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Proposal ID: 12991

Proposal Type: General Submission Form

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Requested Session Format: Poster (90 minute commitment)

Potential Alternative Format I understand that there is no alternative format for a Poster.

Topic Area: Augmentative and Alternative Communication (AAC)

Title of Proposal

Photos for Visual Scene Displays: Input from Interviews with Visual Media Experts

Review and Confirm Your Title

Yes Please confirm that your title has capital letters for principal words and has no quotation marks. Make sure your title is **not** in ALL CAPS. Also, remember to use person first language in your title. For example: ***SLPs Role in Treating Children Who are Hard of Hearing versus SLPs Role in Treating Hard of Hearing Children.***

Instructional Level:

The content of the proposal is best suited for attendees at the following learner level.
Intermediate

Abstract Type: Research

Learner Outcomes

1. List three benefits of visual scene displays (VSDs) for children and adults
2. List three key principles of photographic composition
3. Describe how principles of composition may inform VSD design

Yes Please confirm that your learner outcomes comply with the requirements outlined above. Failure to comply with the requirements will result in your submission not being accepted for presentation.

Session Description

Visual Scene Displays (VSDs) are a promising interface for AAC systems for children and adults. Although recent research has focused on design principles of traditional grid displays, there is comparatively little information on VSDs. Ten individuals with a background in photography and visual composition were interviewed following a brief overview of visual scene displays applied to AAC systems. Interviews were analyzed for themes, lasting around 45 minutes each. Participants gave feedback on principles of composition, how those principles inform their own work, and "quick tips" on matching photos with goals related to communication in VSDs.

Abstract/Summary

Individuals whose natural speech is inadequate to meet their daily communication needs can benefit from augmentative and alternative communication (AAC) systems. Traditionally, AAC device displays utilize a grid layout, arranging communication items in a decontextualized manner. In contrast, Visual Scene Displays (VSDs) utilize context rich images (e.g., photographs) that depict events and activities, presenting communication items in a contextualized manner (e.g., the individual may a toy from an image of their toy chest; Wilkinson et al., 2012). For children scenes that depict familiar action routines allow for ready participation in routines and the emphasis is on quick capture of scenes to be used "in the moment" or "just in time (Wilkinson, et al., 2012). For adults, scenes can help support communication with familiar and unfamiliar partners based on significant life events and through photos with strong indicators of context and people involved (Light et al., 2019).

Recent research focusing on principles of the visual-cognitive sciences has found that even a small change to how we present communication items in a grid or VSD format may positively influence communication outcomes (Light, et al., 2019). Visual scenes and not meant to be “clean” single images with no background, but rather images embedded in recognizable contexts. Consequently, complexity may serve as an important consideration in AAC display design. Specifically, in grid displays, complex symbols and arrangements (e.g., the number of geometric forms and/or strokes required to form the symbol; Barton et al., 2006) may influence how individuals access the AAC display, possibly promoting inefficient motor plans such as cross reaching where an individual selects an element using their contra lateral limb (e.g., the individual used their left hand to select a right-side screen element; see Light et al., 2019 for review). However, to lower the cognitive load associated with grid displays, research in the visual-cognitive sciences identifies that grouping items by their internal color may support communication success (Light et al., 2019).

For VSDs, complexity is also an important consideration. However, while visual scenes support rapid processing/identification of scene context (e.g., Wilkinson et al., 2012), discussion of complexity in regard to VSDs is still emerging and may be influenced by factors such as scene relevance, and the number of items depicted in the scene (Wilkinson et al., 2012; O’Neill, et al., 2019). To support access to VSDs, research in the visual-cognitive sciences has identified that including meaningful interactions and human figures may help engage individuals in scene content and promote VSD-based AAC success.

Photographers and experts in visual composition receive training and have extensive experience in understanding photographic and artistic composition including how techniques such as lighting, exposure, color, and equipment can affect the final image. Photographers and experts in visual composition also have experience considering the communication supported by images. Consequently, talking to photographers and experts in visual composition about communication through photographs seems logical even though to date, no research to the authors knowledge has been done.

Principles of photographic and art composition may support findings from the visual cognitive sciences by limiting scene complexity through increased image structure and bringing the viewers’ attention to key scene elements (e.g., meaningful human figures; e.g., Peterson et al., 2003) that may be targeted for selection during direct selection or scanning paradigms. Therefore, compositional factors may help ensure that an individual is not being distracted or possibly ‘pulled out’ of the scene during VSD viewing.

Aims

- 1) Explore compositional factors that may support VSD access by highlighting key scene elements for both direct and indirect selection techniques
- 2) Identify how these principles may be rapidly applied in a ‘just in time’ communication setting.

Method

Individuals with a minimum of 2 years experience related to photographic and artistic composition completed a semi structured interview discussing how the principles of composition can build on the visual cognitive sciences literature to limit VSD complexity and highlight key scene elements by guiding image structure and use of color.

Further, interviewees discussed what camera settings could be used to emphasize these compositional elements automatically. Following transcription, theme analysis will be analyzed using a data driven coding approach (Gibbs, 2008).

Results and Conclusion

Data collection is in the early stages. Preliminary results indicate compositional principles such as 1) considering the depth of field, 2) utilizing structural principles of composition such as central composition, or rule of thirds, 3) having leading lines which 'point' the viewer toward focal elements, 4), using light and brightness to highlight key scene elements and 5) attempting to ensure semantic congruency of scene items may support the identification of key scene elements, and lower image complexity. These results support those of the visual-cognitive science by helping us understand why individuals attend to focal objects in the image, and are not necessarily distracted by background elements (O'Neil et al., 2019). These compositional principles may be quickly applied by automatic camera functions such as portrait mode, and low aperture settings, which may be used to blur non-relevant scene information. Results seek to help guide VSD display design for both direct and indirect access methods, along with future forms of AAC access technology.

If accepted, is this Abstract/Summary suitable for publication in the Program Planner/Mobile App? Yes

Will this proposed session focus on one specific approach, product or product line, tool, technique, service or model (without mention of or information about other similar approaches, products, services, techniques, tools or models)? No

If yes, describe:

References/Citations

Barton, A., Sevcik, R. A., & Ann Ronski, M. (2006). Exploring visual-graphic symbol acquisition by pre-school age children with developmental and language delays. *Augmentative and Alternative Communication*, 22(1), 10-20.

Gibbs, G. (2008), *Analyzing Qualitative Data*. London: Sage Publications

Light, J., Wilkinson, K. M., Thiessen, A., Beukelman, D. R., & Fager, S. K. (2019). Designing effective AAC displays for individuals with developmental or acquired disabilities: State of the science and future research directions. *Augmentative and Alternative Communication*, 35(1), 42-55.

O'Neill, T., Wilkinson, K. M., & Light, J. (2019). Preliminary investigation of visual attention to complex AAC visual scene displays in individuals with and without developmental disabilities. *Augmentative and Alternative Communication*, 35(3), 240-250.

Peterson, B. (2003). Learning to See Creatively: Design, Color & Composition in Photography (Ed. 3). Manhattan, NY: Amphoto.

Wilkinson, K. M., Light, J., & Drager, K. (2012). Considerations for the composition of visual scene displays: Potential contributions of information from visual and cognitive sciences. Augmentative and Alternative Communication, 28(3), 137-147.

Time-Ordered Agenda

N/A

Keywords

- Keyword 1:** visual scene display
 - Keyword 2:** composition
 - Keyword 3:** visual-cognitive science
 - Keyword 4:** AAC
 - Keyword 5:**
-

Will this submission be of particular interest to any of the following audiences? Researchers

Are you presenting as an interprofessional team that includes non-CSD presenters? No

Would you and/or the presenters of this session be willing to speak with the media about your presentation? Yes

How much of this proposed presentation has been previously presented (I.e., at other meetings or conferences)? 0%

Has this proposal been developed by an ASHA Committee, Board or Council? No

Enter the name of the ASHA Committee, Board or Council.

I/We can present on any day (Thursday, Friday, and Saturday). Yes

I/We cannot present on the following day(s): N/A

Special Reason

Is this a panel presentation/discussion with five (5) or more presenters? No

Themed Sessions: Our 2020 theme, "Reframe Your Thinking. Detours. Details. Discovery." is about the discoveries we make when we diverge from the usual

path in our research, service delivery or teaching.

Does your session fall under one of our theme categories? Discovery Sessions

are those that highlight new findings, whether from the lab, the clinical space, or the classroom.

Does any presenter listed in the proposal require a reasonable accommodation due to disability? This information will be solely used for scheduling purposes. No

Please add the name of the presenter(s) who will need assistance and describe their needs. The presenter will be contacted for additional information, if needed.

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