

HFI Certification—Fulfilling the Needs of the Practitioner

White paper

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About the author

■ **PHIL H. GODDARD, PH.D.**, has over twelve years experience in the application of scientifically-based human factors principles to the creation of usable computer software applications. He has worked as a consultant/software developer with National Institutes of Health, Department of Defense, and served in faculty positions in the Department of Human Development at the University of Maryland, College Park.

As HFI's Chief of Training, Phil is responsible for the ongoing research and development of HFI's suite of usability seminars, and for training the HFI directors who teach them. He was also instrumental in the development of HFI's certification program for training practitioners to be Certified Usability Analysts.

Phil has a wide range of design experience including: state-of-the-art systems for deception detection (Department of Defense), financial Web sites and applications (FedEx, Norwest Bank, Cap Group, TD Financial Group), consumer-based applications (Hewlett-Packard), and medical applications for laboratories and data management (Beckman-Coulter, Guidant). He also conducts public and on-site courses for software developers in usable Web and GUI design.

Phil has presented papers and published various articles on human factors principles.

Introduction

Almost eight years ago I started at HFI. In that time, I've designed hundreds of software and Web interfaces and delivered training on all facets of interface design around the world.

Along with you, I've watched the explosion of the Internet, Intranets, and Extranets as critical business tools. I've also watched the discipline of interface design change and all who practice user-centered design move to adapt and redefine themselves. My success in large part has been due to applying a unique form of user-centered design that I learned from Dr. Eric Schaffer, our CEO at HFI. I learned it by taking his courses and applying what I learned in the real world. I now have the responsibility of keeping these courses current and effective to meet your needs.

Our training courses are the repository of our knowledge and experience. We teach what we do. In fact, all new employees begin by attending our courses; it's the easiest way to train them quickly on The Schaffer Method™ of user-centered design.

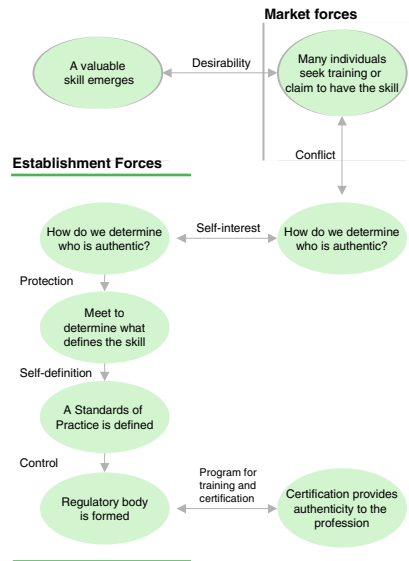
Recently, a high percentage of course participants have requested that we offer a credential to show that they have completed our training. That demand inspired us to consider offering a certification program. After careful thought and planning we are happy to announce that this possibility is now a real opportunity for you through our Certified Usability Analyst™ (CUA) program.

What is certification?

“To certify” means to attest authoritatively, or to attest as being true, or to represent as meeting a standard (www.m-w.com).

Certification in any field or profession has basic forces that shape it. The following diagram outlines the process:

What is certification?



1. A valuable skill or service emerges that has great market value
2. Many claim or aspire to have the skill. The marketplace seeks the skill but doesn't know how to authenticate those who claim to have it
3. Those who claim to have it form a loose establishment
4. A process of self-definition occurs to determine what it is they have
5. A “Standards of Practice” is created that defines the unique competencies and how to assess them
6. A regulatory body is formed to maintain the skill, its growth, and a means for authentication
7. The marketplace determines the value of the authoritative body and its process

What certification programs are available?

There are two traditional types of certification: product- and discipline-based.

Product certification examples include Cisco and Microsoft. Students train and test on a specific software product or service (e.g., network

administration), and seek employment with companies implementing that product or service.

For the discipline of Human Factors, the Board of Certification in Professional Ergonomics awards a Certified Professional Ergonomist (CPE) credential for general expertise in ergonomics. The CPE program requires a masters degree in ergonomics or human factors, four years of full-time professional practice, a work product review by members of the organization, and the passing of an on-site examination.

A newer alternative is an institutional degree. Institutional credentialing (accreditation) in human factors is growing as the number of quality programs increase in the universities. Students gain the experience of university faculty who train and test them, which combined with the reputation of the university program, will give them a level of competency for placement in the field.

What programs are available?

| Certification Programs | Scope | Examples |
|--|--|--|
| Software products and services | Product focus | Network administration |
| Human Factors and Ergonomics Society's Certified Professional Ergonomist (CPE) | Broad focus on range of ergonomic areas | Aviation, transportation |
| Graduate programs in Human Factors and related fields | Broad training based on faculty expertise and experience | Industrial engineering, human-computer interaction |

How do the programs meet the needs of the Web developer?

Our experience and the experience of our colleagues suggests that there is a significant gap between what is needed in the field and what is offered through these existing programs.

Firstly, product certification appropriately focuses narrowly on configuring and employing a particular product. A Web developer needs the design skills to create usable Web interfaces for custom sites and applications.

Secondly, CPE certification covers a broad range of ergonomic areas without special focus on software. A Web developer needs enough depth in the areas of Web design or software interactivity to succeed in the corporate environment.

Thirdly, a formal degree program provides extensive coverage of historical, theoretical, and philosophical topics. A Web developer needs training that is in touch with what is happening in their corporate environment and delivers quick results in the real world.

The need for certification for a Web developer is real. The Usability Professionals Association (UPA) is in the process of reviewing the feasibility of creating a non-profit organization for the purposes of credentialing. Limited details are available but it appears the core competencies will be defined by ISO 13407, (see www.usabilitynews.com). What is the implication?

Current programs lack relevance

| Certification Programs | Scope | Relevance to the practicing Web developer |
|--|---|--|
| Software products and services | Product focus | Technology orientation not applicable to interface designers |
| Human Factors and Ergonomics Society's Certified Professional Ergonomist (CPE) | Broad focus on range of ergonomic areas | The broader focus missing some of the depth critical for Web interface design |
| Graduate programs in Human Factors and related fields | Extensive coverage of historical, theoretical, and philosophical topics | Depends if training is in touch with what's happening in a corporate environment |

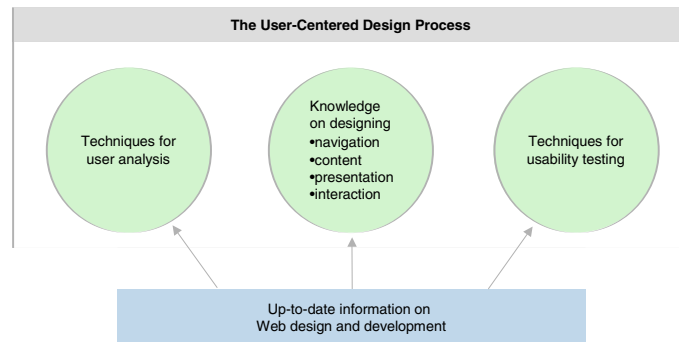
What does the Web developer need?

The ideal certification program for the Web developer would have three basic elements:

1. A clear process for Web development to effectively manage and design Web sites and applications
2. The most up-to-date knowledge for the Web developer to make the best design decisions
3. The latest techniques and tools for creating, designing and testing Web sites and applications to meet users' needs

What does the Web developer need

- 1) **Process** – to effectively manage design and development
- 2) **Up-to-date knowledge** – to make the best design and development decisions
- 3) **Technique** – to create, design, and test your interfaces to meet users needs



This knowledge should come from an established organization with real-world experience and a track record of success in user-centered design.

The HFI-Certified Usability Analyst (CUA) program—fulfilling the need of the time

The practitioner's urgent need for effective and respected skills in Web design and development is met by HFI's Certified Usability Analyst™ program. The Schaffer Method of user-centered design, time-tested by a long-established group of technical staff, is at the core of our training and certification program. The success of the practitioner in the field, in our opinion, is dependent on being well versed in a broad range of content areas and methods with a focus on Web development.

An HFI-Certified Usability Analyst has an understanding of the fundamental principles of user-centered design and the core areas of interface design, information architecture, instructional design, graphics, and usability testing.

The four content and methods areas at the basis of certification should provide:

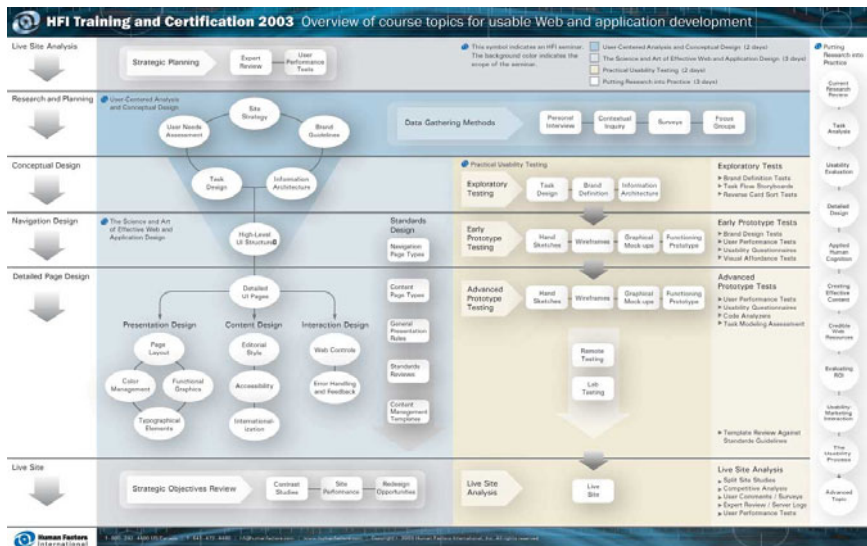
1. Methods for gathering requirements from users and translating those requirements into conceptual designs that fit user expectations and business objectives
2. The latest knowledge on designing Web interfaces that optimize navigation, deliver useful and usable content, provide compelling and comprehensible presentations, and support user interactivity and productivity

3. Techniques for assessing design usability and usefulness at every stage of development including early prototypes, advanced prototypes, and live sites
4. In depth coverage of the latest research on Web development, methodology, technology, and tools that aid in the design of effective Web sites.

The content areas of our CUA program

These critical areas are the focus of the courses in the certification program based on The Schaffer Method of Web development.

1. User-centered Analysis and Conceptual Design (3 days)
2. The Science and Art of Effective Web and Application Design (3 days)
3. Practical Usability Testing (2 days)
4. Putting Research into Practice (2 days)



This diagram provides an overview of the content and method areas of our certification training program. It is organized around The Schaffer Method—our Standards of Practice as applied to Web and application development. See pg. 13 for a full-page image. The details for each course depicted in the diagram are described below.

User-Centered Analysis and Conceptual Design (3 days)

This course covers the value of user and systems analysis, profiling users and usage environments, branding and business objectives, direct and indirect data gathering methods, survey design, task analysis, scenario development, information architecture, and setting usability objectives. The course teaches students how to synthesize the analysis into a foundation for navigation design.

The Science and Art of Effective Web and Application Design (3 days)

This course provides a strong framework for the user-centered design

method as applied to Web and application development. It outlines basic and hybrid navigation models and reviews the major areas of detailed page design including presentation design (page layout, color management, functional graphics, and typographical elements), content design (editorial style, accessibility, and internationalization), and interaction design (Web controls, error handling, and feedback).

Practical Usability Testing (2 days)

Within the user-centered design process, this course outlines the critical feedback points of design and which test to use to target that stage of design. The course includes hands-on and computer-based exercises using paper prototypes, advanced Web-based prototypes, and moderated and unmoderated remote testing tools. Real world case studies illuminate subtle issues that make or break an effective test strategy and a scenario-based fifteen point usability test checklist provides a framework for scoping and delivering an effective test plan.

Putting Research into Practice (2 days)

Our chief research scientist, Dr. Kath Straub, creates this annually updated course. Each year, Dr. Straub reviews conference proceedings, journal articles, and published reports to find the studies important to Web design. After narrowing the papers down, she prepares a lively forum for review and discussion. This course distills the essence of several key conferences, allowing the practitioner to keep current on best practices in usability.

The CUA Certification Exam

The exam is offered to anyone and tests the participants on the core knowledge areas that are essential for Web development. The test is offered online in a timed session lasting 2.5 hours and is offered four times per year within a 24-hour time window.

A registration fee is required (\$150.00 USD for course participants; \$650.00 USD for non-course participants). The fee is good for two test trials; a second attempt is permitted within a six-month time window without additional exam fees.

Upon taking the exam, results are issued that outline, by content area, the registrant's scores and the required passing score for each section.

Registrants that receive a passing score receive a certificate and have the option of being posted on our Web site as a certified usability analyst. Registrants that do not pass the exam can take the exam again. The results are intended to help direct those individuals to the content areas that they will need to study in greater detail.

See sample results on next page.

Certification Exam Results for Registrant: John Doe
Test Date: April 9, 2002

User-Centered Analysis and Conceptual Design

| Section | Title | Maximum Score | Your Score |
|---------|------------------------------|---------------|------------|
| 1. | Strategy for Analysis | 4 | 4 |
| 2. | User / Environment Profiling | 4 | 4 |
| 3. | Data Gathering Methods | 5 | 3 |
| 4. | Task Analysis and Design | 4 | 3 |
| 5. | Scenario Development | 4 | 3 |
| 6. | Information Architecture | 5 | 4 |
| 7. | Usability Specifications | 4 | 3 |
| | | 30 | 24 |

The Science and Art of Effective Web and Application Design

| Section | Title | Maximum Score | Your Score |
|---------|-----------------------------------|---------------|------------|
| 1. | Strategy for User-Centered Design | 4 | 4 |
| 2. | Navigation Design | 5 | 5 |
| 3. | Editorial Style | 5 | 5 |
| 4. | Accessibility | 4 | 3 |
| 5. | Internationalization | 4 | 3 |
| 6. | Layout | 5 | 4 |
| 7. | Color Management | 4 | 3 |
| 8. | Functional Graphics | 5 | 3 |
| 9. | Typography | 5 | 4 |
| 10. | Web Controls and Error Handling | 4 | 4 |
| | | 45 | 38 |

Practical Usability Testing

| Section | Title | Maximum Score | Your Score |
|---------|----------------------------------|---------------|------------|
| 1. | Strategy for Testing | 4 | 4 |
| 2. | Exploratory Testing | 4 | 4 |
| 3. | Early Prototype Testing | 5 | 5 |
| 4. | Advanced Prototype Testing | 5 | 5 |
| 5. | Remote Testing | 4 | 1 |
| 6. | Live-Site Analysis | 4 | 2 |
| 7. | Test Planning and Implementation | 4 | 2 |
| | | 30 | 23 |

Putting Research into Practice

| Section | Title | Maximum Score | Your Score |
|---------|------------------------------|---------------|------------|
| 1. | General Design | 5 | 4 |
| 2. | Displays | 5 | 3 |
| 3. | Interaction Issues | 5 | 3 |
| 4. | Research Review of Last Year | 5 | 4 |
| 5. | Web Issues | 5 | 5 |
| 6. | PDA's | 5 | 2 |
| 7. | Usability Testing | 5 | 3 |
| 8. | Facilitation | 5 | 2 |
| 9. | Users | 5 | 3 |
| | | 45 | 29 |

Your Total

| Section | Title | Maximum Score | Your Score |
|---------|--------------------------------|---------------|------------|
| 1. | User-Centered Analysis | 30 | 24 |
| 2. | Web Design | 45 | 38 |
| 3. | Usability Testing | 30 | 23 |
| 5. | Putting Research into Practice | 45 | 29 |
| | | 150 | 114 |

Your score of 114 out of 150 is not sufficient to receive certification.

It appears that two main areas are responsible:
 1) Usability testing: remote testing, live-site analysis, test planning
 2) User Interface Research: displays, interaction issues, PDA's, usability testing, facilitation, users

Please study these areas and consult our course offering for training in these areas.

Developing the exam—validation and verification

HFI conducted testing to ensure the content validity of the certification exam.

- Initial testing was conducted with samples of HFI-trained instructors and untrained college students. This identified questions that did not discriminate or reflect the skill set of our target audience.
- Additional testing included samples from our technical staff who were not instructors, as well as students currently taking our courses, and students enrolled in degree programs related to interactive design.
- Our final testing included experienced professionals not associated with HFI, as well as students who have completed HFI's training program.

This validation process ensures that we are offering an exam that tests the knowledge that is required to perform successfully as a usability specialist, adhering to scientifically-founded usability precepts.

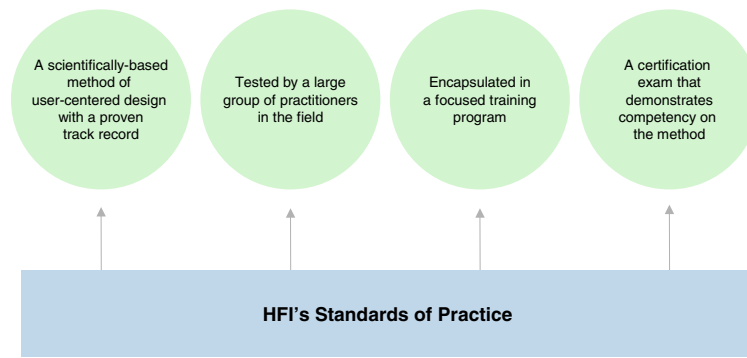
HFI's Standards of Practice is our foundation for credibility

HFI is in a unique position to offer a certification program. Our credibility rests on a time-tested Standards of Practice. The success of our program depends on the following four strengths:

1. A scientifically-based method of user-centered design with a proven track record
2. A Web development process that has been tested by a large group of practitioners in the field
3. A training program that encapsulates the experience and latest research in the field of Web design and development
4. A certification exam that demonstrates competency in user-centered design process, Web design, and usability evaluation

Why HFI?

The credibility of HFI's CUA program rests on HFI's Standards of Practice



Our goal and commitment

There are many interface design firms to choose from, but few who have successfully trained designers and developers on user-centered design practice and methodology as long as HFI. The value of our certification program is a direct function of the worth it offers in practice.

According to the International Board of Standards for Training, Performance and Instruction (IBSTPI; www.ibstpi.org), the outcomes of professional certification include:

1. The ability to identify those who have demonstrated competency
2. Promotion of ongoing professional competency

A successful certification program can enhance the reputation and positive public image of a profession. HFI, by providing a Standards for Practice that has been developed from 20 years of success in the field, is committed to leading the way.

We have a long-term commitment to continuously upgrade the knowledge, skill and performance of our certified professionals and make this knowledge publicly available to maintain confidence in the members our profession.

