We must be the flexible ones
- Special interests are a source of connection
- Implicit social learning
What now?
“You really like to bring people’s miracles to life. You lift people’s hearts to the sky.” – Spotlight Participant
Thank You

– The Medical Foundation
– Brian Wright Memorial Fund
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– Maryhaven Center of Hope
– Buffett Foundation
– Nancy Lurie Marks Foundation
– Simons Foundation (#381283)
– American Academy of Arts & Sciences
– NARSAD #24890
– American Psychological Association
– American Psychological Foundation
– Association for Psychological Science
– Stony Brook Psychiatry
– International Society for Autism Research
– Alan Alda Fund for Communication Arts Connection
– NIMH #1R01MH110585
THANK YOU!

Collaborators
Stony Brook Autism Center, AHANY, Spotlight, SPIRE, Spectrum Services, Spectrum School, Quad Prep
• UVA, Rush, Drexel, Yale, U. Washington, Adelphi, St. John’s, NYU, SDSU, Pace, Temple, Michigan State
• Graduate students, lab staff & volunteers, & undergrad RAs!

www.LernerLab.com
How Do Findings on Theater Interventions and Autism Impact Classroom Practice?

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Kennedy Center for the Performing Arts
November 29, 2016
Teaching Students with Autism: What Teaching Theater Teaches Us

• SENSE Theater lab (Corbett): Theater techniques and behavioral approaches
• SCIP (Guli): Creative drama and nonverbal social cues
• Spotlight Program (Lerner): Theater and social competence

• My job: To consider how these findings impact classroom practice
Teaching Students with Autism: What Teaching Theater Teaches Us

- **Teaching students (with and without autism)**
- **Teaching teachers**
- **Teaching community and society**

Bronfenbrenner’s actual representation of his Ecological Theory

Teaching Students with Autism

• Focus of intervention
• Individualized (social-emotional, cognitive, language outcomes)
• Sequenced and scaffolded
Teaching Students without Autism

• Intervention targets
• Interventionists/agents
• Perspective-taking
• Social-emotional, cognitive, language outcomes
Teaching ALL Students (with and without autism)

Social-communication outcomes (receptive/expressive)
- Eye-contact, gesture, prosody, inflection
- Recognition/interpretation of faces
- Perspective taking/TOM

Collaboration and critical thinking
- Positioning of oneself in critical discourse (reasoning skills)
- Beliefs/systems of acceptance, belonging
- Position within self, family, school, community, and society

“I was better able to understand what I was reading on my own, and I learned that the father had a difficult life.”
Teaching Teachers and Schools

Social-communication outcomes
• Nonverbal communication (gesture, prosody, facial expression, body position)
• Perspective taking (critical discourse, thinking, reasoning)
• Collaborative skills (sharing, turn-taking, active listening, cooperation)

Intervention context
• Peer modeling and feedback
• Environmental modifications
• Pacing
• Grouping

Individualized and shared objectives
• Social-emotional
• Linguistic
• Cognitive
Teaching Community and Society

- Promotes **acceptance, belonging, and inclusion**
- **Challenges assumptions** about the nature of students’ weaknesses
- Makes room at the table for **all students to participate & progress**
- Provides **vehicle for learning** across students with and without autism, who can experience equally beneficial **gains across key developmental areas**
  - Language
  - Cognition
  - Social-emotional

“I really like this project, and I never thought it was bad. Every time you asked us to read, I did.”
Theater Intervention Contexts

• Theater games
• Theater/production
• Improvisation
• Weekend/afterschool programs
• Evidence-based behavioral approaches integrated within theater contexts
Applications in Inclusive Classroom Settings

Drama-based pedagogies (Anderson, Lee, & Brown, in press; Lee et al., 2015)

Dramatic arts integration (Anderson, 2012; Clyde, 2003; Cornett, 2006; de la Cruz, 1995)

- **Process drama** (in-role speaking, writing; Anderson, 2012; Anderson & Krakaur, 2010)
- **Tableau** (Anderson & Berry, 2014, 2015; Berry, 2015)
- **Improvisation**
- **Theater games**

“I hear you crying at night.”

“It wasn’t your fault. It was an accident.”
Where Do We Go From Here?

• Research on **classroom applications** of drama-based pedagogies, dramatic arts integration, and theater intervention programs
  • **Outcomes** for students with and without autism
  • **Efficacy** of interventions
  • **Feasibility** of interventions
  • Classroom **contexts** (inclusive, self-contained, therapeutic)
“Tell me and I forget. Teach me and I remember. Involve me and I learn.”

Thank You!

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Questions