Building Community Through Communication: Development of a Playground AAC Board

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Disclosure

There are no financial or nonfinancial relationships to disclose
Collaborators

• City of North Canton
• Autism Society of Greater Akron
• Kent State University
  • Neurodiversity Research Initiative
  • Brain Health Research Institute
Project Leaders

Professional and Faculty Advisors

• Lisa Audet, Ph.D., CCC-SLP: KSU SPA Faculty, Director of NRI
• Lisa Thompson: Director of Programs and Operations, Autism Society of Greater Akron
• Catherine Farina: Director of Administration, City of North Canton

Student Researchers

• Lauren Falter: Speech-Language Pathology graduate student, minors in Autism Spectrum Disorder and Special Education, previous NSSLHA Diversity, Equity, and Inclusion Outreach Officer
• Gillian Deak: Speech-Language Pathology graduate student, previous NSSLHA Vice President, minor in Autism Spectrum Disorder
Our Time Together

- Importance of Access
- Language, Communication & Augmentative Alternative Communication
- Playground Project Development
- Research Development and Findings
- Next Steps
- Your Questions and Comments
Importance of Access: From Barriers to Participation

• Developmental Disabilities:
  • 1 in 6 kids (17%) have a developmental disability.

• Autism Spectrum Disorder (ASD): behavior differences, social and communication deficits (CDC, 2023).
  • Third most common developmental disability
  • 1 in 36 children under the age of 8 are affected by ASD
  • Spectrum: wide variation of type and severity of symptoms (NIH, 2023)
  • Approximately 30% are nonverbal
Speech vs. Communication vs. Language

- **Speech**: Verbal communication
- **Language**: The shared code between two communicators
  - Language is not always spoken!
  - A shared language is necessary for effective communication.
- **Communication**: The process of sending information between two or more people to accomplish something
  - We communicate in all activities, whether or not speech is used.
  - Communication CAN exist without speech!
What is AAC?

- Augmentative and Alternative Communication (AAC)
  - Provides Access
  - Evidence Based Means of communication
  - Many Low- and high-tech Options
  - Individualized Systems and Features
  - Color Coded Icons Representation of Language
    - Core words: common, everyday words that are used across contexts
    - Fringe words: words specific to an individual or a context
Playground AAC Board Project

• Purpose:
  • Increase the number of children with disabilities and their families who utilize the playground and the frequency that they visit.
  • Increase social interaction between children with and without disabilities.
  • Increase advocacy and education on AAC devices and those who are neurodiverse.
Project Steps

1.) Identify a playground to install an AAC board
2.) Engage in fundraising, currently seeking grants
3.) Conduct research on child language use on the playground
4.) Analyze data on child language use on the playground
5.) Create two AAC boards (one for play, one for the quiet area) with icons that have high readability
6.) Create a QR code on the AAC board for resources, information, and future research
Why Playgrounds?
Centers for Childhood Development!

- **Exercising:** Physically, and socially
- **Having fun:** Pretend play, imagining
- **Social play:** Any kind of play where children interact with each other
- **Developing language & communication skills:** Understanding social cues, problem solving, listening, sharing, etc.
Dogwood Park’s Possibility Playground

- Governor’s Award from the Ohio Parks and Recreation Association in 2022
- Inclusive playground with adaptive play equipment for all ages and abilities
- Sought out following community members’ survey responses
Playground Communication Research

• Purpose:
  • Identify Fringe Vocabulary Specific to the Playground Context
  • Support Communication of Ideas and Imaginative Play: Beyond Requesting
Research Process

• Design Development and Approval
  • Research Approval by KSU Institutional Review Board, Parental Consent
  • Identify Student Researchers and Conduct Research Training

• Method:
  • Three students at various locations within the playground, listening to and recording child utterances. Rotating to different locations every 15 minutes for two hours

• Data Analysis:
  • Identify core and fringe vocabulary; Interrater Reliability, Decision Making
Research Findings

• Using AAC Language Lab Core Word List
  • 19 Different Core Words Produced by Children at Dogwood Park
  • 56 Different Fringe Words Produced by Children at Dogwood Park
  • 75 Different Words Produced
Interrater Reliability

• Core Words Frequency Count: 88.6%
• Fringe Words Frequency Count: 91.1%
• Total Interrater Reliability of Frequency Counts: 89.9%
What we got...

• Pronouns: I me/my, you/your, it, he/him, we
• Nouns: tunnel, car, house, restaurant, spider web, ball, zipline, lava pit, school, jail, party, secret, feet, leg, troublemaker, challenge, way, ice cream, truck, obstacle course, anchovies, band aid, heights, mom, sister, day, thing
What we got… continued

• Verbs: is/am/are, eat, hurt, race, tag, did/do, go, want/need, look, get stop, climb, play, jump, slide, help, like, show/come, were/was, let’s, can, hear, scraped, slide, stuck, give/gave, burn, cook, try, bring, save, hold,

• Adjectives: fast, big scared, whole, scared, green, first
What we got...continued

• Adverbs, no/not there, than, another, back
• Prepositions: to, down, up for, off, on, in, with, by, at from
• Determiners: all, there, these, them, those
Decision Making

• Icon Selection:
  • Dynovox, Mayer Johnson, Board Maker

• Two Boards: Play area and quiet area
  • Play Area: 5x10 Design 50 Locations/Cells
  • Quiet Area: 4x4 Design 16 Locations Cells

• Identify Words Not Produced But Relevant:
  • Only 6: Swing, Drink, Yes, Bathroom, Done/Go, Friend

• Dialog Between 2 Researchers to Select Vocabulary
Select Words with Greatest Power

• Highest Frequency Words: Particularly Core Words
• Word Use While At the Board (eg Calling Mom)
• Word Use Across Season (eg: Ice Cream Truck)
• Relevance and Flexibility of Word Used (too specific eg: challenge, or obscure eg: troublemaker)
• Eliminate: color words, articles (a, an, the), and terms with a conventional gesture (bye-bye)
• Words that support engagement
Using Locations Wisely

- Communicative Interaction Supports Comprehension
  - Combine verb tense 1 location (did, do)
  - Combine helping verbs 1 location (is, am, are)
  - Combine similar terms (want, need)
## Board Vocabulary

<table>
<thead>
<tr>
<th><strong>Selected</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nouns</strong></td>
</tr>
<tr>
<td>I, me/my, you/your, it tunnel, car, house, restaurant, spiderweb, ball, zipline, lava pit, school, jail, party, bathroom, bridge, friend</td>
</tr>
<tr>
<td><strong>Verbs</strong></td>
</tr>
<tr>
<td>Eat, drink, hurt (replace band aid, feet, leg), race, tag, did/do, go/done, want/need, look, get, stop, climb, play, jump, slide, help, like, show, swing, spin,</td>
</tr>
<tr>
<td><strong>Modifiers</strong></td>
</tr>
<tr>
<td>Down, up, on, in, fast, big, scared, yes, no/not,</td>
</tr>
</tbody>
</table>
## Quiet Area Board

<table>
<thead>
<tr>
<th>No</th>
<th>Yes</th>
<th>Sad</th>
<th>Mad</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hot</td>
<td>Cold</td>
<td>Eat</td>
<td>Drink</td>
</tr>
<tr>
<td>Done</td>
<td>Ready</td>
<td>Stay</td>
<td>Bathroom</td>
</tr>
<tr>
<td>Loud</td>
<td>Hurt</td>
<td>Tired</td>
<td>Break</td>
</tr>
</tbody>
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Project Timeline

- **Summer 2024**
  - Creating a communication board

- **Summer 2024**
  - Securing funding

- **Fall 2024**
  - Produce communication board

- **Spring 2025**
  - Install materials at the playground with a Grand Opening ceremony
Questions?
See you in Sunny Dogwood Park!