Walking the Walk: Culturally Responsive Practices in Augmentative Alternative Communication

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Abstract

For many Americans, the ability to communicate effortlessly is an impossibility. For these individuals, the provision of Augmentative Alternative Communication (AAC) is of utmost importance. This current pilot study addressed the cultural representations present within stock AAC systems. The pilot study focused on two research questions: If I quantitatively and qualitatively analyze the iconography of AAC systems, in what ways, if any, will the information inform the researcher of potential cultural mismatches evident within the factory stock iconographic programming? If I analyze AAC devices using a deductive qualitative coding scheme, in what ways, if any, will this inform the researcher about the nature of cultural representations within AAC devices in factory stock programming?

Terms

Introduction

It is estimated that four million Americans are diagnosed with complex communication deficits requiring augmentative alternative communication in some form (Beukelman & Mirenda, 2014; Beukelman & Mirenda, 2020). This population includes children with Childhood Apraxia of Speech, Autism, or physical limitations imposed by conditions like Cerebral Palsy, Aphasia, Apraxia, and Dysarthria. These conditions limit options to communicate with their wider world and often necessitate using an AAC device or system that replaces or supplements expressive communication. These four million Americans represent the vast cultural diversity that makes up the population of the United States, including African American, Latin@, Asian, Middle Eastern, Native American, Gay, Straight, and white. With such a large and diverse population needing AAC, professionals continually refine procedures to ensure these individuals have the resources necessary to learn, meet needs, and express their lived cultural experiences. Language is cultural, and AAC systems serve as an extension or replacement of an individual's natural speech and language.

Methodology

Given the demographic changes present within the United States and the increases in minority use of AAC devices, a clear need to understand these systems as cultural referents and cultural disseminators is necessary. To add to this body of literature and fill in some of these gaps, the following will detail the actions and methods undertaken to study the efficacy of the procedures used to identify cultural representation in AAC systems.

Study Setting and Participants

The present study focused on the visual referents of linguistic targets in AAC systems as they are programmed from the factory. Therefore, no human participants were included in this study. Data has been collected in multiple environments spanning the office spaces of this researcher (university office, home office, etc.). These locations are representative of the central region of the United States at a midwestern university offering undergraduate and graduate studies in a variety of majors, including Speech-Language Pathology.

Researcher Role

As a licensed Speech-Language Pathologist specializing in AAC practices, I have direct knowledge of the inner workings of AAC, familiarity with the production and distribution of AAC devices, and the provision of therapeutic services to support AAC. This expertise and experience have informed this researcher and guided the development of the study and research questions. It is vital to ensure that the researcher's role and biases are addressed when conducting qualitative and mixed methods studies.

This researcher served as the primary investigator, coding and collecting data with two additional coders for later analysis. Finally, this researcher provided the primary analysis of the coded data, including data entry into the database.

Qualitative Codes

Codes adapted from Goffman (1979)

Code	Description
Relative Size:	Coding how varied races are represented in AAC images determines if minority representations are consistently portrayed as less than, physically, than their white counterparts.
Touch (adapted from Feminine Touch):	coding for differences in how minorities are represented as either the users and commanders of objects and tools or as a demonstrator of the objects.
Function Ranking:	Coding for differences in the representation of minorities as either executives or subordinates when images include multiple characters engaged in performing and action or working together.
Ritualization of Subordination:	coding for representation of subordination through the characters' physical positioning within the image.

Additional codes that extend from critical media research

Code	Description
Skin Tone:	Coding to identify the nature and variety of available skin tones using the Pantone Skin Tone test.
Facial Characteristics:	Coding to identify the nature and variety of facial characteristics included in the stock visual images of AAC systems.
Hair Texture:	Coding to identify the nature and variety of hair textures included in the stock visual images of AAC systems.
Ritualization of Subordination:	coding for representation of subordination through the characters' physical positioning within the image.

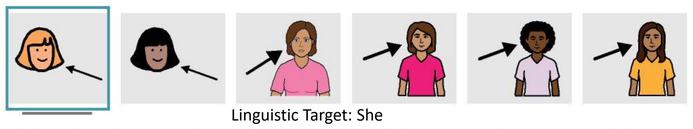
The current study used an Excel database and pivot tables to code and track all data collected. This database functioned as the storehouse for the data and the system in which data were analyzed. The database was divided into 13 columns, with each row representing an image analyzed. Multiple images representing the possible modifications that can be made for the linguistic target were grouped within the database to allow for analysis of specific linguistic referents (she, me, like). The existence or absence of the specified code was entered as a yes or no for each column. Additional columns included identifying the skin tone present in the image using the Pantone Skin Tone guide that reflects the 1000 skin tone variations within the populous, gender, sexuality, and perceived race.

Data Sources/ Data Collection

For this study, visual images from one major AAC device manufacturer formed the basis of the sample selected from one major manufacturer. This study used purposive sampling of stock images that come preprogrammed from the manufacturer. A representative sample of 75 images was selected from the system for analysis. The sample size was limited to just images that include people and the cultural variations that can be made for each image. Each image was coded within the Excel database based on the presence or absence of the targeted codes with additional coding of sex (male, female, other), perceived race, and skin tone. Skin tone was coded using the Pantone Skin Tone Guide, which reflects 1000 skin tone variations seen within the population. Each tone has a unique code provided by the Pantone guide and was coded in the database. The perceived race was determined based on the skin tone identified, cultural hair textures, facial features, and cultural clothing. After coding was completed on two-quarters of the data, two additional coders reviewed a sample of images, rating them within a copy of the database. The two databases were then compared to determine interrater reliability. In instances where an agreement was not achieved, retraining and consensus were used to resolve the discrepancy.

Pantone Skin Tone Guide

Linguistic Target: I



Linguistic Target: She

Additional qualitative analysis and notation were included once each image was coded within the database. This qualitative notation consisted of interpretations of subtle characteristics of the pictures, potential intent of the image, descriptions of cultural clothing, hair texture, facial features, and description of the image. A secondary qualitative analysis was conducted as the data increased in size to ensure the accuracy of the initial analysis and to capture additional qualitative data informed by subsequent image analysis.

Analysis

Analysis of visual data sourced from one major AAC system manufacturer was analyzed using a modified qualitative coding scheme, adapting coding schemas from critical research focused on the representation of minorities. One method that formed the basis of the coding system came from Goffman's (1979) schema used to analyze gender portrayal in print advertising. This coding scheme inherently consists of codes to identify stereotypical portrayals of power and control related to women that can be adapted to the portrayals of power and control associated with the representation of race. This data was then quantitized allowing for quantitative analysis using descriptive statistics (Tashakkori & Teddlie, 1998).

Additional qualitative analysis and notation were included once each image was coded within the database (see figures 5 and 6). This qualitative notation consisted of interpretations of subtle characteristics of the pictures, potential intent of the image, descriptions of cultural clothing, hair texture, facial features, and description of the image. A secondary qualitative analysis was conducted as the data increased in size to ensure the accuracy of the initial analysis and to capture additional qualitative data informed by subsequent image analysis.

Results

The perceived race was analyzed using a pivot table to determine the frequency and mean of representation (see table 5 below). As the table indicates representation of white people predominated the sample at 55%, with Asian people represented in .06% of the sample, Black/African American .1% of the sample, Lantin@ made up .18% of the sample, with .1% unidentifiable for the race.

Row Labels	female	male	unknown	Grand Total
Asian	2	1		3
Black	3	2		5
Latin@	2	7		9
White	13	14		27
(blank)	2	3		5
Grand Total	22	27		49

Race Coding based on Pantone coding

The skin tones identified represent a higher percentage of white skin tone representation than any other racial group at 44%, with black skin tones making up 14% of the sample and mid-tones representative of the Latin@ and middle eastern populations making up 2% of the sample. Within this data, we see that white people make up most of the representations present in the stock programming of AAC devices. These images were also analyzed for facial characteristics representative of racial groups. The presence of facial characteristics representative of the race were present within 30% of the sample analyzed, with 69% without racial facial characteristics. Hair texture differences were featured in 69% of the images sampled. Cultural clothing analysis indicated the opposite, with the absence of cultural clothing making up 93% of the sample. When cultural clothing was present, it reflected specifically identifiable connections to race, such as turbans, daishikis, and kaftans. No representation of LGBTQ people was noted within the sample.

Qualitative Results

The predominant racial theme identified within the sample relates to the quality of the portrayals. In cases when images representing members of the Black, Latin@, and Asian communities were present, reduced quality was noted in the presentation. The characters were portrayed with limited variations in hair texture, facial features, and culturally identifiable clothing. The only variation for the predominance of images was the skin tone of the actors. This overarching theme of changing skin tone to reflect cultural differences is rooted in neo-liberal racism where the most superficial characteristic (skin tone) is the signifier of culture. When additional identifiers of culture were noted in the sample, these identifiers were limited with African-American and Latin@ characters with rounded hairstyles and lacking in a variety of cultural hair textures that can be represented visually (plaits, braids, dreadlocks, twists, etc.). Additional qualitative analysis of the permutations or changes made to a specific icon demonstrated further the limitations of racial and cultural representation with AAC devices. Due to the scope of the study qualitative analysis and theming were limited due to the number and type of icons sampled and the intended scope of the study. Larger sample sizes will be important moving forward to ensure the capture of the full scope of themes present.

Discussion

As discussed in chapter 4, the quantitative and qualitative data were selected for their complementary nature. Using descriptive quantitative methods and qualitative analysis of the same data point (image, picture, icon) yielded a complete picture of the cultural representations present visually within this AAC system.

The data analysis and complementary nature of the qualitative and quantitative data also echo the extant literature. This literature has detailed how representations of race and culture have expanded over time to secure demographic parity. Yet, these representations continue to lack parity in their ability to more widely and accurately represent the cultural diasporas (African American, Latin@, Asian, Native American). This lack of parity is also seen in the lack of variety available to represent someone from a non-white culture with far more permutations to represent white individuals than any other racial group. These findings mirror the findings within current media research on the representation of race and culture.

Study Limitations

Due to the scope of the study, limitations were present. The most significant limitation relates to the sample of data. Using just one AAC device's symbols and a small sample of these symbols limits the study in its current form. These limitations can be easily accounted for in further studies that expand the number of AAC systems and images from each system. Some areas of coding may have been affected by the small sample size. These codes include ritualization of subordination and touch. It is clear that controls should be in place to ensure that those codes relying on images that include more than one actor are analyzed as a separate data set to ensure that the single character images do not reduce the findings for those codes.

Potential Implications for Practice

This study can inform the discipline of speech-language pathology of effective research methods to analyze the representation of culture within AAC systems. A focus on these systems as cultural referents and disseminators as verbal language can push the discipline to more culturally responsive practices.

Conclusion

This study focused on two research questions: If I quantitatively and qualitatively analyze the iconography of AAC systems, in what ways, if any, will the information inform the researcher of potential cultural mismatches evident within the factory stock iconographic programming? If I analyze AAC devices using a deductive qualitative coding scheme, in what ways, if any, will this inform the researcher about the nature of cultural representations within AAC devices in factory stock programming? The current research results indicate that the current methods are effective at identifying the nature of visual cultural representation in AAC device iconography. Both quantitative and qualitative methods resulted in results consistent with the extant literature on the study of cultural representation in media. Additional areas of inquiry were presented during data analysis, including the permutations possible for representing a single linguistic target, which can significantly impact culturally responsive AAC practices.

Website

References

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Fontbonne UNIVERSITY