Evaluating the User Experience of MoodGlide: A Novel Emotion Selector Device

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ABSTRACT

This article presents the development and evaluation of MoodGlide: Gliding Through Moods with Finesse!, an Emotion Selector Device designed to support individuals with Alexithymia and anyone who wants to keep track of their emotions over a period of time. Alexithymia is a psychological construct characterized by difficulties in recognizing, describing, and understanding one's own emotions (Taylor, Ryan, & Bagby, 1985). It has since been extensively researched in the field of psychology. According to Taylor, Ryan, and Bagby (1985), individuals with alexithymia often have a limited emotional vocabulary and struggle to differentiate between physical sensations and emotional experiences. The device aims to enhance emotional awareness, improve interpersonal relationships, and empower users to realize their emotional potential. A usability test was conducted with six participants, including three with Alexithymia traits, in order to assess the device's effectiveness. The test involved familiarizing users with the device, selecting emotions using the intuitive joystick interface, and evaluating the clarity of emoticon representations. Participants provided qualitative and quantitative feedback, highlighting the device's user-friendliness and impact on emotional expression and recognition. The results indicate that MoodGlide shows promise as a valuable tool in enhancing emotional well-being and personal growth for individuals with Possible Alexithymia.

Keywords: Emotion Selector Device, Alexithymia, User-Friendly Interface, Intuitive Joystick Navigation, Usability Test, Emotional Self-Awareness, Emotional Well-Being, Inclusive Design.

1. INTRODUCTION

Understanding and expressing emotions are vital components of human communication and interpersonal interactions. However, for individuals with Alexithymia, emotional processing can be challenging (Honkalampi et al., 2000).

MoodGlide was conceived as a solution to support individuals with Alexithymia in recognizing and expressing emotions effectively. This article presents the development process and usability evaluation of MoodGlide, an innovative Emotion Selector Device designed for this specific target group. By offering a user-friendly interface and intuitive joystick navigation, the MoodGlide device aims to empower individuals with Alexithymia to explore their emotions effortlessly. Through a usability test, the article examines the device's effectiveness in aiding emotional expression and awareness among users, particularly those with Alexithymia traits.

2. METHODS AND MATERIAL

The prototype uses Arduino Micro as the microcontroller for MoodGlide. Its compact form factor,

user-friendly programming interface, and versatile input/output options are the reasons for choosing it. The Arduino Micro's small size allows for seamless integration into the device's design, ensuring a comfortable and ergonomic user experience. The second version of the prototype is now more ergonomic and compact, with clear emoticon labels in English and braille for accessibility. It features an intuitive joystick interface, a buzzer, and vibration motor for user feedback. The addition of a Real-Time Clock enables gentle nudges for consistent emotional exploration. A 9V Alkaline battery was used to power the device. Crafted with a sturdy 3D printer using transparent PLA filament, the device ensures lasting performance and enhanced emotional well-being.

To select participants with Alexithymia traits, I utilized the Toronto Alexithymia Scale (TAS-20), a widely recognized and validated self-report questionnaire for assessing alexithymia (Schroeders, Kubera, & Gnambs, 2022). The TAS-20 consists of 20 items that measure three dimensions of alexithymia: difficulty identifying feelings (DIF), difficulty describing feelings (DDF), and externally-oriented thinking (EOT).

For this study, we used an online tool provided by www.embrace-autism.com to administer the TAS-20 questionnaire. Participants completed the TAS-20 assessment, which enabled us to identify individuals with potential Alexithymia traits based on their scores. The TAS-20 has been extensively researched and validated as an effective measure to assess alexithymia in various populations (Schroeders et al., 2022).

The development of MoodGlide began with an extensive review of existing literature on Alexithymia, emotional processing, and techniques to enhance emotional expression (Honkalampi et al., 2000; Matsumoto & Hwang, 2012). The device's design was guided by Paul Ekman's proposal of six basic emotions – happiness, sadness, fear, anger, surprise, and disgust (Ekman, n.d.). These basic emotions form the foundation of the MoodGlide device, enabling users to toggle effortlessly between these universal emotions (Ekman, n.d.).

To evaluate the device's usability, a total of six participants were recruited for the usability test. Among them, three participants exhibited Alexithymia traits with scores of 52, 55 and 60 in TAS-20 test, while the remaining three did not. The test involved offline sessions where participants familiarized themselves with the device and used the intuitive joystick interface to select emotions. Haptic feedback and a buzzer was integrated to nudge participants to use the device effectively, acting as an alarm, 4 times a day, starting from 08:00 till 20:00 in intervals of 4 hours.

3. RESULTS AND DISCUSSION

The results of the usability test revealed a high level of user satisfaction with the MoodGlide device. Participants' System Usability Scale (SUS) scores ranged from 67.5 to 92.5, with an average of 81.25, indicating a positive user experience. The intuitive joystick navigation received praise for its user-friendliness, making emotion selection effortless. Participants appreciated the seamless experience of toggling between the six basic emotions, as proposed by Paul Ekman (Ekman, n.d.). The clear emoticon representation, accompanied by labels and braille for accessibility, further facilitated accurate emotion selection, catering to the needs of individuals with Alexithymia (Haviland & Shaw, 2008).

Qualitative feedback from participants with Alexithymia traits highlighted the device's impact on emotional self-awareness. They expressed how the structured set of emotions provided by MoodGlide helped them recognize and express feelings that were otherwise challenging to verbalize. The use of a joystick and the ergonomic design was appreciated, making the users perceive the device as a “toy” and hence easing the regular use of the device without the mental pressure of choosing an emotion when the drive nudges. The inclusion of braille labels further enhanced the device's inclusivity, where users perceived its user-friendliness for individuals with visual impairments. Participants also commended the haptic feedback and buzzer acknowledgment, which instilled a sense of confidence and completion in the emotion selection process. This auditory and tactile engagement made the device more interactive and enjoyable for users (Haviland & Shaw, 2008).

4. CONCLUSIONS

The MoodGlide Emotion Selector Device emerges as a promising tool designed to support individuals with Alexithymia in recognizing and expressing emotions effectively. Its user-friendly interface, seamless emotion toggling, and clear emoticon representation cater to the specific needs of this target group. By addressing the challenges faced by individuals with Alexithymia in emotional expression and recognition, the MoodGlide device holds immense potential for enhancing emotional well-being and personal growth. The positive feedback from participants, especially those with Alexithymia traits, highlights the device's effectiveness in aiding emotional self-awareness. Further research and user feedback are essential especially in the field of data analysis and more range of emotions in order to refine and expand the device's capabilities, making it a versatile and valuable resource in the field of emotional support.

5. REFERENCES

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