Enhancing Resident Well Being Through Interactive Projection Technology

Innovative use of interactive projection Technology to engage residents in assisted living and Care facilities.
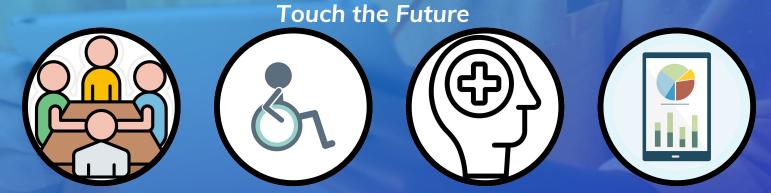
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Touch the Future

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Interactive projection is revolutionizing how we engage with digital content and environments. Combing advanced projection systems, motion sensors, and ground breaking software, interactive Projection can create dynamic, responsive experiences that can be projected onto any surface which serves a range of practical applications within an Education or Healthcare setting.

What is Interactive Projection?

Interactive Projection Technology involves projecting images or videos onto surfaces such as floors, tables, walls, ceilings, beds, or wheelchair trays. The sensors inside the technology detect movements and gestures, these sensors capture physical interactions such as touch and movement, and the Software then processes these inputs in real-time to alter the projected content accordingly. This creates an immersive experience where users can manipulate virtual objects and environments through natural gestures. Importantly, the gestures required to interact with the Interactive Projection can be minimal, allowing individuals with very limited movement to engage fully with the projected content. This inclusivity makes Interactive Projection Technology particularly valuable in settings where users my have physical limitations.

Engagement:

By turning passive viewing into active participation, interactive projection captures and maintains users attention

Accessibility:

This technology is accessible to people of all ages and abilities, making it an inclusive tool for Education and Therapy

Data Collection:

The software used with interactive Projection can track users interactions, providing valuable data on engagement and performance

Integrex Limited: Innovative Interaction Technology for all

The Software used to drive the Interactive Projection systems is crucial in creating an engaging and therapeutic environment for Care Home residents or those receiving Therapy.

Activities

The Interactive Projection comes equipped with various activities designed to engage users in meaningful and enjoyable ways.

Games:
Interactive games that range from simple, entertaining activities to word searches and quizzes to challenge cognitive functions. This type of activity stimulates the brain, enhances problem-solving skills and provides a fun interactive way for residents to stay mentally active and maintain the cognitive ability of the residents

Sensory Engagement:
Activities designed to stimulate the senses- Sight, sound, and touch are integrated to enhance the overall experience. These sensory elements can include soothing sounds, music or nature sounds, helping to calm anxiety and promote relaxation

Exercises:
Virtual exercise routines that encourage physical movement through engaging activities like dance, stretching and light aerobics. These exercises are designed to improve physical health, including strength, flexibility and coordination.

The monitoring tools within the Software offer valuable insights into the residents interactions with the interactive projection and this helps to understand various engagement metrics.

Reaction Time

By tracking how quickly residents respond to stimuli, Caregivers can gain insights into their cognitive and motor functions. Faster reaction times typically indicate better cognitive health and alertness. Using these metrics helps enhance well-being by identifying areas where residents may need more cognitive stimulation or support. Monitoring reaction times can also help detect early signs of cognitive decline, allowing for quicker interventions. Understanding the trends of these reaction times requires consideration of factors affecting interaction statistics, such as complexity of the task, users familiarity with the platform, technological changes, and system performance. By analysing trends and adapting strategies accordingly, organisations can foster continuing improvements and innovation in their digital interactions

Activity Levels

Monitoring how often and for how long residents engage with the interactive activities helps assess their physical and mental engagements. This data can be used to identify patterns and make necessary adjustments to activity schedules. This will also give an insight into if a particular resident prefers to engage in group activities or on an individual basis. High activity levels generally indicate good physical and mental health, while lower levels may signal the need for more engaging or varied activities to boost participation.

Interaction Areas

Tracking areas of interaction offers an overview of user engagement and performance within a given context. It features several key components that offer valuable insights into user behaviour, understanding their correct and incorrect responses, as well as their general movement throughout specified activities.

Tracking areas of interaction can provide insight into user engagement patterns such as whether users progress steadily through activities or exhibit erratic behaviour, jumping between tasks.

Well-Being Assessment

Well-Being is a multifactored concept that encompasses both mental and physical health, as well as overall life satisfaction. It reflects an individuals subjective experience of their quality of life, encompassing feelings of happiness, fulfillment, and general contentment.

Wellbeing is a scoring system that encapsulates physical health, emotional resilience, and cognitive functioning. Using Interactive Projection allows the monitoring of users' overall emotional state when interacting with the Software and gives insights into how their Wellbeing is changing over time. By tracking users' feelings and emotions, we gain valuable insights into their mental state and overall wellbeing. This data can help us identify patterns and trends in users emotions, enabling personised support and resources to enhance their wellbeing.

Impact on Wellbeing

Implementing interactive projection systems into Care Homes can significantly enhance residents' overall wellbeing:

Mental Wellbeing

Regular engagement with cognitive activities helps maintain and improve cognitive functions, reducing the risk of cognitive decline and related conditions such as Dementia.

Physical Wellbeing

Regular engagement with cognitive activities helps maintain and improve cognitive functions, reducing the risk of cognitive decline and related conditions such as Dementia.

Social Interaction

The Interactive Projection system encourages socialisation among residents. This can help build a sense of community, reduce feelings of loneliness and improve mental health

A Care Home in Stoke on Trent implemented the Interactive Projection system into their facility and observed significant increases in resident engagement and activity levels, they reported they have used the system 3- 4 times a week both as group sessions and one-on-ones, they have noticed it encourages the residents to engage and chat together while interactive with the Interactive Projection Unit. The staff also noted how the system acts as a conversation starter and residents will often engage in conversation following on from an image or video being projected onto the table in front of them. One care home in Derbyshire reported that when the hot air balloons appeared on the screen and the resident was asked to splat them as they appeared he started to tell staff and the other residents seated around the projection how he and his late wife had taken a ride on a hot air balloon.

Within the Care Home facility in Stoke On Trent, the Care Home reported that the Interactive Projection was having a particularly positive effect on a resident with Parkinson's disease and that the Interactive Projector had helped improve the mental sharpness of that particular resident. They have been using interactive ball games to encourage hand-eye coordination and projecting the word searches onto the floor and encouraging residents to find the words with a long handled floor duster.

Resident A was using the interactive projection unit with her daughter during a visit, they were taking part in a quiz about Elvis Presley, one of the questions was about a film that Elvis had starred in, Resident A shared with her daughter that the film was one that she and her late husband had seen while on honeymoon.
The ability to share in an activity during visiting time allows for intergenerational use, bridging the gap between generations and allowing participation for multiple people, in turn giving visitors and residents a shared goal and topics of conversation to engage in, that may not ordinarily have arisen

John, a retired baker in the early stages of Dementia, had been living in the care home for six months, displaying a noticeable disinterest in participating in any of the activities offered. Seated in a wheelchair, he presented as exceptionally quiet, mostly uncommunicative, and wore a persistently sombre expression. During a communal game of football being projected onto the table in front of him John tentatively reached out to interact with the virtual football game. As the ball approached, John's demeanour slowly transformed. A spark of interest ignited within him, and he began actively participating in the game. His hand movements became more purposeful as he skilfully moved the ball. A genuine smile spread across John's face, and he started to communicate with the staff.

66.6% of Care Homes rated 5 out 5 that the Interactive Projection reduced anxiety among residents

66.6% of Care Homes rated 5 out of 5 that there had been improvement to social wellbeing among residents.

Setting up the Interactive Projector

Implementation of the Interactive Projection in the Care Home involves the Projector either wheeled into a communal area or an individuals room if it is a mobile solution or installed in a common area as a fixed solution. Care Home staff are often busy with various responsibilities so a simple setup ensures staff can quickly and efficiently get the Interactive Projection up and running without needing extensive training or technical support.

Staff Training

Care facility staff should be trained to operate the system and interpret the data it generates. Training should cover basic troubleshooting, activity customisation and data analysis.

Resident Introduction

Introducing the Interactive Projection to the residents involves demonstrating its use and benefits, initial sessions should be guided to ensure comfort and familiarity with the technology.

Data Privacy and Security

Ensuring the privacy and security of resident data is paramount, The system should comply with relevant data protection regulations, and access to personal data should be restricted to authorised personnel only.

Chapter 7 I   Conclusion

Interactive Projection Technology offers a multifaced approach to enhancing residents' well-being in Care facilities. By combining cognitive and physical activities with advanced monitoring capabilities, these systems provide a comprehensive solution for improving mental health, physical fitness, cognitive abilities, and socialisation. As technology evolves, its potential to transform Care environments and improve the quality of life for residents will only increase. The sophisticated software capabilities offer a comprehensive solution to enhance the well-being of Care Home residents. As Care Homes continue to seek innovative ways to improve residents' care, interactive Projection Technology stands out as a powerful tool for promoting overall well-being. Interactive Projection Technology has been shown to improve numerous benefits for Care Home residents, particularly those living with Dementia or other cognitive impairments. The use of motion-activated projections helps to combat isolation, stimulate mental and physical activity and foster social interaction.

Recommendations

Investment in Technology
Care facilities should consider investing in Interactive Projection systems to enhance residents engagement and wellbeing

Regular Training
Continuous training for staff to maximise the benefits of Interactive Technology

Data Utilisation
Leverage the data collected to tailor individual care plans and interventions

By integrating Interactive Projection Technology, care facilities can create more engaging, supportive and Health-promoting environments for their residents.

https://www.integrex.co.uk/product/the-wellbeing-suite/