Using Visual Scene Displays with Young Children:
An Evidence-Based Practice Synthesis
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Rationale

- Traditional high-tech AAC devices are commonly organized in a grid format, which may not be the most effective layout for many communicators.
- Visual scene displays (VSDs) and video visual scene displays (vVSDs) offer an alternative to traditional grid displays that provide contextual images and videos of meaningful events to children (Holyfield et al., 2017, 2019; Light et al., 2019; McCarthy & Boster, 2019).
- Commonly used on tablet devices, VSDs offer the ability to program “hotspots” that provide opportunities for expressive communication via speech output production.
- Transition to Literacy (T2L) is a feature used to promote literacy development by the appearance of dynamic animated text upon the selection of a graphic symbol using motion (Jagaroo & Wilkinson, 2008).
- Despite VSDs being used increasingly in early childhood, no synthesis of VSD studies with early childhood (3-8 years old) exists to examine the evidence-base of VSDs.

Visual Scene Displays

The child selects the image (i.e., the hotspot on the puzzle) from the VSD.
The text label appears and grows in size gradually.
The text remains on the screen for 3 s, is spoken aloud, and then recedes.

Research Questions

- Does the research literature on VSDs and video VSDs meet the CEC standards for EBP with young children in early childhood settings?
- What is the reported social validity for VSD and video VSD interventions according to early childhood professionals, parents, peers, and participants?

Methods

- A systematic literature review was conducted on ProQuest, PsycINFO, Web of Science, Google Scholar.
- Inclusion criteria: Early childhood (3-8 years old); developmental disability associated with difficulty with spoken language, use of high-tech VSD or VSD as an independent variable; a communication skill as a dependent variable.
- Interrater reliability was calculated as 97% agreement.

Results

Table 1. CEC Evidence-Based Practice Quality Indicators Met and Unmet for All Identified Studies (n=14)

<table>
<thead>
<tr>
<th>Quality Indicators</th>
<th>Met</th>
<th>Unmet</th>
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</thead>
<tbody>
<tr>
<td>1. Context and setting</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>2. Participants</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>3. Intervention agent</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>4. Description of practice</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>5. Implementation fidelity</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>6. Internal validity</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>7. Outcome measures</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>8. Data analysis</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Effects</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Total Quality Indicators met</td>
<td>+</td>
<td>-</td>
</tr>
</tbody>
</table>

- Fourteen studies met the inclusion criteria (n=14); twelve met all CEC quality indicator standards (n=12).
- With 42 total participants across 12 studies, VSDs met evidence-based practice criteria.
- Most common dependent variable was symbolic communicative turns taken by participants (n=6).
- Most common independent variable was VSD (n=9), followed by video VSD (n=3).
- Most common context for VSD intervention was storybook reading (n=5).
- Nine of the 12 studies reported social validity data (n=9); most of which reported positive perceptions and outcomes of VSDs.

Discussion & Implications

- VSDs can provide effective support for the development of communication and social skills of young children with a variety of disabilities, including ASD, developmental disabilities, language delays, etc.
- Teachers, parents, and researchers should consider VSDs as communication supports for social interactions and communicative development.

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References

- Light et al., 2019.
- McCarthy & Boster, 2019.