

BRIDGINGAPPS

Using Assistive Technology to Improve Social Cognition in
ASD Teens: Case Studies from Group Respite Care

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every 20 minutes, another child is diagnosed with

THE CDC ESTIMATES THAT 1 IN 68 CHILDREN
HAS BEEN IDENTIFIED WITH AUTISM
(2010), AND 1 IN 6 HAS A
DEVELOPMENTAL DISABILITY (2008)


AUTISM



THESE CHILDREN ARE AT RISK FOR
COMMUNICATION CHALLENGES

challenges that can lead to educational and social

ISOLATION



for many children, it's not a lack of intelligence or ability, but a lack of awareness, education, and access to the tools needed that will

LIMIT THEIR FUTURES

BRIDGING APPS IS A TOOL THAT HELPS USERS REACH THEIR FULLEST POTENTIAL

low cost, touch-based mobile technologies have the ability to help
these children



by providing educational and therapeutic tools

ANYWHERE, ANYTIME

**GROUP RESPITE BEING AN IDEAL,
REPEATABLE OPPORTUNITY TO SHARE
BRIDGINGAPPS**



TOPICS FOR DISCUSSION

- HOW DO WE IDENTIFY SOCIAL DEFICITS IN ASD TEENS?
- WHAT IS BRIDGINGAPPS/PNO?
- THE STUDY: I-LAUGH CRITERIA
- APPLYING THE RESULTS TO OTHER RESPITE LOCATIONS

IDENTIFYING SOCIAL DEFICITS IN ASD TEENS

- SOCIAL SKILLS ARE A BEHAVIORAL MANIFESTATION OF SOCIAL COGNITION (MINSHEW AND GOLDSTEIN, 2000)
- BARON-COHEN (2001), THEORY OF MIND (TOM)
- THIS INABILITY TO UNDERSTAND OTHERS' PERSPECTIVES OFTEN LEADS PERSONS WITH ASD TO MISINTERPRET MESSAGES (WINNER, 2002)
- PARENTS, EDUCATORS AND THERAPISTS HAVE LONG SOUGHT TO CLOSE THIS SOCIAL GAP



STANDARD ASD THERAPIES

- COGNITIVE BEHAVIORAL THERAPY
 - ROLE PLAYING
 - SPEECH THERAPY
- FORMALIZED SKILLS TRAINING

TRADITIONAL THERAPIES: EXPENSIVE, TIME CONSUMING
AND SOMETIMES UNAVAILABLE

ITHERAPY FOR ASD TEENS

“ITHERAPY USES DEVICES LIKE THE IPAD, IPOD TOUCH, IPHONE AND ANDROID DEVICES IN CONJUNCTION WITH AN ‘APP’ (COMPUTER APPLICATION) IN A THERAPY ENVIRONMENT TO IMPROVE A VARIETY OF SKILL-BASED DEFICITS (SPEECH, COGNITIVE, SOCIAL, ETC)”



BENEFITS OF I THERAPY

- AFFORDABLE: DEVICES AND ACCESSORIES DRIVEN TOWARDS PUBLIC. MANY APPS ARE FREE.
- NON-OBTRUSIVE: I-TECHNOLOGY LESS STIGMATIC THAN DURABLE MEDICAL EQUIPMENT
- ACCESSIBILITY: DEVICES ARE LIGHTWEIGHT . TOUCH-SCREEN INTERFACE EASY TO USE.
- MOBILITY: LONG BATTERY LIFE, EXTREMELY PORTABLE.
- GAME BASED LEARNING (GBL)

BENEFITS OF I THERAPY

IT IS FUN!!!

**USERS ARE MORE LIKELY TO BE
INVOLVED IN LEARNING IF THEY ARE
ENGAGED AND ENJOYING THE
PROCESS**

BRIDINGAPPS

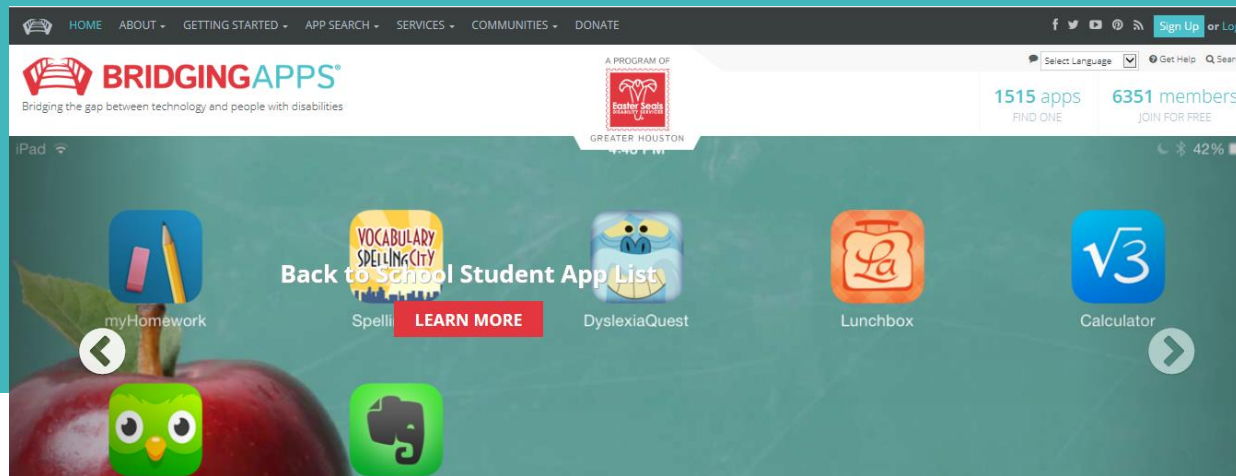
-A COMMUNITY OF USERS (CAREGIVERS, THERAPISTS, TEACHERS, PERSONS LIVING WITH A DISABILITY)

-TECHNOLOGY: IPADS, IPHONES, IPODS AND OTHER MOBILE DEVICES

-AT LABS: EVALUATIONS, TRAINING AND ADVICE

-OPEN HOUSES

-APPS/APP SEARCH TOOL



We believe that it is more important to focus on the person who will be using the technology, rather than the device itself.



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Most

SEARCH

Keywords

+ Skill Lev

+ Mobile D

+ Embedd

+ Indepen

+ Assistive

+ Assistive

+ iTunes C

+ Android

+ Bridging

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MEMORIAL



Independent Traits

- ☐ Memory
- ☐ Money Skills
- ☐ number identification
- ☐ Nutrition
- ☐ Organization
- ☐ Preschool Games
- ☐ Preschool Games
- ☐ Problem Solving
- ☐ Reading and Phonics
- ☐ School-age Games
- ☐ School-age Games
- ☐ Science
- ☐ Self Help
- ☒ Social Skills
- ☐ Social Studies
- ☐ switch game
- ☐ Telling Time
- ☐ Visual Perceptual Skills
- ☐ Written expression

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EASTER SEALS PARENT NIGHT OUT (PNO)

What is Katy PNO?

Respite: short period of rest or relief from something difficult.
Easter Seals provides respite services in the form of Parent Night Out (PNO), Family Day Out (FDO) and in-home care.

PNO offers parents an evening-out, while clients are able to socialize in a safe, fun environment with their peers. PNO provides crafts, games, and more!

Locations:

Bellaire: 6:30 to 10:30 p.m. for clients ages 6-24 and siblings ages 6-10

Katy: 6 to 9 p.m. for clients ages 12-21

PNO Respite Process

Potential clients complete an application

Client's application is reviewed and they are assigned to one of two PNO locations, based on individual needs

Client's parents receive welcome letter and instructions

Clients RSVP attendance

Program fee is \$20/evening for clients and \$10 for siblings



THE STUDY: TO EVALUATE THE EFFICACY OF USING THE BRIDGINGAPPS TECHNOLOGY TO IMPROVE SOCIAL COGNITION WITH ASD TEENS

- BRIDGING APPS WAS IMPLEMENTED AT PARENT NIGHT OUT (PNO) EVERY WEEK, FOR A PERIOD OF 6 WEEKS
- TEENS WERE GIVEN THE OPPORTUNITY TO EXPLORE VARIOUS APPS IN TEAMS OF TWO OR MORE
- GROUP APPS (EXPRESSION ARCADE , ATTAINMENT'S COMMUNITY SUCCESS) WERE ALSO USED
- MOST APPS INVOLVED ROLE-PLAYING AND DECISION MAKING IN SOCIAL CONTEXTS
- SKILLS SUCH AS VERBAL ARTICULATION, MAKING EYE CONTACT, WORKING WITH OTHERS, APPROPRIATE EXPRESSION OF FEELINGS, ETC. WERE EMPHASIZED IN THIS PROGRAM

THE STUDY: EVALUATING SOCIAL COGNITION

- CHOOSING APPROPRIATE EVALUATION INSTRUMENT CAN BE DIFFICULT
- TEST OF PRAGMATIC LANGUAGE (TOPL) IS A STANDARDIZED ASSESSMENT OFTEN USED IN EVALUATING LANGUAGE SKILLS IN AUTISTIC PERSONS
- TOPL EXPLORES MORE SUPERFICIAL KNOWLEDGE (VOCABULARY) RATHER THAN THE MORE COMPLEX VARIABLES USED IN SPONTANEOUS DISCOURSE (GESTURES, EYE CONTACT, ETC)
- THIS TEST IS EASILY PASSED BY HIGHER-LEVEL STUDENTS WITH ASD AND ASPERGER'S, WHO IN REALITY, STILL HAVE DIFFICULTY COMMUNICATING WITH THEIR PEERS

THE STUDY: I-LAUGH CRITERIA

- MOST VALID ASSESSMENT OF SOCIAL SKILLS COMES FROM THE MORE FUNCTIONAL AND INTRICATE COMPONENTS OF HUMAN RELATEDNESS, RATHER THAN FORMALIZED TESTING (WINNER, 2010)
- MULTI-FACETED TOOL CALLED I-LAUGH CRITERIA
- PULLS INFORMATION FROM A VARIETY OF SOURCES AND CONTEXTS
- OBSERVATION BASED THAT CAPTURES VALUABLE SOCIAL INTRICACIES SUCH AS BODY LANGUAGE, PROXIMITY, TONE OF VOICE, FACIAL EXPRESSIONS, EYE CONTACT, APPROPRIATENESS AND ABILITY TO RESPOND TO QUESTIONS AND MORE
- DATA COLLECTED DISCRETELY; NO “OBSERVATION FACTOR”

Type of Social Cognitive Deficits	How it affects social interaction	How it affects classroom functioning
I=Poor Initiation of Communication or Action	<ul style="list-style-type: none"> Does not initiate appropriate social interactions 	<ul style="list-style-type: none"> Does not ask for help Sits and does nothing when others are doing something. In class group work, may not participate or only knows how to direct the others; weak negotiator.
L=Listening with eyes and brain	<ul style="list-style-type: none"> Does not observe other's social cues. Does not process the meaning of their message. 	<ul style="list-style-type: none"> Does not observe other's social cues in the classroom. Does not process the meaning of the message in the academic environment.
A=Abstract and Inferential	<ul style="list-style-type: none"> Does not infer meaning from social cues and has difficulty deciphering meaning from spoken language. 	<ul style="list-style-type: none"> Is limited in the ability to infer meaning from books and teacher's lectures. Very literal in interpretation of all materials
U= Understanding Perspective	<ul style="list-style-type: none"> Difficulty recognizing and incorporating other person's perspectives into how to regulate their own behavior in social relationships. 	<ul style="list-style-type: none"> Difficulty understanding the perspective of characters in literature. Difficulty regulating his classroom behavior according to the needs of others.
G=Gestalt processing; getting the big picture	<ul style="list-style-type: none"> Tangential language Off topic remarks as the student fails to track the underlying concept of the verbal interaction. 	<ul style="list-style-type: none"> Attends to details but misses the underlying concept of assignments. Writing can be tangential or misses the point. Difficulty staying with the concept of group work and cooperative learning.
H=Humor	<ul style="list-style-type: none"> They usually have a great sense of humor, but may miss the subtleties of humor. May not understand if they are being laughed at or laughed with. 	<ul style="list-style-type: none"> They respond well to a teacher who has a bit more of a relaxed, humorous style, but is still able to follow a fairly structured routine. The student may produce inappropriate humor in the class as an attempt to engage others.

RESULTS

AFTER THE 6-WEEK STUDY, IT WAS
FOUND THAT **8 OUT OF 10** PNO
CLIENTS IMPROVED IN AT LEAST **3**
OUT OF 5 I-LAUGH CRITERIA

THE USE OF MOBILE ASSISTIVE
DEVICES, IN CONJUNCTION WITH THE
BRIDGINGAPPS PROGRAM, CAN BE A
ROBUST THERAPY FOR TEENS WITH
HIGH FUNCTIONING ASD

CASE STUDY

Client: 16-year old male with high-functioning autism, mildly affected speech

Social Deficit: struggled with understanding perspective, monologue-type conversations

App: Social Express, participating in digital role-playing, and practicing interactive, 2-way conversations

Result: after 6 weeks, this client showed remarkable improvement in 'perspective taking', and was interacting more frequently with his peers

CASE STUDY

Client: 14-year old male with Asperger's, severely affected speech.

Social Deficit: Difficulty interacting with peers, and preferred to stay isolated at PNO, playing alone on his gaming device. This client also had difficulty with appropriate physical touch, often smelling and touching other clients' shoes or feet.

Apps: Attainment Community Success and My Horse apps, as well as the speech therapy application, Articulation Station. (Although speech is not part of the i-laugh criteria, therapeutic applications were offered to clients in this pilot)

Results: After a 6-week period, this client showed dramatic improvement in socializing with his peers (initiating appropriate interactions). He showed more interest in directly communicating with his peers, and was more aware of acceptable physical contact. This client's speech, however, showed no noticeable improvement

CASE STUDY

Client: 16-year old female with PDD-NOS and dyslexia

Social Deficit: This client still struggled with listening with the eyes and brain; in particular, she had difficulty making eye-contact and interpreting others' social cues

Apps: Social Express app, ABA emotion flashcards

Results: After the 6 weeks of BridgingApps, this client showed tremendous improvement. She was able to maintain eye-contact for longer periods of time, and was able to show a greater variety of expressiveness (both with facial movements and hand gestures) while conversing with others.

CASE STUDY

Client: 15-year old female with Asperger's, ADHD and Tourette's

Social Deficit: This client struggled with abstract and inferential thinking. She was unable to infer meaning from social cues and had difficulty deciphering meaning from spoken language; she also had problems with Gestalt processing, and understanding the big picture within social contexts

Apps: Feel Electric!, Proverbidioms and Expression Arcade

Results: After the study period, this client showed moderate improvement in social cognition: in particular, she expressed more desire to interact with her peers, and was able to infer meaning of common colloquialisms without guidance.

APPLYING BRIDGINGAPPS TO OTHER RESPITE OPPORTUNITIES

- GROUP RESPITE IS IDEAL OPPORTUNITY FOR THERAPY
- TEENS IN A GROUP LESS LIKELY TO CONSIDER IT “FORMAL TRAINING” OR THERAPY
- START UP COST IS MINIMAL
- RESULTS ARE EFFECTIVE

APPLYING BRIDGINGAPPS TO OTHER RESPITE OPPORTUNITIES

- PUBLIC SCHOOL SYSTEM
- CHURCH/SPECIAL NEEDS MINISTRIES
- NPO FOR DISABILITIES
- PRIVATE RESPITE

FOR MORE INFORMATION:

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COLLABORATORS



TTAP



help us bridge the gap and

POWER THEIR POTENTIAL

THANK YOU.