

## **Introduction to Yoga: Through an Interactive Module**

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**Abstract:** The concept of yoga has changed from being a path to spiritual enlightenment to a more aerobic activity since its arrival from India to the United States in the early 1970's. Instead of practicing one on one with a yogi, participants now attend large classes with people of varying levels of experience and ability. When the poses are performed correctly, yoga can have many health benefits. However, when poses are done incorrectly over a period of time it can result in pain and long-term injuries. These large classes can often be intimidating and yogis often do not have time to cover background information and safety information. This module fills the gaps by providing, via the Internet, an interactive multimedia instructional module covering those specific topics. The purpose of this instructional design project was to develop and evaluate an interactive multimedia instructional module for teaching adults with varied levels of yoga experience basic background and safety information that would aid in the comfort and safety of a person attending their first yoga class. Volunteer participants evaluated the module and data was collected by surveys to measure attitude towards the module as well as knowledge gained by participating. Overall the participants found the module to be a valuable resource in learning yoga.

### **Introduction**

When most people think of yoga, the association that comes to mind is a dark, quiet room full of people who are in tip top shape stretching in poses that most of us could never dream of doing. In reality, the practice of yoga can be for everyone. There are many different kinds of yoga and many different ways to practice it. Not all of the ways include contorting yourself into difficult poses. Yoga has many benefits for the average person, including health and stress relieving benefits. The biggest challenge some people face when thinking about beginning a yoga practice is where to begin.

When a person decides they want to begin a yoga practice, they might ask friends for recommendations on a class, buy a yoga video, or even check out some local yoga studio websites. Many of these websites offer basic information on what to expect when coming to your first yoga class but very few, if any, offer an introductory module attached to that

website so that beginning students had something to try out before they came to their first class. This module would also offer immediate feedback for the new student so they knew how well they were doing as they progressed through the module.

The purpose of this instructional design project was to develop and evaluate an interactive Adobe Flash based instructional module to teach adults with little or no yoga experience about basic yoga concepts. The study focused on a broad range of information such as historical information, logistical information for attending your first class, basic terms that a person would hear in class, and some of the benefits and proper ways to perform a few of the commonly seen poses in class. Without this module people walking into a class might not feel quite as confident that they are able to understand what is going on in class and perform the poses safely.

## **Background**

There has been a good deal of research showing that technology can be a positive aid in the learning process of exercise and other psychomotor skills. Gallaway and Lauzon (2006) found that video games, such as Dance Dance Revolution were extremely helpful in getting sedentary children to perform physical activity. The game, also used in research by Epstein et al. (2007) was found to be more effective than a stationary bicycle for getting children to exercise. These findings show the importance for the exercise experience to be engaging in order for people to want to continue participating. Salyers (2007) concluded that nursing students taking courses which taught psychomotor skills delivered on a web-based system outperformed the students that did not have access to the web based tool. The study found the web based system to be more engaging and the participants found the material to be more interesting when presented in an online multimedia format. These participants were also able to transfer the skills learned in the modules to real life situations better than students who were taught by using the traditional lecture format.

When online learning was first being developed and implemented, many educators believed that it could never be as effective as face-to-face learning because of the lack of interaction and tailored feedback. While many still believe this, there is now evidence that students learn just as much online as they do in a traditional classroom (Swan, 2003). Online education provides learners with flexible and convenient methods of learning. Learners have the ability to work at their own pace as well as work from remote locations. A literature review performed by the U.S. Department of Education (2009) found that students who take all or part of their class online performed better and spent more time on task than those students who are taking their courses only through face-to-face instruction. However, online methods of delivery may lack face-to-face communication and the hands-on aspect of traditional education. Participants who most prefer online delivery believe that the convenience is the most influential factor in their preference (Donavant, 2007).

Multimedia delivery methods can be used as a way to deliver online instruction. While the visual design of these modules is important, the content, context, and the individual

learner determine the level of learning that takes place (Cisco Systems, Inc., 2008). “Chunking” of information into smaller units can make modules more effective and palatable. Research has also found that learning style significantly effects neither a participant’s enjoyment of an online module nor the participant’s success in completing the module (Du-Charme-Hansen & Dupin-Bryant, 2004). This research has helped to form a set of principles relating to multimedia and modality. These principles state that using words, pictures, and animation in addition to text is more effective than relying on text-only instruction. The placement of extraneous words, pictures, and sounds can hinder learning and the manipulation of the learning materials can also increase the impact. It has been found that “the reality is that the most effective designs for learning adapt to include a variety of media, combinations of modalities, levels of interactivity, learner characteristics, and pedagogy based on a complex set of circumstances” (Cisco Systems, Inc., 2008).

An application that has come to represent new media delivery is Adobe Flash. Flash is currently being used on the Web for delivery of information because of its capabilities of bringing together text, images, animations, sound, and video into a small file format. In the past, Flash was mainly associated with only being used to create animation for entertainment purposes (calling its projects a movie), but increasingly it is being used to create informative text-based applications and content rich compositions. New versions of Flash refer to its products as “documents” or “projects” showing the shift away from being just a product for entertainment (Sorapure, 2006). Flash animation can be written to include embedded video clips. The value of adding video is largely dependent on how it is used. Video can provide a nurturing value that can aid in motivation and positive attitudes. Motivation has been linked to attention variables (Choi & Johnson, 2005) associated with multimedia learning.

## **Methodology**

This instructional design module was designed to provide adult learners with instruction on yoga concepts that might not be available in an interactive format. The module gave learners the opportunity to explore different styles of yoga and information that yogis (yoga instructors) do not always have time to cover in class. The design ensured that by using text, video, and interactive Flash that various learning styles were accommodated. The module required participants only to have minimal computer and Internet navigation skills.

### *Module Development and Design*

The instructional module was intended for people who are either new to yoga or current beginner yoga students who are interested in obtaining background information related to the practice of yoga either before attending their first class or at the early stage of their journey in practicing yoga. The sample population chosen to test this module was volunteers who were at least 18 years old. The participants were both male and female and had little or no knowledge of yoga and might be interested in starting their own yoga practice. This population would benefit from this module so that less class time can be

spent talking about background concepts and more time can be spent doing the poses safely. This module can also help ensure that participants are quickly able to perform poses in the recommended manner. An instructor will be able to give the module to the participants to complete at their own convenience or link to a yoga studio website. This will give the yogi more time to dedicate to instruction and to ensure that beginners have the same base level of knowledge on certain important concepts.

When designing this instructional module, the information was presented to the learner by text, supporting video, and interactive pages created using Flash. Following each instructional section were self-check questions with immediate feedback for the participant. Along with the Flash information, visual aids were incorporated, showing the participant the correct way to do the pose from various angles and highlighting known problem areas. This module was delivered on a website written in HTML with Flash designed content. This was an appropriate method for delivering the module because of the ability to use Flash format on both Windows and Macintosh computers, low computer requirements for use, as well as wide range of familiarity and ease of creation. The only computer skills required for participation was basic use of a computer and the Internet. While offered on an online hosted website, the module was also given to the participants on a CD ROM for them to review at their convenience. Additional resources included would aid the participant in finding more information and places to practice yoga on O'ahu. The designer chose to offer the module online because it can be accessed anywhere that the participant has Internet access.

The module was structured with an introduction explaining the purpose of the module and what the participant should expect. With the learning objectives provided, the images, and description of the background information, the participant will be able to answer the self-check questions correctly. The main improvement from other yoga instruction was the use of immediate feedback in the form of self-check questions following the explanation of each pose. The interactive sections also engaged the learner in retaining the information. The questions and feedback were designed to eliminate frequent problems encountered by beginning students for introductory information.

A subject matter expert in the University of Hawai'i School of Kinesiology was consulted to help in determining what content would be important and appropriate for a module to be delivered in this way. The subject matter expert was able to provide feedback on what areas he was not able to focus on in class that would be beneficial for students to learn outside of class at their own pace.

This module was created on a Macintosh with Photoshop, iMovie, and Flash. Photoshop was used to manipulate and edit the photos, iMovie was used for video editing as necessary, and Flash was used to create the main module components. The website itself was created with RapidWeaver for the Macintosh. Data was anonymously collected using paper-based surveys. The module was evaluated in Wist Hall with the Apple iMac and MacBook computers provided by the University of Hawai'i College of Education.

### *One-on-One Evaluation*

The formative evaluation of the module consisted of two parts to test the module's effectiveness: one-on-one evaluation and small group testing. The one-on-one evaluations were conducted remotely and participants used their own computers and Internet access. A total of three one-on-one evaluations were conducted. In order to obtain evaluation from different levels of experience and backgrounds, one person was a student in the Educational Technology program at the University of Hawai'i, one person had no yoga or instructional design experience, and one person was a subject matter expert in yoga.

The subjects for the one-on-one evaluations were asked to complete the module and note things like grammar errors, if the navigation through the website made sense, and if the content was appropriate and accurate. Feedback was gathered from the one-on-one sessions and was incorporated into the module as the designer saw fit.

### *Small Group Testing*

The small group testing was conducted at the University of Hawai'i College of Education instructional area. This area had iMac computers as well as MacBooks equipped with external mice and headsets. There were 14 participants who were recruited through college mailing lists and social networking sites such as Facebook and Twitter. All participants felt very strongly about their familiarity with the Internet and their navigation skills on computers in general. Most had also used the Internet before to learn new skills.

### *Instruments*

In order to ensure the protection of the subjects participating in this study, appropriate measures such as paper consent forms were passed out before participation. All participation was voluntary and the embedded, pre and post survey answers did not contain user identifiable information. The surveys were also coded and anonymous with no identifying information collected that could be linked to the participants.

The module was evaluated by collecting both qualitative and quantitative data. There was a pre-survey, post survey, embedded questions, and a final questionnaire created for this module. The pre and post survey were comprised of the same fifteen true/false questions to document knowledge gain. The pre survey was to be completed before the module was started and the post survey was completed immediately after the instruction was completed. Each survey was designed to take approximately ten minutes to complete. The nine embedded questions were a mix of multiple choice and true/false questions and presented immediately after the appropriate section was covered. No scoring was collected on these questions and feedback was given to the participant immediately after they answered the questions. Multiple-choice questions gave participants the option to try again if they did not choose the correct answer the first time.

After completing the module the participants were asked to complete the questionnaire. The questionnaire was a total of 19 Likert scale questions related to participant

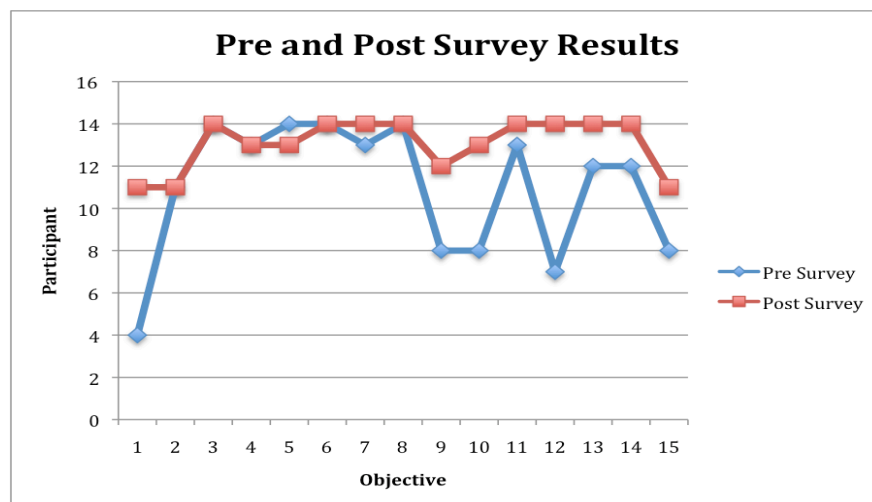
demographics, prior yoga knowledge, attitudes, and questions related to determining the effectiveness and clarity of the module. There was one open-ended question structured to gather feedback and suggestions on how to revise the module and ascertain if it was clear, understandable, and to measure the modules effectiveness.

### Findings and results

The small group testing showed that the design of the module was successful in the terminal objective of increasing the participant's comfort level in attending a yoga class.

Participants in the study all had at least some college coursework and 85% had an advanced degree of some type. 100% of the participants owned their own computer and felt comfortable using the Internet in general. Slightly over half (57%) had some experience performing yoga and 35% of participants had used media such as a DVD or other online resources to learn about yoga in the past.

A comparison of pre and post survey results showed that participants' correct responses increased for nine out of fifteen objectives (Figure 1). For four of the objectives the pre- and post- survey results were identical. The objective for these four questions was to recognize the Sanskrit term of asana as referring to the act of performing the yoga poses, knowing if you could injure yourself by doing a pose incorrectly, knowing if yoga can be used along side traditional medicine to aid in treating various conditions, and if practicing yoga regularly can aid in stress relief. For the later three questions all of the participants got the correct answers for both the pre- and post- survey suggesting that the question was too easy for the participants. For the question relating to the Sanskrit term of asana, eleven people got the correct answer on both the pre- and post- survey suggesting that that question was either confusing or was not covered thoroughly enough in the module. For one question the participants all selected the correct answer on the pre survey. For the post survey one of the participants selected the incorrect answer. This question asked the participant about the varying styles of yoga and if there was a style that could accommodate various fitness levels. It can be inferred that the question caused confusion or was not worded in a manner that was consistent with the wording in the module.



### **Figure 1. Pre and post survey results**

For one of the participants both the pre- and post- survey answers had to be omitted. For objective 1, 2, and 9 the total participants is thirteen instead of fourteen. This is due to one participant not answering the questions on the pre survey. Since the questions could not be matched to a post survey, the post survey answers were omitted whether they were correct or not.

Overall, participants' responses to the module were positive. All of the participants agreed that the module was clear with 78% strongly agreeing and the remaining 22% agreeing that the module was clear. All of the participants felt that the module contained an appropriate amount of content as well as strongly agreeing that the navigation and videos used aided in delivering a positive experience from the module. All participants also felt that the embedded questions added value with a majority (71%) feeling strongly that the questions were an added benefit to the module. All participants said that they would indeed use an instructional module again to learn a new skill and 71% said that they would use a module again to learn more about yoga. Of the 71% that would use a module to learn yoga 42% felt strongly that they would. For the terminal objective question of the participant feeling more comfortable attending a yoga class after completing the module, most of the participants (92%) felt they would feel more comfortable attending a yoga class. Of the participants that felt more comfortable 42% felt very strongly that their comfort had increased. The 8% of the participants who did not feel more comfortable attending a class represented one participant who remained neutral.

### **Conclusions**

Results from the study supported findings by earlier studies on the benefits of adding technology into learning of a physical activity. Overall, participants performed better on the post survey than on the pre survey, which supports the findings found by Salyers (2007) where nursing students who were taught psychomotor skills delivered by a web based system outperformed the students who did not have access to this tool. Participants also felt overwhelmingly that when the videos and animation were added benefits to aid in the delivery of the material. This finding is in congruence with a Cisco Systems (2008) study finding that using a variety of media and different levels of interactivity will be the most effective. Based on feedback from the one-on-one evaluations, this module was developed to only include important information relating to the content and anything that was deemed distracting was removed based on one-on-one feedback. This same study also found that extraneous words, pictures, and sounds could actually be a hindrance to the learning process (Cisco Systems, 2008).

The use of Flash as a delivery mechanism for some of the content was well received. Participants noted that the Flash aided in making the material interesting and in the retention of the information. This is consistent with findings by Choi and Johnson (2005) finding that motivation has been linked to attention variables that are associated with

multimedia learning. The same study also found that adding video to instruction can be useful depending on how it is used which is consistent with participant feedback that they felt that the videos used aided in the instruction. Based on the feedback received, revisions will be made to include video created by the researcher instead of video found in the public domain linking to YouTube.com.

Open-ended questions provided the feedback that the convenience of having the course available to them online to go over at their own pace was a motivating factor to doing the module. Donavant (2007) found similar results in his study relating to motivating factors in online learning.

Based on feedback from the questionnaire, the module was modified to fix grammatical errors missed during the one-on-one sessions. The survey questions were also adjusted to include fewer true/false questions. The questions were also be redesigned to reword the questions where all participants scored 100% on the pre survey as well as the questions that were worded awkwardly. Design of the paper-based surveys was redone with online questionnaires to simplify scoring based on the finding that all participants were familiar with computers and using the Internet in some way.



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