Occupational Therapy Student Research

Occupational Therapy Program

Assistive Technology: Video Modeling

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Assistive Technology: Video Modeling

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Overview

Population and Site:

- Meristem is an educational program serving young adults who have autism or other neurodiversity (*Who we are,* 2023).The program promotes vocational and independent living skills through classes, community experiences, and dorm life that address physical, social, and cognitive skills. Students living in dorms are given additional opportunities to develop independent living skills such as cooking, cleaning, organization, community mobility, and social participation.

Project Goal:

- Our goal as a group was to identify ways to support students in the acquisition of independent living skills. The ideal assistive technology for this population would be a technology that is easily accessible, portable, and relevant. We found that Meristem has limited assistive technology currently utilized at the site; especially for independent living skills, making it relevant for us to find a technology to help support their independent living skill acquisition.

Impact

Social, Occupational and Community Impacts:

- Improved independent living skill acquisition. This includes but not limited to: meal preparation, cleaning, laundry, organization, and budgeting.
- Provides exposure to novel social interactions and community living responsibilities: dorm meetings, division of responsibility, conflict resolution, and communication in both familiar and unfamiliar environments.
- Practicing successful social interaction when navigating different community environments.
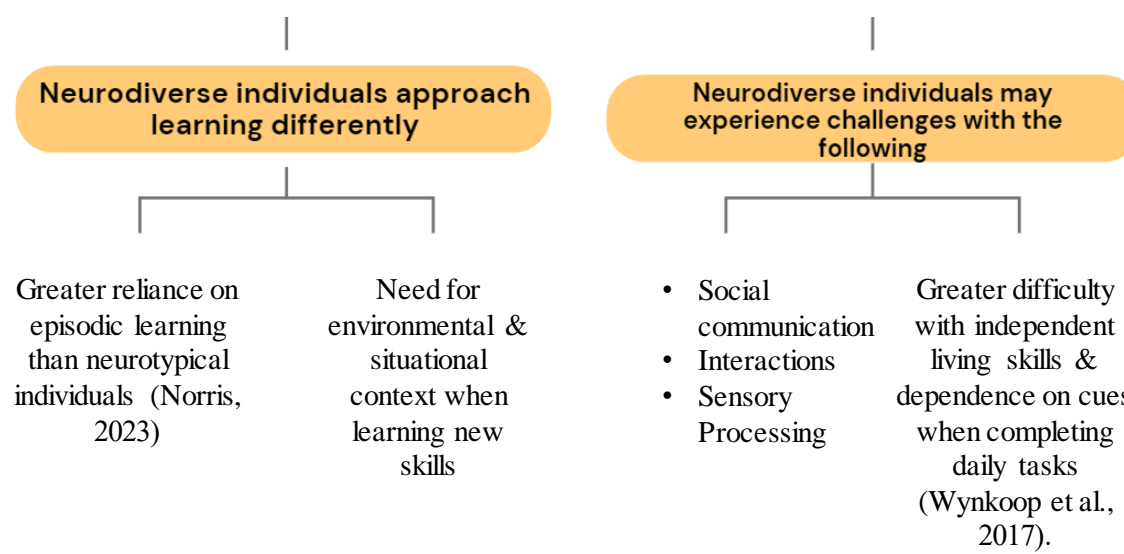
Future Implications

1 Students will achieve greater independence in living skills.

2 Positive behavior changes in areas of desired skill acquisition.

3 Increased speed of skill acquisition.

Long Term:

- Timeline will vary based on the student. The goal is that by the end of students' time at Meristem (3years) they will be prepared to use this technology on their own in their varying living environments to promote independence. This will be done by gradation of the activities with the living skills instructors giving students more independence as they feel appropriate for each students needs over time (see timeline for example).

Problem Statement

Problem Statement: In light of differences in learning needs and the barriers to independent living experienced by this population it is imperative to provide these emerging adults with additional support to achieve independence.

Neurodiverse individuals approach learning differently

Greater reliance on episodic learning than neurotypical individuals (Norris, 2023)

Need for environmental & situational context when learning new skills

Neurodiverse individuals may experience challenges with the following

- Social communication
- Interactions
- Sensory Processing

Greater difficulty with independent living skills & dependence on cues when completing daily tasks (Wynkoop et al., 2017).
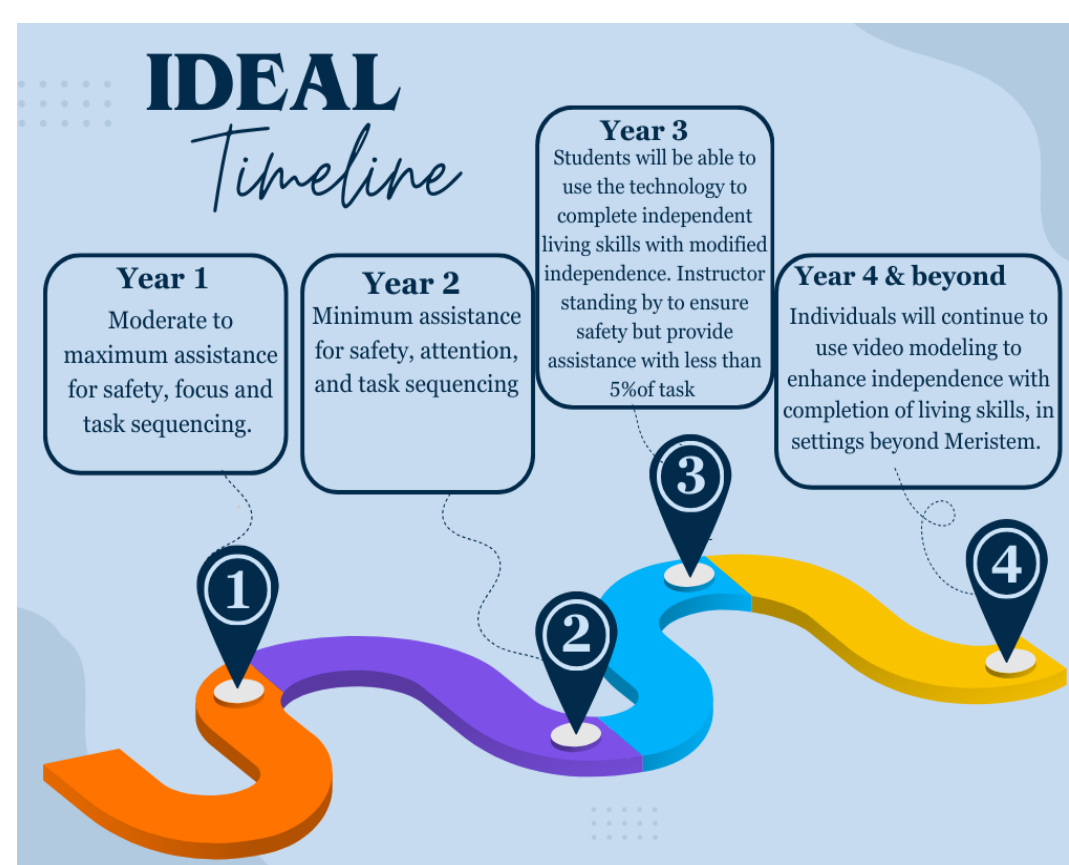
Cost

High:

Individuals may be inclined to complete video modeling tasks on an electronic device that is higher in cost. Examples include but are not limited to: video recording cameras, new or separate phones for video modeling, and iPad or tablets. Average cost for listed devices range from $200-$1,000 depending on user preference.

Low:

Video modeling can be made accessible on all devices, including already owned electronics. Applications on said devices may be free of cost with the use of self-recording on device camera, YouTube, TikTok, or one of many free apps.

Flexible Timeline

IDEAL Timeline

Year 1 Moderate to maximum assistance for safety, focus and task sequencing.

Year 2 Minimum assistance for safety, attention, and task sequencing.

Year 3 Students will be able to use the technology to complete independent living skills with modified independence. Instructor standing by to ensure safety but provide assistance with less than 5%of task

Year 4 & beyond Individuals will continue to use video modeling to enhance independence with completion of living skills, in settings beyond Meristem.

Technological Solution

Video modeling is an assistive technology in which the user or another individual models a behavior or task on a video, sometimes with step-by-step instruction (Aldi et al., 2016). This technology has the potential to help facilitate skill acquisition at Meristem. Video modeling has been shown to be an effective method to encourage skill acquisition in the ASD population (Bellini & Akullian, 2007).

The technique has been shown to work by providing the user with the ability to easily playback the instructions and imitate the task or skill that is being presented (Bross et al., 2018). Video modeling is extremely versatile due to the user's ability to create individualized video instructions of a task that can be altered to fit client needs.

Safety Considerations

- Participants in videos should consent to be filmed and be made aware of what the video will be used for.

- When practicing tasks modeled in videos that could be harmful (such as cooking) supervision should be provided.

- Video modeling should be paired with instruction to allow for feedback and supervision when necessary

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