

Enhancing the Experience of Yoga Practice through an Immersive Interactive Studio

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ABSTRACT

The Interactive Yoga Studio is a unique space for a yoga practitioner to achieve a deeper level of realization. This studio can be used by a regular daily practitioner, and can also be utilized for learning the poses in a more accurate way and encourages longer holdings of the each poses. The interactive visuals not only keeps the interest constant throughout the practice, but also guides the practitioners to stay in the poses for a healthy duration.

Author Keywords

Exercising and Socializing, Embodied Interaction

ACM Classification Keywords

H5.2. Interaction Styles

INTRODUCTION

The term “yoga” means union. The yoga practitioners endeavor to reach the state of inner peace, and the union within oneself and the rest of the world in daily yoga practice [1]. On the similar note, interactive media has become a medium between people and the world to be more tangible and connected. Though one might say the holiness of yoga practice maybe interrupted with the technology, our study and test showed that the interactive arts have made the yoga seem more approachable and interesting, especially for the beginners.

Our combination of art and technology brings the mind and body of the modern society together. The physical exercise and the inner peace in the social life are the main goal of our yoga studio.

DESIGN RATIONALE

Products and research done commercially and academically are often focused on physical activities as life quality enhancers, [2,3,4,5] however only few incorporate yoga as a main activity. Nintendo's Balancing Board program guides the players to follow the verbal and visual virtual character's demo to practice yoga in a “personal trainer” style. The players are notified with visual feedbacks on the

monitor whether the pose was done right or wrong. This computation is done by the weight distribution of the square board that users place on the floor [2]. Social Yoga Mats [3] introduces the way to improve the quality of social life and physical exercise by obtaining a yoga mat that shows the status of the fellow practitioner's on or offline. As our yoga studio concept is also in a status of exploring and furthering our research on social and habitual aspect of the physical practice, their attempts on ubiquity of the practice is especially valuable. A concept development of an interactive yoga mat with one sensor was published with visual expression projected on the mat itself [4]. Our yoga studio uses three wall projection to be seen in most of the poses: in our most recent prototype demo, we've used three screens in a cave environment to play the main interactive visuals in the middle screen and the supporting visuals on the side. The current prototype contains five minutes in the total length of the nine videos triggered by different postures and connected by sequence of a flow, sun salutation [5]. The audio in the background works as a soothing and supporting media for the practitioner to obtain steady and smooth breathing throughout the practice.



Figure 1. Demonstration in a three-screen environment

A typical yoga practice is done in a group environment and our current prototype promises great potential to expand this to an immersive and networked group exercise where each practitioner's exercise encourages other's endeavor.

HOW PRACTICE WORKS

Lotus flower in Hindu religion symbolizes eternity, plenty, and good fortune [3]. In this prototype, we've decided to use lotus flower as a mean of expression and a concentration point. The story of a lotus flower begins with birth to the full blooming; and in the process, it experiences the freedom from outer influence. This realization of center of consciousness is usually done in years of practice and arduous effort. Especially practicing alone, motivation to

complete the practice is significantly lower than practiced in a group or guided by a teacher. Complimenting such fact, the interactive yoga studio encourages the practitioner to constantly put effort in finding intention and the center of attention in oneself. While the video is playing, the practitioners are encouraged to stay in the pose. Therefore the practitioner has the power of choice in both initiating, and enjoying the endurance.

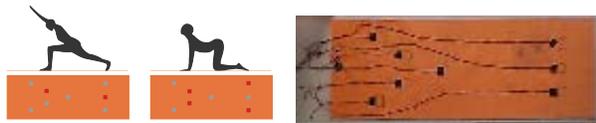


Figure 2. The yoga mat triggering the video

THE YOGA MAT

We see a great potential on our yoga mat to be an assistant to the teacher in a yoga class. When the class is for the beginners and contains only few students, the instructors may demonstrate for the class. However, in most cases, one teacher is not enough for all the student's safety and benefit for individual differences. Our yoga mat and the visuals guide the users to be staying in breathing and postures for the time the video is playing. According to our demonstration and testing, the practitioners were more enjoying the time of staying in one posture when there were interactive visuals. We have witnessed that by providing the users agency and choice to define their visual feedback increases the immersion to the practice.

IMPLEMENTATION

Our initial prototype consisted of a single 145" screen projection area. However, that layout didn't provide us the level of immersion we were seeking to achieve so we designed a second iteration featuring three 145" screens. This setup engaged our practitioners in an immersive environment complemented by a 5.1 surround sound system. Combining this technology resulted in a seamless environment that successfully allows us to transport our users to an alternative space of peace and self-realization, disconnected from the stress of their everyday routines.

A LilyPad Arduino prototyping platform was used to interface the sensors through an analog multiplexer and a Python source was written to analyze the status of each pose. Whenever the practitioners successfully achieve the required poses, the correspondent video will be triggered. Each video length corresponds to the hold time of each pose, triggered on top of an animated background through alpha channels, creating a seamless environment that runs smoothly throughout the duration of the practice.

EVALUATION

Our design choices were based on early stage feedback where users felt that simply switching videos was disruptive and distracting, defeating the purpose of the yoga practice. Recent feedback indicates the issue no longer exists.

Combined with our custom audio bed, we hope to offer our practitioners a meaningful, engaging experience.

In the initial state of development, we provided traditional yoga classes and studied the practitioners' behavior and mind. The observation and research allowed us to make decisions on the maximum number of students in our prototype and the duration of the demo. Moreover, our demonstration in academic setting taught us to be more general and open to the beginners and help them overcome the misconception and judgment towards yoga classes. Overall, we've received positive feedback from both experienced and inexperienced users that the visuals have kept their interest and immersion higher throughout the practice.



Figure 3. Pressure points and poses

FUTURE WORK

Our current prototype serves as an immersive environment for a practitioner to interact with the mat and create a unique experience. We are however developing with the goal to accommodate three to four practitioners in a space, with networked yoga mats, to enjoy the practice in a more personal interactive and creative way.

We believe our usage of non-invasive technology has enabled our practitioners to achieve a deeper level of inner peace and self-realization through the practice of yoga.

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