

# TRAINING VISUAL REHABILITATION ASSISTANTS THROUGH FLASH

## 2005 COMPUTERWORLD HONORS CASE STUDY

### GOVERNMENT & NON-PROFIT ORGANIZATIONS

COMPATIBLE WITH SCREEN-READER SOFTWARE AND DESIGNED WITH STUDENTS WHO MAY HAVE IMPAIRED VISION OR HEARING, LOW READING LEVELS OR LOW COMPUTER LITERACY LEVELS, FLEX VRA, LIGHTHOUSE INTERNATIONAL'S UNIQUE ONLINE AND MENTORED TRAINING PROGRAM, OPENS A WORLD OF NEW CAREER PATHS FOR PARAPROFESSIONALS FROM DISADVANTAGED BACKGROUNDS OR WITH HANDICAPS. [20055213]

### SUMMARY

Lighthouse International designed and developed "Flex VRA", a unique online and mentored training program developed with Flash MX to teach skills to meet the worldwide demand for trained assistants (paraprofessionals) who can help provide specialized services to the growing number of older adults with vision loss. Compatible with screen reader software and designed with students who may have impaired vision or hearing, low reading levels or low computer literacy levels in mind, Flex VRA (Flexible Vision Rehabilitation Assistant) training opens a new career path for paraprofessionals from disadvantaged backgrounds or with handicaps.

### APPLICATION

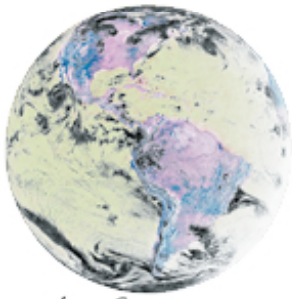
Lighthouse International, a not-for-profit vision rehabilitation organization headquartered in NYC, has a 100-year history of working creatively to address issues of vision loss and vision rehabilitation worldwide. One such issue – the critical shortage of trained people to provide skills training for adults with vision loss – came to the fore in 1996 when a face to face training course for assistants was started at the Lighthouse. Well aware of the growing need for vision rehabilitation services as the elderly population of the United States and other nations increases dramatically, Lighthouse International sought to create a way to train assistants to extend the reach of vision rehabilitation professionals, working under professionals' supervision. In addition to its intrinsic value, we realized that this course could be a way for people on public assistance to learn skills that would help them to enter the workforce. We also knew that we wanted to encourage people with vision loss to enroll. The product of collaborative work of vision rehabilitation agencies, governmental organizations, community organizations and institutions of higher learning in New York, the course was approved as a welfare-to-work program. Through the face-to-face course, 56 people were enrolled over time; 14% on welfare and 9% with vision loss. Of those who successfully completed their training as Vision Rehabilitation Assistants, 74% went on to gainful employment in vision rehabilitation.

However, despite its success a number of issues were apparent whenever the 8-month face-to-face course was given: (1) people who lived beyond the geographic area convenient for commuting could not avail themselves of the course, and (2) attrition was high (39%), with many paraprofessionals who began the course unable to finish because of childcare and/or eldercare demands or the need to work during training. As a result, an online and mentored alternative was conceived, called Flex VRA.

Two main challenges faced the Flex VRA development team: creating engaging courseware that adequately depicted vision rehabilitation techniques, and insuring that the courseware would be completely accessible to visually impaired paraprofessionals and their mentors. We added to those the goal of creating material at a 4th to 5th grade reading level and keeping in mind the low computer literacy of potential students.

Macromedia Flash MX was selected as the technical platform because of its high degree of flexibility in both the development and delivery of the Flex VRA lessons. Our use of Flash MX ensured efficient delivery of the animated course content over the web, allowed us to produce highly interactive courses that were fun and held the interest of the students, and also ensured that every lesson we created would be as usable for students with disabilities as it was for those without. It also allowed us to incorporate text-to-speech technology directly into the courses so that every lesson is automatically narrated, further increasing its degree of usability and interest for the students.

The first-ever Flex VRA course was beta tested in 2003-4 with a group of geographically dispersed students, widely diverse in age, mentor organization size, socio-economic background, computer skills and visual abilities. In comparison with prior face to face courses, Flex VRA results were stunning: a 90% course



*A Search for New Stories*



Robert Carrigan,  
Chairman of the Chairmen's Committee

Ron Milton,  
Vice-Chairman of the Chairmen's Committee

Dan Morrow,  
Chief Historian

completion rate and seamless access for visually impaired users (30% of the class) and those with low vision and other learning issues who preferred to hear text rather than read it. The course is now an online offering through Lighthouse International's Continuing Education program. Flex VRA has utilized the power of Flash MX to create a new career path in vision rehabilitation for people from diverse backgrounds, bringing needed vision rehabilitation services to adults with vision loss.

## **BENEFITS**

Flex VRA has brought about many advantages and opportunities. As the first and only online and mentored course of its kind, Flex VRA:

- Provides a 38-lesson, standardized curriculum on demand for paraprofessional training in vision rehabilitation
- Is accessible to visually impaired and hearing impaired users, those with low literacy and low computer literacy
- Makes use of a templated design and is compatible with screen reader software
- Solves problems that caused attrition in face to face courses, because students can take the course in their own timeframe
- Does not require special software to run the courseware
- Allows organizations to train paraprofessionals at a much lower cost than on-the-job training. By presenting course content online and reserving the time of the mentor for role play, observation and supervised work with visually impaired adults, Flex VRA is cost effective for vision rehabilitation organizations.
- Saves vision rehabilitation organizations money by allowing them to maximize the time and efficiency of higher-paid vision rehabilitation professionals as they integrate less costly but well-trained paraprofessionals onto their vision rehabilitation team. Ultimately, organizations can handle more clients using this model of service delivery.
- Gives mentors two chances to gain the CE credit that is important for their re-certification as professionals: credit for resource lessons and credit for supervising a VRA student.
- Reduces training time and makes learning more efficient by allowing students to practice skills while they learn content.

Students and mentors from the beta test group had this to say about Flex VRA:

"It was so much easier to access training from the computer; tests were great and having a supervisor on-site was great." (Student)

"Flex VRA helped prepare me for, and reinforce, the areas that I needed to work on so that I could work with a client more professionally." (Student)

"Flex VRA is cost-effective. The student can learn from home, doesn't have to expend travel time and has time-of-day flexibility, so it's also time-effective." (Mentor)

"I found the program to be comprehensive and informative, and a good training tool." (Mentor)

## **IMPORTANCE**

The aging of the population worldwide is resulting in an unprecedented global increase in age-related vision loss. According to the World Health Organization, there are 37 million blind people in the world and 124 million who are visually impaired. By the year 2020, these numbers will increase exponentially. The techniques exist to teach adults to remain safe and independent in their homes and communities despite vision loss but there are simply not enough professionals in vision rehabilitation to handle the burgeoning demand. Adding trained assistants to the vision rehabilitation team is an effective, efficient way to expand the scope of services that can be offered and to increase the number of people with impaired vision who can receive help.

By using information technology (Flash MX) to make unique, interactive content available online, Flex VRA provides a replicable way to deliver training and does so in a way that encourages use by paraprofessionals with low literacy and low computer literacy, as well as those who themselves have impaired vision or hearing loss. Flex VRA also provides visually impaired or sighted mentors with mentor resource modules designed to supplement their knowledge as they support their VRA students through the course. Mentor lessons have been found to be credit-worthy by the Academy for Certification of Vision Rehabilitation and Education Professionals, so mentors can earn credit for completing them, as well as credit towards their own professional recertification for supervising a VRA student.

The creation of an extensive, computer-based course encourages vision rehabilitation organizations to train their paraprofessionals because it is more cost effective than taking the time of a professional to provide on-

the-job training. It could take a professional nearly 400 hours to provide training in the many areas that Flex VRA lessons teach. It's a win-win situation for the VRA student, the mentor, the vision rehabilitation organization and ultimately the older adult with vision loss.

The technology created to develop and deliver Flex VRA has many implications for development of future courses that are accessible and interactive. Flex VRA paves the way for Lighthouse International to utilize the courseware, methodology and course delivery platform to develop future online training modules for professional development of mentors and other vision and health care professionals, as well.

## **ORIGINALITY**

Simply stated, there is nothing else like Flex VRA. It is the first and only program of its kind on many levels:

- Flex VRA is the only standardized training course for paraprofessionals in vision rehabilitation;
- Flex VRA provides the only multi-skilled training in existence in assisting in Rehabilitation Teaching, Orientation & Mobility, Low Vision and team skills;
- Flex VRA is the only computer-based paraprofessional training that answers users' on-demand, asynchronous needs to reduce attrition;
- Flex VRA is the only computer-based course for paraprofessionals that is specifically designed to maximize visibility for users with low vision and to be screen reader friendly for more profoundly visually impaired users;
- The template-driven lesson builder in Flex VRA uses low bandwidth vector graphics and a text-to-speech engine that immediately converts authored text to speech, giving users with disabilities or those with different learning styles equal access to course material.

Flex VRA grew from an identified need -- the serious and growing personnel shortages in the field of vision rehabilitation. Its originality stems from its accessibility and seamlessness for users with vision or hearing loss; from its learning approach, which combines asynchronous, interactive online content with onsite mentoring; from the broad audience it was designed to welcome, including users from disadvantaged backgrounds with low literacy and limited computer experience; and from the skill-based subject matter it teaches.

## **SUCCESS**

Since its first face-to-face course, Lighthouse International's paraprofessional training has been responsible for adding 43 assistants to the workforce in the New York area. The innovative Flex VRA course has used IT to take a face-to-face course in which dropout rates were as high as 60% and has reduced the dropout rate to 10%. It has given paraprofessionals with no background in vision impairment an easily understandable curriculum in an interactive, challenging and engaging format. It has enabled people with disabilities to have an equal chance to become Vision Rehabilitation Assistants and to begin a career path in vision rehabilitation. Flex VRA has significantly reduced teaching time and cost for the professional and costs to the vision rehabilitation agency to support training of its paraprofessionals. The variation seen in the number of times that individual students in the beta class reviewed specific lessons on their own also shows that this computer-based alternative provides students with a way to learn at their own pace and to effectively master material before moving on. Mentors have been enthusiastic about their involvement in the implementation of Flex VRA and the skill levels attained by their students.

CEOs of two of the vision rehabilitation organizations that hosted VRA students during beta testing of Flex VRA had this to say at the beta group's "virtual" graduation:

"We are thrilled to have two qualified VRAs and...one is going on for professional status through your Rehabilitation Teaching program. We are indeed fortunate to have the Lighthouse stepping up to the place to prepare qualified people in vision rehabilitation."

"Thank you for making this possible. We are tickled that we have been able to take advantage of the program. Better services and more independence for blind people! Congratulations on Flex VRA!"

Future plans include making Flex VRA available in Spanish and increasing the number of mentor resource lessons.

## **DIFFICULTY**

The greatest difficulties in this project were (1) designing equal access for visually impaired, hearing impaired and sighted users, (2) creating an interactive, engaging and comprehensible set of lessons that would accurately teach techniques, (3) creating a learning management system to meet the unique needs of the project, and (4) providing adequate support for mentors. Through a very creative collaboration among project staff in the

Lighthouse's IT Department and its Center for Education, the instructional designers and content experts each brought their unique skills to this task, resulting in the compelling, effective and ground-breaking Flex VRA course. Also, significant external funding was needed in order to be able to support the development of Flex VRA. Lighthouse International is grateful to The New York Community Trust, the Allene Reuss Memorial Trust, the Lavelle Fund for the Blind and NEC Foundation of America for supporting this project, as well as to the vision rehabilitation organizations that have participated.