Vision therapy revealed: A guide to select vision therapy procedures

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Vision therapy revealed: A guide to select vision therapy procedures

Abstract
Purpose: This project consists of video presentations of several vision therapy techniques. The purpose of this project is two-fold. First, we would like to provide optometric interns with an example of how vision therapy procedures should be performed when working with vision therapy patients. The second purpose of this project is to provide vision therapy patients with video samples of techniques being performed. It is hoped that vision therapy home compliance rates will be increased by using the video presentation as an adjunct to home therapy.

Methods: Vision therapy experts were surveyed and several vision therapy techniques were chosen to be included in this project. After researching a variety of techniques, select vision therapy procedures were scripted, filmed, and edited into cohesive video presentations. Optometry students were used as actors. The videos were created using a digital video camera and digital video editing software.

Results: The therapy procedure videos have been assembled into two DVD collections, to be used in the education of optometric interns and for vision therapy patients to reference from home, should questions arise during home vision therapy. This section also includes a discussion of problems encountered throughout the film making process.

Discussion: This project will provide student optometric interns with a practical resource outlining how various vision therapy techniques are to be performed and utilized in a clinical setting. It will also be used in vision therapy clinic as a guide to patients during home vision therapy.

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Thesis

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VISION THERAPY REVEALED:
A GUIDE TO SELECT VISION THERAPY PROCEDURES

By

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JANA L. MOUNTS
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A thesis submitted to the faculty of the
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Advisors:

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Biographies

John Hardy was born November 10, 1973, the fourth of six children, in Grand Junction Colorado. After completing high school he served a two year mission in the Texas Houston East Mission for the Church of Jesus Christ of Latter-Day Saints. He graduated from Messa State College with a B.S. in biology and a minor in Chemistry. John is currently completing an optometry degree at Pacific University.

Jana Mounts, an Oregon native, received her B.A. in Social Science from Western Oregon State College in 1996. After working in the insurance industry during the interim, she returned to school to pursue a degree in optometry. Jana’s optometric interests lie in the areas of vision therapy and pediatrics. Jana spends her extra time enjoying bicycling, yoga, water sports, the theater, and time spent with her husband, Murry. She is in the process of completing degrees in optometry and education at Pacific University.
Born in Miles City, Montana in 1976, Jace Picken and his family lived in several locations in the rural landscape of eastern Montana and western North Dakota. Most of his formative years were spent in Dickinson, North Dakota where he attended elementary, middle, high school and undergraduate-university within a ten-city block area. He was active in all variety of extracurricular activities including athletics, music, speech, drama and student government. In particular, his theatrical ventures continued at Dickinson State University where he landed roles in many university and community theatrical and musical productions. Jace has a wife, Angela, and a son, Weston, and is proud of his academic accomplishments in this final stage of his optometric education.

Greg Smith received a B.S. in Medical Imaging in 1997 from Oregon Institute of Technology. Greg is interested in pediatrics, behavioral optometry, and the practice of primary care optometry in rural America. Beyond optometric interests, he takes time for a wife and young daughter and works full time as a radiologic technologist and CT technologist.
Abstract

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KEY WORDS: Vision Therapy, Hart Chart, Brock String, Lifesaver Card, Three Barrel Card, Pencil Pushups, Sensitivity Training, Marsden Ball, iMovie, iDVD
Introduction

This thesis project consists of video demonstrations of vision therapy techniques for both optometric interns and vision therapy patients. The following vision therapy procedures are included in the final project:

- Marsden Ball
- Hart Chart
- Lifesaver Card
- Brock String
- Three-Barrel Card
- Split Pupil Rock
- Sensitivity Training
- Pencil Pushups

Each of these therapy techniques has been outlined for optometric interns. Several have also been adapted for use with vision therapy patients. The videos have been compiled onto compact discs and digital video discs.
Purpose of Project

Vision therapy patients occasionally misinterpret how therapy methods are prescribed for home therapy. This confusion becomes a roadblock to therapy progress, because patients may either practice a technique incorrectly, or may not attempt ambiguous home therapy techniques. In addition, novice optometric interns may not understand exactly how to administer certain vision therapy procedures.

A goal of this project is to remedy these problems by producing video demonstration examples of vision therapy techniques. We feel video demonstrations of vision therapy techniques, accessible to optometric interns and to vision therapy patients, can help potentiate therapy success. It will also serve as a means of educating optometric interns about the various vision therapy techniques that are available, and the correct ways to perform these techniques.

The ultimate goals of this project are to increase home therapy compliance rates, and to provide optometric interns with answers to questions they may have while learning to conduct vision therapy procedures.
**Methods**

Several experts in the field of Vision Therapy were consulted as to their top three choices of vision therapy techniques. From this list of procedures, nine were chosen to be filmed for this project. These procedures included: Brock String, Hart Chart, Lifesaver Card, Marsden Ball, Pencil Pushups, Three-Barrel Card, Split Pupil Rock, Squinchels, and Sensitivity Training.

Each vision therapy procedure and its variations was researched using textbooks and vision therapy procedure manuals.¹⁷ The procedures for optometric interns were each mapped out in a story board sequence, which included camera perspective, ideas for visual effects during filming, and dialogue or sound information. Once storyboarding was completed, filming of each procedure began.

Filming primarily took place in the Vision Therapy Service at the Pacific University College of Optometry in Forest Grove, Oregon. A Sony DRC-TRV 730 Digital8 Handycam video camera was used. Initially, an external microphone was considered. However, it became obvious that the sound quality was clearer using the internal camera microphone. Therefore, the
camera microphone was used for most of the filming process. The thesis authors served as actors, narrator, director, editor, and camera crew.

Once filming was completed, editing took place. Video and audio clips were downloaded onto iMovie™ using a Macintosh G4 computer. iMovie™ was used to edit the video clips into cohesive videos. Very little sound editing was necessary for editing the videos meant for interns. Dialogue was filmed initially with the video clips. It was, however, necessary to insert several computer generated graphics into the videos to help illustrate the visual perceptual phenomenon effect of some of the techniques. The graphical demonstrations were made using 3D Canvas™ version 6.0, a freeware real-time 3D modeling and animation tool.

The editing of videos for patients became a much more labor intensive process. Many of the same video clips were used for both patient and intern videos. They were further edited down in the patient videos to eliminated technical information meant for interns only. In addition, patient videos required less optometric technical jargon, so the sound from the videos meant for interns had to be completely cut and new language had to be inserted.
The finished videos were then compiled into a DVD format using iDVD™
version 3.0.1 and a Macintosh G5 computer. This project was divided into
two portions. Videos for patients were filed in one DVD project, and videos
for interns were stored in another project. The intern “education” project
also included all of the video footage that was used in the patient videos.
The “intern education” DVD was divided into five chapters based upon the
type of VT procedure.
Results

See enclosed DVD

Problems Encountered

The greatest obstacle encountered during this project was availability of computer hardware and compatible software resources. The only computers available on our campus capable of creating videos were found in the Education Department. Gaining access to these computers was not a problem. However, silence was necessary during portions of our sound editing. The available environment was not optimal in the noisy computer lab, which is open to other computer users.

Gaining access to computers capable of generating DVDs proved to be even more of a challenge. It was not possible to transfer the videos from iMovie™ to iDVD™ using the G4 computer due to software version incompatibility issues. Access to a new Macintosh G5 was obtained, after much lobbying. This computer contained compatible versions of iMovie™ (version 3.0.3) and iDVD™ (version 3.0.1) enabling successful compilation of the DVDs.

These hardware and software compatibility issues were unforeseen at the outset of this project. It is doubtful whether anyone would have guessed that
the iMovie™ and iDVD™ versions on the same computer would prove to be incompatible with one another.

Re-filming and additional editing was required once the project was presented to the thesis advisor. It would have been prudent to get feedback about the procedures outlined once the storyboarding process was completed, prior to filming. This would have saved time and energy, as re-filming and subsequent editing probably would not have been necessary.
Discussion

Users should remember that out of the plethora of vision therapy techniques available, only a few are included in this project. The techniques outlined in this project are, however, commonly prescribed for home therapy.

It is hoped that future optometric interns and vision therapy patients will find much use for this project. This video compilation is, first and foremost, an educational resource for optometric interns. However, it also has the potential to be a great boost to home vision therapy practice. No longer will patients be able to say that they could not remember how to perform a vision therapy homework task. Vision therapy procedures are clearly outlined for patients in video format, accessible from any home via DVD or CD. Hopefully, this project will increase home therapy compliance rates and provide optometric interns with a good resource to consult when learning about vision therapy techniques.
Acknowledgments

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