230 Tips and Tricks for Better Usability Testing

By Rolf Molich with a Foreword by Jakob Nielsen

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Foreword

Learning the basics of user testing is easy: We have a three-day "learning-by-doing" workshop[1] that teaches user testing by taking a team through a complete test of their design in that three-day period. Going from the basics to knowing everything about user testing is considerably harder, but luckily the methodology is so robust that you can get good results from even a very simple test.

The goal of this report is not to teach the basics of user testing; rather the report assumes that the reader is already familiar with the basics. The goal of the report is to increase the effectiveness of experienced usability professionals.

You may know several of the tips in this report, but you probably don't know *all* of them. Nobody is perfect, but we can all improve. That's the basic philosophy that made me decide to publish this report more widely than its original status as a handout for the tutorial on "Advanced Usability Testing Methodology" at Nielsen Norman Group's *User Experience World Tour*.

It was clear from the *User Experience World Tour* that there is a great interest all over the world in finding ways of improving the outcome of user testing. We visited New York, Chicago, Austin, San Francisco, Seattle, London, Munich, Stockholm, Tokyo, Hong Kong, and Sydney. The tutorial on Advanced Usability Testing Methodology was one of the best-attended events of the conference. It was gratifying to experience the uptake of usability methodology around the world and to see that there now are enough experienced usability professionals to allow us to think about how to make usability more effective.

For the last twenty years, we have had to spend an inordinate amount of time on the very first step of getting companies to include *any* usability activities in their development process. We still need to evangelize this basic concept because most companies are ignorant of usability and design based on the phase of the moon (or the designers' first intuition about what users might need). Better companies have progressed up the usability maturity curve, however, and are now at the stage where they need to reflect on their own methodology and find ways of improving it.

I recommend allocating a few percent of a company's usability resources to activities that do not do anything directly for the bottom line but simply improve the effectiveness of the work you perform the rest of the time. Reading this report is an example of an activity that will help increase the return on investment of all the tests you conduct. Methodology improvements can bring huge gains for a relatively small effort. Let's say that one of the tips results in making your user tests 1% more effective. In an organization with ten usability professionals, a 1% improvement corresponds to more than twenty person-days per year — the same as hiring an external contractor for a month.

This report contains 230 tips. Not all of them will apply to all organizations. Find the ones that work for you, and I would not be surprised if you end up improving the effectiveness of your usability group by a good deal more than 1%.

<div align="right">Jakob Nielsen</div>

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[1] See http://www.nngroup.com/services/workshops/learnbydoing.html

Introduction

This report describes a number of tips and tricks that I have come across during many years of practical usability testing. I have discovered most of these tips the hard way: By making mistakes that test participants, mentors or observers have politely told me about. Other tips have come from watching usability professionals or hearing them talk about their testing practices. Still others come from the great Web discussion fora, for example CHI–WEB.

This report is intended for people who have already conducted usability tests. People who are inexperienced with usability testing should read one of the excellent textbooks listed in the *References* section.

There are many great books that describe how usability testing fits into the more general area of usability engineering, for example [3].

The main criteria for including a tip in this collection are:

- The tip is not included in any of the above textbooks.

- The tip is included and it is important, but experience shows that it is often disregarded by usability professionals.

Some of the tips explicitly refer to websites. However, almost all of the tips apply equally well for testing software or consumer electronics.

The current version of this report contains 230 tips. I have picked what I consider the top ten tips from the report and highlighted them, so that a skimmer of the report will get the most important ideas.

CREDITS

I want to acknowledge the following usability professionals for their excellent contributions and constructive criticism of earlier versions of this document.

Chauncey Wilson <Chaunsee@aol.com>, in particular for tips 100, 101 and 113, and for large parts of the sections *Testing with Experienced Users* and *Hiring a Usability Professional*. Chauncey has also reviewed several versions of the document extensively.

Marie Tahir <Tahir@nngroup.com>, in particular for important additions and clarifications to the section *Communicating Test Results*.

Carolyn Snyder <Snyder3961@mediaone.net> for tip 77. Carolyn has also reviewed earlier versions of the document extensively.

Kara Pernice Coyne <Kara@nngroup.com>.

Caroline Jarrett <Caroline.Jarrett@effortmark.co.uk>.

The CUE teams for sharing their ideas about how to conduct a good usability tests with the rest of the world.

- CUE means Comparative Usability Evaluation. In the CUE–1 study, four teams each usability tested the same Windows calendar program. In the CUE–2 study, nine teams similarly usability tested the same email website, http://www.hotmail.com.

- The comparative evaluation showed each team its strengths and weaknesses in the usability testing area and provided a survey of the state of the art in usability testing with particular emphasis on test techniques, test setup, scenario selection, scenario expression and reporting practices.

- The professional CUE team captains were Scott Butler, Ian Curson and Nigel Bevan, Erika Kindlund and Dana Miller, Jurek Kirakowski, Barbara Karyukina, Klaus Kaasgaard and Ann D. Thomsen, Lars Schmidt, Meghan Ede, Wilma van Oel, Joseph Seeley, and Kent Norman.

- More about CUE on http://www.dialogdesign.dk/cue.html, where you can also find the test reports that the CUE teams produced.

Rolf Molich
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General Attitudes

1. **Be humble.**

   This is a two-word summary of the spirit of the following general advice.

2. **Make usability test results usable for your users.**

   Keep in mind that the users of your usability test results are the members of the product team, including developers, product managers, marketing, and so forth.

3. **Check the usefulness and usability of your work.**

   Seek feedback on how useful and usable your results are for your product teams. This could be done via a few questions in an email. Iterate until you have a procedure and a presentation format that is appropriate for your audience.

   Any comments about usability problems in a usability test procedure or in a usability test report should be taken very seriously.

4. **Check the quality of your work processes regularly.**

   Learn from other professionals; for example, hire an independent coach to comment on your test practices. Do this about once every two years.

   Seek and listen to feedback on your processes from the product team. Remember to model a willingness to iterate and improve your process design, just as you would ask the product team to iterate their designs. Be humble!

   Videotape yourself interviewing users and reflect on your interviewing skills with another colleague.

5. **Look for ways to maintain and improve your skills.**

   Be open to new methods and variations on old methods. Keep an open mind about new ways to do your work. Keep up with the literature.

6. **Avoid personal opinions, and base suggestions on data whenever possible.**

7. **Avoid making design decisions based solely on user opinions.**

   "Don't tell me — show me!" should be the basic point of departure for any usability test. Watch out particularly for user opinions of the form "I know how to do this, but you should redesign it because most other users would not know how to do it." Such opinions are often worthless.

   Explain to test participants that they were chosen for their specific and unique qualifications and that they needn't worry about representing other people. Tell them you want to see *them* working with the product as if they were at their office or home. Opinions often differ from performance, and it's the latter that's (usually) more important.

8. **Don't test your own baby.**

   Ask another person to test products to which you contributed significant design input. Chances are that you are not sufficiently unbiased to evaluate polite criticism of key design decisions.

   Of course, testing your own baby is better than no testing at all, if those really are the only options available to you.

You can test a product that you have already tested after changes have been made, and it can be very efficient to do so because you'll already know the product. Often, you will be able to offer deeper insights. But you should be aware that you might also be biased, because you have a personal interest in showing that your previous recommendations were good.

THE POLITICS OF USABILITY

9. Make the consequences of ignoring usability visible.

The most important task for a usability professional is to demonstrate through testing the consequences of ignoring usability.

10. Avoid opinion wars.

There is no magic answer to the question "Why are your opinions better than mine?" Opinions only lead to opinion wars. Designers and developers are skilled at discussing opinions. That's what they do most of their time. You can't win arguments based on opinions.

11. Sell your ignorance by insisting that only user testing has the right answers.

You become a new and interesting player if you continue to insist on your ignorance: "Gee, I don't know what users prefer. And I have learned from experience that my opinions are pretty worthless. Let's test your two suggestions! If one of them works, let's use that one. If both work, let's toss a coin."

12. Position yourself as an ally, not as an enemy or police function.

13. Build alliances.

Form alliances with project groups who are interested in usability. Give these groups preferential treatment.

14. Avoid confrontations.

In my experience, when it comes to a confrontation, then management almost invariably sides with the product team: "Our product team members are busy people. They've got important deadlines to meet. Why don't you leave them alone?"

15. Pick your battles; you can't win them all.

Even if you could, it would be unwise. Defeated colleagues rarely make good allies.

16. Build trust by being completely open.

There is nothing mysterious about usability testing. Demystify the process. Explain carefully what you do to anyone who wants to know.

17. Stick to mainstream methods.

Build trust by emphasizing that you use widespread and acknowledged methods.
For example, avoid personal variants of the think-aloud method that include, for example, demonstration, self-reporting or opinions.

18. Document and sell even small successes to your colleagues and to management.

19. Spend time in management meetings to get visibility, to report on usability activities, and to understand the goals of and the pressures on others.

Techniques for following the above principles are discussed in the section, *Communicating Test Results*. The politics of usability are described excellently and in more detail in references [4] and [5].

THE ETHICS OF USABILITY TESTING

Users are human. As HCI professionals we must ensure that our fellow humans perceive their encounter with usability professionals as pleasant, without sacrificing the accuracy of our results.

It is essential that test participants leave a test setting feeling no worse (and possibly better) than when they arrived

20.   Familiarize yourself with recognized ethical guidelines.

There are guidelines produced by professional organizations like the APA [7] and the ACM [6] about how HCI professionals should behave.

21.   Don't allow managers to watch usability tests if their staff are the participants.

Don't run the test if managers insist on being present. Show only completely anonymized test results to managers.

22.   Emphasize that you're testing the website or application, not the test participant.

Make this clear when the test participant is recruited. Repeat it in the confirmation letter. Say it again when you greet the test participant. Emphasize it once more if the atmosphere in the testing room becomes tense.

23.   Make the first task incredibly simple.

No matter how many times you tell test participants that you are not testing them, they will still feel under pressure initially. A quick success relaxes the participants and helps them to feel comfortable in the surroundings and with thinking aloud.

A simple task might be "You'll be testing ACME's website. Find it."

24.   Observe strictly your own rules for handling video tapes.

Most usability test centers have strict rules for who can watch tapes from usability tests. Unfortunately, I have seen examples where usability tapes were handed to other usability professionals outside of the organization (with the best intentions, of course), or where a usability test center entertained visitors by showing video clips with "funny" episodes from usability tests where test participants were picking their noses, and so forth.

Finding Good Test Participants

> Note: for a much more extensive and in-depth set of advice for getting test participants, please see our separate report *233 Tips and Tricks for Recruiting Users as Participants in Usability Studies* (**www.nngroup.com/reports/tips/recruiting**). There is a small amount of overlap between the tips provided in the present report and in the recruiting report, but mostly the recruiting report contains more detailed advice on this more specialized topic, such as statistics for how big incentives are paid to different types of users in different regions of the world.

25. Ask test participants to suggest other test participants.

Test participants often know other prospective test participants. Remember to ask.

You might even suggest a deal where everyone benefits: "Usually we pay $75 to a test participant. If you get another qualified test participant for us, we'll pay both of you $150." Anecdote: In one case where we successfully applied this method, the test participant immediately suggested: "And if I get you *two* qualified test participants, how much will you pay?"

26. Consider creating recruiting brochures that your test participants could give to friends and colleagues.

Your recruiting will be much easier if prospective test participants trust you because you have been recommended by someone they trust.

27. Use temp agencies if you need people "off the street."

Test participants from temp agencies are often a good value. Usually you have to pay for four hours of service even though the test only lasts two hours, but you save on the gift and time to recruit.

28. Use a market research firm if you need people who meet a certain demographic profile.

My experience is that no-show rates from a marketing research firm can sometimes be a problem.

29. Set up a booth at a flea market.

If you need "people off the street," (users that don't have to meet a strict user profile) set up a booth at a flea market. It's sometimes even possible to conduct short tests in this very informal setting.

30. Ask for lists of people who have contacted customer service.

Often, such people are quite motivated to provide comments. I don't recommend recruiting more than 40% of the test participants this way, however, because such people are often on the extremely knowledgeable and motivated end of the continuum.

Watch out for highly dissatisfied customers who wish to use the test session as an outlet for their complaints — this is not the sort of motivation you want. One or two articulate, critical devil's advocates can be quite useful in a test, however.

31. Ask for help from the customer's sales department.

Sales people often know a lot of users of the product.

If you need test participants who do not yet use the product, and the company has more than one product, contact users from those other product customer lists.

32. Look for users in their natural habitat.

If your task is to test a florist website, go to a local florist's shop and contact customers. If your task is to test a library website, visit a branch of the library.

33. Give a usability talk at a customer conference and at the end of your talk, ask for business cards from people who might be interested in supporting usability or design work.

This method can make it easier to bypass marketing / sales groups that are nervous about letting usability specialists contact customers.

34. Approach users through their managers, not directly.

Sometimes when we needed users of a particular company's product, we contacted the users directly without much success. The usual response was, "I don't want to do it in my spare time, but it's OK if I can do it during work hours. I'll ask my boss." Usually the boss said No. If you approach users through their manager, you get a better chance to explain how the usability test will benefit the company, which makes it more likely that you will get a positive answer.

35. Establish contact with local real-estate agents.

Real-estate agents know a lot of people, their work and their interests. Be prepared to pay for referrals. Make sure that the real-estate agent has informed the client before you contact that client.

36. Approach organizations (churches, men's clubs, and so forth).

Approach organizations that include the population you are seeking to involve in the test. Offer to donate money to the organization for each participant they recruit. This donation will interest individuals who would not be interested in the small sum paid to volunteers.

37. Avoid facilitating tests with your own friends and relatives.

Friends and relatives often are not representative users. If they aren't typical users the test may result in them feeling foolish — not something you want to do to someone you care about. They may also be overly "nice" or critical.

If your own friends and relatives match the user profile it may be ok to recruit them, but ask a colleague to facilitate those tests so your participants don't feel like they have to tell you only good things. Friends and relatives may be the only practical option for small projects and for students, however.

38. Screen test participants carefully.

Ask prospective test participants to demonstrate their knowledge. Don't waste time asking them to provide personal judgments.

Ask "If you are on a Web page, how do you return to the page you just came from?" Don't ask "How often do you access the Web?"

Screen both for insufficient knowledge and for too much experience.
An example of a good screening question for too much experience is "Imagine that you have a long page with a lot of text displayed on your browser. How do you find out if the word 'usability' occurs somewhere in the text?" Test participants who can answer this question may be overqualified for the test.

39. Screen out Web designers and programmers.

Unless your product or website is intended for developers, it's a good idea to screen out people who claim to know a programming language or to have created a Web page.

RE-USING TEST PARTICIPANTS

40.   Be careful in re-using test participants from previous tests.

If a test participant is good at thinking aloud and sparkles with catchy quotes you can re-use that test participant, but don't use a test participant more than twice a year — and not on the same product or type of product.

41.   Keep a database of previous test participants.

After each test, make a note of how expressive and articulate the test participants were and the depth of their comments, so you can target them for future studies.

42.   Show the same interest in your final participant as in the first participant.

If the tests become boring, there might be a problem with the tasks. Perhaps they've been made too easy by telling the test participant too much about how to accomplish the task.

43.   Send a thank-you letter after the test.

This courtesy will make it easier for you to recruit the test participant for another test. Don't forget to ask them for referrals to other people they know who might enjoy participating as much as they did.

Making Sure that Test Participants Show Up

44.   Describe what it's like to participate in a usability test before the test.

Provide this information both when the test participant is recruited and in the confirmation letter.

45.   Provide detailed instructions on how to get to the site (a map and text instructions).

Provide a phone number to call if a problem arises.

It's always wise to usability test the directions to make sure they're clear — poor directions are one cause of no-shows.

46.   Send a confirmation letter to each test participant immediately after recruiting.

The confirmation letter should tell the test participant that a call will be made (see tip 49).

47.   Avoid words that make a usability test sound like a scientific experiment.

Avoid words and phrases like "lab," "experiment," "research" and "test subject" in your description of a usability test. Use terms like "product evaluation" and "usability evaluation" instead.

48.   Check the comprehensibility (usability) of the confirmation letter.

Ask two or three people to read the letter out loud and comment on any points that seem wrong, ambiguous, and so forth. If they hesitate or pause during reading, ask afterward what caused them to hesitate.

After they have read the letter and put it away, ask them to recall a few points from the letter. After each test, ask the test participant if the confirmation letter was comprehensible and exhaustive.

49.   Follow up with a brief personal confirmation call the day before the test.

The call should be made by the facilitator in order to demonstrate real interest in the test participant.

50.   Stress that "*Your* participation is particularly important to us."

Emphasize that each test participant was chosen because he or she meets carefully chosen criteria.

51.   Provide a reasonable incentive.

Avoid promotional gifts like company coffee mugs or pens, which are considered worthless by many test participants. Ask yourself, "How much am I — the test facilitator — getting paid to run this test? Why should a test participant do it for less?"

Although the incentive should not be the driving force behind participation, a substantial gift shows that you appreciate that the test participants have set aside precious time to help you.

In 2001, decent incentives seem to be in the $40–$100 range for a 90 minute test.

Keep in mind that some test participants may not be allowed to accept compensation of any kind (government workers for example).

Selecting Good Test Tasks and Scenarios

Selecting the tasks for a usability test is the most critical activity of the test planning. Poorly chosen tasks can invalidate an otherwise excellent test. There are different ways to choose the tasks for a test: frequency of use, criticality, new features, customer complaints, and so forth.

52. Focus your test on core tasks, rather than on what's new or fun or easy to test.

Focus on the key selling points of a product. Ask yourself: What user goals are crucial to the success of this product?

In a Web mail system, for example, focus on tasks like:
- Register
- Send mail
- Reply to mail
- Send mail with attachment.

De-emphasize tasks like:
- Set date for reminder
- Send mail using stationery
- Customize the menu.

Test non-core tasks only after the basic functionality has been covered completely.

53. Test critical tasks.

Critical tasks are tasks that, if done wrong, could lead to dire consequences, such as humiliation, physical harm, or firing.

54. Test edge cases.

Test behavior in complicated but realistic scenarios, such as those in which large amounts of data are involved, some resource limit is almost exceeded, service is denied, system load is heavy, and so forth.

In a Web mail system, for example, include test tasks that involve:
- Inboxes containing so many messages that scrolling is required
- Long messages
- Messages that occupy almost all the available storage space
- The website being closed for maintenance or otherwise unavailable.

55. Let test participants define their own tasks.

If it is appropriate, consider using tasks based on the test participants' personal goals.

For example, in a job search website, you might have a formal task that asks a test participant to find a job in London, England that involves software development. The process that test participants use for this non-relevant task may be quite different than if you asked them to describe a job that they would be interested in and then have them locate one that matches their specific goals.

56. Write scenarios — not just tasks.

A task simply instructs the test participant to do certain things with the interface. A scenario sugars the task by encapsulating it in a hopefully realistic context that will motivate the test participant. See the examples in tip 59.

57. Include introductory letters, confirmation letters, and similar information in your test.

Before starting to use the website, in some cases the user will receive a letter introducing the website or containing a password. Make sure that these letters are included in the test even if they are "not finished." Don't replace the letters with a verbal explanation.

I have seen serious usability problems arise because introductory or accompanying letters were not properly coordinated with the interface. In one case serious problems arose with an e-commerce website because the packing slip accompanying the products was not coordinated with the website text.

58. Avoid tasks you think are humorous.

Avoid silly names, which aren't so funny when the participant finds the task difficult. Avoid instructions like "Send mail to Donald Duck 'Meet me tonight at 7 — Daisy.' "

59. Avoid hidden clues in task descriptions.

Avoid using menu items or control labels in your task descriptions. Task descriptions should be in the form of typical requests.

Flawed **task** *with clues*:
"Look up a person in the Hotmail Membership Directory."

Better **scenario** *without clues:*
"Lois McClaran uses Hotmail. She lives in Indiana. Send her mail."

Sometimes you can avoid clues by avoiding language all together. Show a picture of the item you want participants to find, the chart you want them to create, and so forth.

60. Give the test participant a goal but avoid describing the steps.

Step descriptions often contain hidden clues.

A real example from a test of Hotmail:
"Register and send email to john@mailserver.com."
In this task description, "Register" is not a useful task from most users' point of view. Instead it gives a clue about the system.

"Send an email to john@mailserver.com" would be more appropriate, because it would discover whether new users can figure out that they have to register in order to send mail.

How To Actually Perform Tests

My basic model for a usability test is:

a. The facilitator greets the test participant and asks him or her to fill out the consent form and to do any other required paperwork.

b. The facilitator interviews the test participant about his / her expectations of the website.

c. The facilitator hands written test task descriptions (scenarios) one at a time to the test participant.

d. The facilitator interacts with the participant as necessary while the task is in progress. This interaction might be as limited as reminding the participant to think aloud, or as extensive as an ongoing interview, depending on the methodology being used.

e. After the test participant has worked with the test tasks, the facilitator explores the test participant's model of the product during a short debriefing.

PLANNING AND PREPARATION

61. Practice everything the night before the test.

Run through the tasks with the exact setup you plan to use for the tests.

62. Make sure that preparations for the test are complete when the test participant arrives.

Your attitude should be that it's better to wait 15 minutes for a test participant than for a participant to wait three minutes for us.

A waiting area for test participants, which some usability testing facilities have, is therefore inappropriate. The test participant is king — would you let a king wait?

Assume that all equipment — copiers, printers, even staplers — will fail if you're trying to use them when you have only minutes to spare.

63. Consider a backup system if the software you are testing is buggy.

You might want to have a backup computer with all the same software on it. If there is a serious crash that will take some time to recover from, you can just switch computers and resume.

64. Leave sufficient time between test sessions.

There should be at least 20 minutes between sessions to mark data, clean up the system, get the paper prototype[2] back together, and so forth. This buffer is also useful if people show up a little late (or early). If possible have a waiting area that is set apart from the testing area, so people can wait in comfort if there is an unexpected delay.

65. Ask test participants to do the paperwork before the test.

Send the consent form and any questionnaires you might have to the test participants before the test. Ask them to fill in the forms before the test.

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[2] For more information on paper prototyping and how to conduct this type of test, see Nielsen Norman Group's 32-minute training video *Paper Prototyping: A How-To Video* (www.nngroup.com/reports/prototyping).

Have spare copies of the forms ready in case a test participant forgets the completed documents.

66. Make a list of things to do between tests.

This list would include things such as:

- Deleting cookies. Sometimes deleting all the cookies that a website has deposited on a computer can be difficult. Practice and test the procedure carefully well ahead of the test.

- Clearing cache and history in a browser.

- Pointing the browser to the agreed-upon starting page. The starting page should not be the home page of the website you want to test, because locating the website is often an important task in itself. The starting page should also not be the front page of a search engine.

- Deleting accounts, files, or database records the test participant created during the session.

67. Invite observers into the test room.

I believe in having one or two observers in the room where they can see everything first hand and ask questions directly during debriefing.

If more than two observers want to watch the test (or if they want to come and go as they please during the test), you should use a separate observation area as described in tips 68 and 135.

Note that allowing in-room observers is controversial. Usability professionals differ on this issue quite strongly. The other point of view is: The chance that an observer's nonverbal behavior could influence a person is high, because most observers don't have training in social psychology and the subtleties of observer-participant interaction that could affect results. Any observers should have (at a minimum) specific training on how to be as neutral as possible throughout the test and how to ask questions at the end. Untrained people could ask bad questions.

Test participants may be embarrassed by comments or laughter from the audience, even if it is sympathetic. You can try to avoid this problem by admitting only one observer or by giving strict instructions to observers but some people can't keep quiet. It's also important for observers to interact with each other. Sometimes they just *have* to laugh or make comments (see tip 68).

68. Provide an observation area where observers can watch tests without restrictions.

It is natural and desirable for people who have a strong interest in the product being tested to express strong feelings during a test. Loud discussions, outcries, cheering, laughter, slamming doors and even crying should be perfectly acceptable behavior. Make sure that the sound isolation between the room where the test participant sits and the observation room is perfect, possibly by locating the observation area far from the test room. Contrast this tip to tip 69.

69. Train observers in laboratory etiquette.

If you have a lab that's not perfectly soundproof, hold a pre-test meeting to train all observers in basic lab etiquette. Summarize it in a one-page etiquette handout and post it in the lab:

- Don't turn the lights on.

- Speak softly. Noise or laughter can impact the test participant's comfort, and can impact the study.

- Assume that the test participant can hear your comments.

- Don't slam the doors if you must go in and out.

- Don't touch lab controls unless you are shown how to use them,

- Never speak about a participant in the office because you never know when that person may be around the next corner or come back into the lab to pick up a forgotten article.

Contrast the first four bullets with tip 68.

70. **Write the nondisclosure and consent form in English — not in legalese.**

Excerpt from a nondisclosure form written in legalese:

CONFIDENTIALITY: During and after this contract, Participant agrees to keep in confidence all proprietary information. "Proprietary information" means any information about the specific merits or flaws of the product, or Participant's evaluations of the product. "Proprietary information" does not include any information:

which Participant knew before it was disclosed in this study,

which has become publicly known through no wrongful act on Participant's part, or

which Participant developed independently of this study, as evidenced by appropriate documentation.

When the contract terminates, Participant will return all papers and other materials provided by this study. Participant agrees not to disclose any "Proprietary information" and to take all reasonable precautions to prevent its unauthorized dissemination, both during and after the contract. Participant agrees not to use any "Proprietary information" for Participant's own benefit or for the benefit of anyone other than the sponsoring companies.

Participant acknowledges that all "Proprietary information" remains the property of the sponsoring companies, and that no license or other rights in this "Proprietary information" are granted hereby.

The same message communicated in English:

Non-Disclosure Agreement for [name of study]

In this session, you will be working with [*or* shown, *if a focus group*] a [system type, *e.g. website or software tool*] in its development stage. By signing this form, you agree not to share information you learn about this [system], which is considered proprietary, and which we share with you only so that you can participate in this evaluation [*or* discussion, *if a focus group*]. By signing this form, you also agree not to share information about your session to anyone, especially those you know who also may be participating in this study.

Signature:	_____

Print name: _____

Date: _____

——End of Improved Non-Disclosure Form——

71.   **Avoid nondisclosure agreements whenever possible.**

Because usability testing is done with a small number of strangers, there's usually little risk that they'll leak your corporate secrets to the world. Having to sign a nondisclosure agreement can be a barrier to participation — test participants have refused to participate in tests for this reason.

Note, however, that the use of nondisclosures often depends on how soon a product will go to market and on corporate policy. A usability person who violates the corporate nondisclosure policy could be in real trouble.

RUNNING THE TEST

72.   **Sit with the test participants.**

Recognize the social aspect of thinking aloud. Place yourself so you are out of sight, for example to the right of and slightly behind the test participant.

73.   **Ask "What are your expectations?"**

Ask this question before the test participant sees the home page but after you have briefly introduced the company or the organization that the website belongs to. Consider asking "What would be wonderful?" Listen to the user's terminology.

You might prefer to avoid asking questions about expectations early on if you're showing the participant something brand new and he or she has not had time to grasp it yet.

74.   **Let test participants explore the site for one or two minutes initially.**

75.   **Ask for spontaneous reactions to the home page.**

During the pre-test briefing, tell the test participant that you are interested in "first impressions" for some pages or screens.

76.   **Ask the test participants to tell you if there are any graphics that they wouldn't expect to be links.**

77.   **Be diplomatic when test participants blame themselves.**

If the test participant says, "You must think I'm really dumb" reply "Everything you've done so far makes perfect sense — it's just that this system isn't designed that way."

This feedback works because it directly acknowledges the test participant's cognitive abilities in a way that the rather lame "Don't worry, it's not your fault" can't. The remark also works well because it's not offensive to any product team member who might be watching the test.

78.   **Wait a few minutes before you help.**

Provide help only when it is clear that the test participant is unable to solve the task alone or when the test participant gives up (for example, says that s/he would call or go to another website). Otherwise, the usability test will become a demonstration of the application. Provide the minimum help necessary to get the test participant to start acting independently again.

Probably every time facilitators help, they think they know what the problem is, and thus don't need to hear the test participant say it, but that assumption can cause them to help way too early and miss valuable feedback.

79.   Help when the interface problem is evident.

Decide in advance when to intervene. You can use the number of unsuccessful attempts, an amount of time, and participant distress as criteria. As noted in tip 78, it is important not to provide help too soon; even though users will rarely solve a problem if they have been stuck for ten minutes, observing them during this period provides valuable lessons about users' problem-solving approaches and the design's ability to communicate the available options.

80.   Help immediately if the participant is struggling with something that you already have sufficient data about.

For example, if three previous usability tests have turned up problems with feature X, it might be appropriate to step in and help the subsequent test participants as soon as they encounter the same problem. This intervention is justified if there are later tasks about which the product team still lacks sufficient data.

81.   Watch your tongue.

One of the greatest opportunities for giving unintentional clues occurs when the facilitator starts helping the test participant. It is very difficult not to provide any help beyond the absolute minimum required.

Because of this risk, some facilitators have a firm policy of not providing any help at all during a test session; if test participants run into insurmountable problems, they just ask them to proceed to the next task.

82.   Watch your body language.

Avoid giving unconscious help. For example, a faint smile or an almost breathless sigh can provide an important clue to the test participant, "You're getting close."

It is good practice to have some colleagues watch your facilitation or review tapes of your facilitation and provide feedback on your body language and debriefing.

83.   Show your appreciation for any participant suggestions.

If a test participant suggests a different way of doing things, say "Thank you," and make a note — even if you consider the suggestion worthless. Avoid comments like "Oh, yeah, we already thought of that" or, even worse, "We already thought of that, and it doesn't work because ... ."

DEBRIEFING

The debriefing should be used to get any final input, to clarify questions, and to put the test participant in a good frame of mind.

84.   Write down the debriefing questions before the test.

85.   Get questions from the observers.

If you have observers, tell the test participant that there may be a few questions that your colleagues have.

If the observers are in the test room, let them ask their questions directly. Watch out for criticism of the test participant or a desire to demonstrate how smart things could have been done.

If the observers are in a separate observation area, excuse yourself for a moment and get the questions from the observers. You can make this easy by having your observers write down questions on note cards and just picking them up at the end of the test session. You could also use a wireless PDA and have the observers send you additional questions remotely.

86. **Focus on the key purposes of the test.**

87. **Return to key problems that the test participant encountered.**

Ask "How could we prevent this problem from occurring?"

88. **Don't defend the application.**

For example, during debriefing avoid remarks like "I'll show you a really smart way of accomplishing the Attach document to email task you had problems with." Much better is, "Lets go back to the Attach document task. How should we change the interface to avoid the problems you had?"

89. **Ensure that test participants leave the test feeling no worse than when they arrived.**

Communicating Test Results

The primary purpose of a usability test is to cause beneficial changes to the user interface — not to write a good test report.

Even the best test report is worthless if it does not cause beneficial changes to the user interface. Communicating and selling test results to product team members is a crucial task for usability professionals. See also *"The Politics of Usability"* in this report.

The test facilitator must try to convince the product managers how important it is to allocate time in their busy schedules to correcting the problems found.

90. Spend some time with your product teams, so that you can identify and better meet their needs.

Just like you ask your product teams to spend some time with their users, spend time with your users. Ask your product teams what questions they would most like to ask users and consider these questions when you do customer visits.

91. Work with your product team to define the user profile.

Often your product team will have some knowledge of users, but you'll have to help them to identify and describe all the significant characteristics.

92. Ask your product team what feedback they may already have and where they got that feedback

Help them to define what they know and what they don't know about their users, and help them to evaluate the quality and source of existing feedback. Often product teams have user data that they forget to consider before launching into new research projects. This feedback will often be vague, for example "users have trouble finding things."

93. Work with your product team to create the test scenarios.

This exercise — seeing the system through the eyes of a typical users — is often worthwhile in itself. Members of the product team (developers, product marketing, Quality Assurance [QA] specialists) can give valuable input, but test scenarios are best written by the usability professional writing the test plan. Ask the product team to comment on and approve the task scenarios.

94. Make it as easy as possible for your clients (managers, developers, designers) to watch the tests.

Run the tests where your main target audience is. Use a discount portable lab (see tip 135) to run the test at the location where your clients are. Schedule test participants at times that are convenient to your users. Advertise the usability tests.

95. Ask your product team to observe the tests as a group.

Watching a usability test is a group experience. The discussions of common experiences during the tests are important for building consensus on what needs changing. Don't expect anything useful to come out of watching user tests while isolated in a cubicle or from a recorded video "highlights" tape. Don't transmit test sessions over the intranet.

Ask the product team members to take notes of what they observe. It takes some practice to take good notes so you might want to offer some minimal training on what to look for while observing.

96. Build consensus with product team members and managers.

Schedule a meeting immediately after the test series where all product team members, including developers, designers, managers, and so forth, who have watched one or more tests are invited. Proceed as follows:

- Ask each participant to write down all usability observations that s/he considers important on sticky index cards — one card per observation. The facilitator may also put down his / her observations. Ask everyone to remain silent; discussions are not allowed during this brainstorm.

- Put up the index cards on a board. No discussions.

- Add additional observations inspired by the observations of others, if any. Let this process continue as long as people want to add findings. Still no discussions.

- Sort the findings in suitable categories.

- Eliminate duplicate findings. Elimination is allowed only if everyone agrees. From this point on discussions are allowed.

- Name the categories. Use differently colored index cards for this purpose.

- Prioritize the findings. Give each participant 10 points that can be distributed over the findings to mark the most important ones. The points can be shown as colored dots on the stickies describing the findings. Points can be awarded to one finding or distributed evenly or unevenly among 2–10 findings as desired.

- Take a copy of the board and use that as the basis for writing the test report. With this method the report will mainly serve to record what was agreed during the meeting.

At the end of the meeting everyone will have a common understanding of the most important usability problems in the interface. Corrections of the usability problems can start immediately.

The difficult part of this method for some usability professionals is to downplay their own role and opinions. It is important that the facilitator mainly acts as a catalyst during this consensus building process.

This method is sometimes called the "KJ–method" after the Japanese ethnologist Kawakita Jiro.

97. Separate the discussions of severity and resources.

Sometimes usability people and their product teams find it difficult to agree because they have different and hidden agendas. The point of departure for usability people is "How serious is this problem for the user?" The point of departure for the product team is "How many resources are necessary to correct this problem?" Both viewpoints are entirely legitimate but they are often orthogonal and need to be addressed separately.

Reporting Test Results

PROCESS

98. Ask your customer about reporting requirements.

Above all, your report needs to meet your customer's needs. Give new customers a sample report and ask them if the format is what they expect.

If remaining product time is very short, a simple email summary written within hours might be more effective than a detailed report written within a week.

99. Do a quality and usability check of your test report.

Ask one or two experienced colleagues to read your usability report before you give it to the customer.

Pay attention to comments from your users (developers, designers, managers) regarding the usability and usefulness of your test reports.

100. Record usability problems in the bug tracking system used by your organization.

Put all usability issues into whatever bug tracking system is used for all other software problems. This doesn't guarantee that things will be fixed, but it does insure that usability issues can be tracked from a single location.

It also allows you to track the destiny of the usability problems.

101. Get involved in sessions where managers decide what bugs need to be fixed.

You can lobby for serious usability bugs and increase the visibility of your usability efforts.

102. Avoid sending out partial results.

You will get the full attention of your audience only for the first report you send to them. No matter how much you stress that the first report is preliminary, you will be judged on that report. Your product team is likely to look only briefly at the complete report when it arrives.

103. Let the project team comment on the usability report before you show it to others.

The first version of a report sometimes contains simple misunderstandings. Make sure that misunderstandings can be corrected without anyone losing face. It is unfortunate when project teams feel bad about having been criticized unjustifiably because of a misunderstanding.

104. Make sure that you know who should get usability reports.

Make this clear with your sponsor. Some companies publish all reports; others want only the team to have the report.

105. Set up a database of reports that is easily accessible.

106. Consider a report that looks at problems across studies.

This cross-study report might highlight underlying problems like poor registration facilities originating from a common module, or major consistency issues.

REPORT FORMAT

107.   Make it short.

A report of approximately 12 pages plus up to 25 pages of appendices will be acceptable in most cases. Use at most 6 pages of the report to list at most 15–40 problems. If there are more problems (which is usually the case) it is your task to prioritize.

Some usability professionals argue that "it depends" and that you can write longer reports. However, I have never seen a successful usability report that violated this rule.

108.   Consider the following usability test report format:

- Executive summary (1 page)

- Table of contents (1 page)

- Methodology (1 page)

- Test participant profiles (1 page)

- Test results (5–7 pages)

- Appendix: Test script, including test scenarios

- Appendix: Screenshots annotated with key issues.

109.   Include a one-page executive summary.

Describe:
- Top 3 successes
- Top 3 problems
- Your conclusions and recommendations.

Focus on major usability issues. Avoid getting too detailed here. Discuss the issues that could lead to likely product failure or user complaints in the marketplace, like "Three out of six test participants were unable to put products in the shopping cart." Avoid micro-usability issues like "Four out of six test participants expected the company logo in the upper left corner to be a link to the home page."

110.   Classify all comments

Distinguish among the following comment types:
- Problems
- Positive findings
- Suggestions from test participants
- Functional bugs
- Usage scenarios, where test participants describe their work.

111.   Distinguish among expert opinions, user opinions and user findings.

Opinions may be acceptable in a usability test report if they are clearly marked as such.

112.   Classify the severity of problems.

Use a usability bug classification scheme that parallels the functional bug reporting scheme. See tip 113.

Distinguish among the following severity categories for problems:

- Catastrophic problems. ("Test participants did not want to provide their email address, because the website does not indicate what it will be used for.")

- Serious problems. ("Test participants were unable to locate the privacy policy.")

- Cosmetic problems. ("Test participants had trouble locating the @ key on the keyboard when asked to enter their email address.")

113. Define a severity scale for usability bugs that is parallel to the scale used for other bugs so they are on an equal footing.

You need to come up with severity definitions that parallel the severities for programming problems (functional bugs) to prevent usability bugs from getting lost.

Do a seminar on usability bugs and discuss a proposed severity scale with development managers. Show how usability problems can be just as severe as programming problems. For example, an accidental deletion because of a lack of a confirmation message can be catastrophic, and a misspelling on a menu may seem trivial, but it can bring ridicule to a product and make it seem shoddy.

You will eventually need the buy-in of development managers, so some directed education is needed.

114. Include quantitative data.

Avoid usability reports that are just long lists of problems. Include simple quantitative data like:

- The number of people who successfully completed each task.

- The number of people who experienced a particular problem.

- A breakdown of problems by experience level.

115. Mention the positive findings.

While the emphasis in usability testing is on finding the problems, it is both useful and politically advantageous to note what worked well.

Ideally there should be one positive finding for each problem. It is my experience, however, that it is rare to have more than one positive finding for each three problems. This ratio seems to be acceptable.

Make sure to mention specifics on positive findings, rather than just generalizing. Specificity makes the comment more useful and seem more credible. A test report seems insincere if it starts by saying "Generally, the test participants were very happy about this website," and then lists more than 30 problems without any positive findings to substantiate the initial claim.

Sometimes positive findings may manifest as an absence of complaints or problems, such as test participants *not* getting lost. It takes an effort to remember to look for things that didn't happen, but sometimes there is significant good news in these non-events.

116. Sort problems in a way that is useful to the particular audience.

Developers may like to see problems sorted by Web page or GUI object (window / dialog box). Managers may want to see problems sorted by severity in order to easily identify the worst problems found during the study.

Consider keeping the master list of problems in one large table so the problems can be sorted on various columns, for example object, priority, problem category. Then duplicate the table and sort it according to the particular audience. Furthermore, using one large table allows you to add a new column for additional sorting. For example, you could add and sort by the projected resources needed to fix each problem.

117.   Include sufficient information to reproduce the test.

Always include test scenarios / tasks and the instructions that you gave participants.

118.   Include screenshots.

Screenshots help to illustrate findings and reduce verbosity. They also serve to make the context more clear to the reader. Screenshots are useful for readers who are not intimately familiar with the system and for later reference.

Put 10–25 representative screenshots in an appendix and annotate them with key issues (1–5 lines per screenshot). Reference the screenshots in the problem descriptions.

Some usability professionals include the screenshots inline with the report, which minimizes the amount of flipping back and forth but lengthens the main part of the report. Ask your main target audience to make the choice.

When working on websites, make sure to grab screenshots the day you do testing, if possible, because sites change content and designs often.

119.   Develop a consistent report format.

Use a report format — and in particular a title page — that acts as a brand for your work. Work with a graphic designer on the appearance of your report.

120.   Use an attractive and usable professional layout.

The layout is important for selling the results to busy project teams. The report must also be scannable and easy to take action with and track changes in. Avoid layouts that require a lot of formatting, however. For example, don't wrap text around screenshots.

121.   Stress that problem descriptions should be considered generic problem descriptions.

Usability test reports are not exhaustive. Recent research shows that for most websites a usability report describes only a small fraction of the total number of usability problems (for example, http://www.dialogdesign.dk/cue.html). Therefore, each problem description should be treated as a representative of a class of problems. For example, if a comment points out a usability problem in an error message, developers should be encouraged to check all error messages for similar problems, in particular the error messages that no test participant saw.

INDIVIDUAL COMMENTS

122.   Express yourself clearly.

Avoid problem descriptions that are hard to understand or that require clarification from the test team.

Examples of unclear descriptions:

- "Seven respondents succeeded in placing an address in the address book (n=10). Two respondents, who didn't succeed, clicked 'Cancel.' "
  The first sentence is a positive comment which is ok. The second sentence is a "So what?" comment.

- "P1 commented, after registering, when shown info on WebCourier: '... show you something special on the way in — isn't that typical of Microsoft' "
  What's the usability problem?

- "All the buttons on this page ('Send', 'Save Draft', 'Spell Check', and so forth) are standard Macintosh buttons — they look pushable, have black text on gray, and so forth. However, there are some buttons that aren't immediately obvious."
  Which ones?

123. Describe atomic problems.

An "atomic" usability problem is a problem that can be corrected without affecting other problems.

Avoid problem descriptions that are a conglomerate of several atomic problems. Example from a study of the Hotmail website:

"Most respondents found the feedback after confirmation OK and they liked ... that in most cases the original data entry was still there after an error message. In long data entries they are however easily overlooking entry boxes which appeared to lead to several error messages (registration) or to wrong settings (saving sent messages and enabling filters)."

124. Be careful with descriptions of problems that are not self-evident and that were observed with only one test participant.

It could be argued that $(n - 1)$ test participants did not encounter this problem. If a problem could lead to severe consequences, however, it still might be good to include it with an explanation that it was noticed by only one person, but that this person deleted a database because of the problem.

You might see a problem that doesn't come up in the testing session, for example a consistency issue. In such cases, make a note of the problem and indicate that the problem is not based on user data.

125. Consider using a table that indicates which participants had what problems.

You might notice a trend based on the test participant's background. The table also helps readers of your report in understanding the amount of data you have for each of your task related comments.

126. Provide precise problem descriptions, preferably with examples.

Avoid vague problem descriptions without examples that would probably not help a design team. Example: "Severe problem: Terminology was often confusing, especially when different terms referred to similar features or the same feature could be accessed by different terms."
Two or three examples would have been useful here.

127. Use test participant quotes extensively.

Well-selected quotes make the reader "feel the users' pain."

Maintain the integrity of quotes by using quotation marks to indicate the participants' exact words. If you paraphrase the participant, do not use quotation marks. This implies that you need to mark quotes in your notes — after the test, you won't be able to tell whether you were quoting or paraphrasing the participant unless you take the time to review the test tape.

Consider slight modifications of the quotes if they have overly provocative language, for example offensive words. The paraphrases should appear within [editorial brackets] if used inside quotations, however.

128. Include a recommendation with each problem.

Provide enough detail (if you can) for project teams to know what to do with a problem. Indicate that recommendations are suggestions only.

Some project teams prefer to find their own solutions to usability problems, but others insist on getting your expert advice. Whether to include recommendations with the problems can be a political issue. Ask your project team or your client about reporting requirements.

Well-chosen recommendations may also serve to explain the nature of the problem better.

129. Provide brief notes about relevant basic usability or human factors principles.

Example from a test of http://www.disney.com:

"Four out of six participants did not understand what an 'I like you Pooh Gram' is. The detailed product description was not helpful either.
General usability principle: Speak the language of the users. Avoid marketing speak."

For a list of the ten most fundamental usability principles, see
http://www.useit.com/papers/heuristic/heuristic_list.html

How To Test on a Minimal Budget

Always consider the cost / benefit tradeoff for alternative (cheaper) test solutions.

Take tip 131 as an example: Don't record tests on video or audio. Of course it's a good idea to record tests on video if time and money are unimportant. But most often time and money *are* important. Consider: What do you want to use the recording for? For reviewing the test afterwards, perhaps. But reviewing a tape takes just as long as running another test with a new test participant. From which would you learn more?

130. Run at most six test participants with one set of test tasks.

If you have resources to run more tests, continue after the most important usability problems have been fixed to make sure the fixes actually work.

131. Don't record tests on video or audio.

See the cost / benefit discussion at the start of this section.

132. Use one usability professional to run tests.

Two usability professionals (or one facilitator and one notetaker) will do a better job than one, but the result will not be twice as good. It is a good idea to ask an experienced colleague to watch two or three tests and review your test report afterwards.

133. Take notes on the fly.

You'll probably miss a few details compared to what you would learn from having a notetaker or watching a video recording after the test, but chances are good that you'll have sufficient time to record all problems that really matter.

Take notes *even if* you are recording. That way you are clearly showing the participants that their views matter to you, and you have insurance in the event of the equipment failing as it certainly will one day.

Be aware that taking notes during a test could distract the participant. Some usability professionals have had test participants ask what they were writing down when the test participants made a mistake, but weren't aware of it. So this tip is not ideal — but then again, you can live with it if you want to test on a minimum budget.

134. Don't use a lab.

You can run most tests just as efficiently in a meeting room or in the test participant's office — at a fraction of the cost of a lab. If more than one or two people want to watch the test, you can buy a slave monitor and a cheap wireless surveillance camera used in shops to protect against shoplifters. With this inexpensive equipment you can let project team members follow the test from a neighboring room as described in the following tip.

135. Consider a portable discount usability lab.

The "portable discount lab" that my company uses consists of the following equipment:

- A wireless camera and a receiver. Buy a cheap camera of the type they use in shops to protect against shoplifters. The camera we bought also contains a primitive microphone that picks up the conversation between the facilitator and the test participant (I don't know if this is standard for this kind of equipment). I bought it at my local electronics dealer. It cost less than US$400 but I should add that it had been used for a few hours.

- A solid tripod to mount the camera. Price approximately US$100.

- A standard 14-inch TV set to show the picture from the camera. Price approximately US$150.

- A slave monitor that will show the picture that is on the test participant's screen. We use a 15-inch LCD display that cost about US$1000. We chose the LCD display because it is easy to carry around, for example in the original factory box.

- A long high-quality cable to connect the test computer and the slave monitor. We have one 15-meter cable and two 7.5-meter cables. (50 feet and 25 feet, respectively.) Even when these cables are connected to form one long cable of 30m (100 feet) we have seen no deterioration in signal quality. These three cables cost approximately US$200.

Our customers express high satisfaction with the quality that this simple equipment delivers. More professional equipment may of course be more convincing to people who are skeptical about introducing usability into the company. A huge investment is a way — although in my opinion an awkward way — of showing employees that your company is committed to usability.

One-way mirrors are of course impressive. Next time you are in a "real" usability lab, however, try to watch where the observers are looking. You will find that most of the time they are looking at the monitors.

136. Recruit test participants from elsewhere in the organization.

Note that this practice is risky. It's easy for people to get lazy and decide that internal participants are always good enough for usability testing.

137. Talk to people who know users well (if it's too expensive to talk to users), for example customer service.

Consider talking quarterly with different customer service representatives. Ask them to highlight the top ten usability issues that come up in their conversations with customers. You can do a briefing to the customer support team to explain what you are looking for first.

138. Consider remote testing.

Consider ways to display sessions to remote development sites (*NetMeeting*, *GoToMyPC*, *PCanywhere*, streaming video). Make sure that you practice several times until you are familiar with the technology, which can be confusing.

139. Test at a conference.

One of my colleagues suggested the additional tip "Bury the funds," that is, hide the test expenses in unrelated accounts. I consider this tip unethical, so I would not recommend doing this. In the long run, it is better if management understands and approves of the expense of usability and judges the methods as having a positive return on investment.

Testing with Experienced Users

There are several kinds of experience:

- experience with a particular version of a product
- experience with other similar products
- general domain experience.

This section mainly deals with experience with a particular version of a product.

I don't know of any method to create a user with six months of product experience within the two or three weeks normally available for usability testing a new website.

With this word of caution in mind, I can offer the following tips:

140. Consider the internal and external marketing effect of testing with experienced users.
Experienced users and expert users often have the ear of management.

141. Always test some expert users.
Experts can reveal usability problems that new users are unlikely to experience, especially those dealing with efficiency.

142. Involve experienced users in the creation of usability specifications.

143. Include both a novice and an expert in your pilot testing.

144. Ask customers, instructors and support staff to point out experienced users to you.

145. Ask each participant to bring typical examples of their work related to your target product.
For example, ask for documents and printouts or representative files (as long as they are not proprietary). Ask for one typical example, one easy example, and one example from a customer that they are particularly anxious not to offend or annoy.

146. Ask participants to postpone work they will do with the product or website so they can do that work while you are present.
Let test participants carry out their own tasks during the usability test.

147. Ask participants how typical the tasks in your task set are.

148. Ask participants about typical and critical tasks.
Focus on:

- Typical tasks for the test participant. We are not interested in the test participant's perception of what might be typical tasks for others.
- Critical tasks — tasks that people don't do every day, but when they do perform them they are critical.
- Untraditional applications of the website (unintended or novel uses).

149. Quiz experts about the size of data sets.

A flaw in some usability tests is the use of a sample database that is unrealistically small, which could affect the validity of the study.

150. Get frequency-of-use information from experienced users and use this as input into test tasks.

151. Ask experienced users how they would access the website.

Experienced users often access your website using different forms of equipment (home versus work).

152. Ask participants about error messages.

Which messages do you encounter most often in your daily use of the website?

Are the messages helpful?

How could they be improved?

153. Ask participants about the help system and any other type of documentation.

Do you recall when you last used the help system?

Tell me about some successes you have had with the help system

Tell me about episodes where the help system failed to help you

How could the help system be improved?

154. Ask "What are the three most important changes you would like to see happen on this website?"

155. Ask "What are the three best things on this website?"

156. Ask which small things are the most bothersome, so that minor but crucial things get mentioned.

Best / worst lists are good but tend to draw out only the bigger issues.

157. If you are using time-to-complete-task as a measure, consider using a work-speed metric that compares all test participants to a trained expert.

158. Have some experienced users observe a usability session and comment on the sessions and methods.

159. Consider having some experienced users participate in repeat testing as a product evolves.

Hiring a Usability Professional

Here is a list of questions that you can choose from as an manager looking for a person to fill a usability position. Overall, look for people who have specific solutions to offer, and who understand the importance of building good design into the product rather than testing for it at the end.

As a usability professional, you can use the list to prepare yourself for an interview.

GENERAL PRINCIPLES

160. Focus on specific behavior in the past.

Past behavior is the best predictor of future behavior.

161. Look for humility.

Candidates who think that they can walk on water might make great evangelists, but they may not perform well in everyday usability activities.

162. Hire an experienced usability consultant if you are uncertain what to watch for in the answers to the following interview questions.

If you don't know how to judge whether the usability consultant who will assist you during the interview is sufficiently experienced, you may find the section *Assessing the Quality of a Usability Test Firm* helpful.

ATTITUDES

163. Why are you looking for a new position?

164. What do you like most about your current job?

165. What do you like least about your current job?

166. Describe a usability or design project that did not go well.

"Tell me what caused the problems and what you would do differently to prevent this problem from recurring." Consider how the candidate allocates blame. Does the candidate assume some responsibility for the project not going well?

167. Describe a usability or design project that went well.

"Tell me what made it a positive experience." Make sure to keep the candidate focused on telling about one specific example, rather than generalizing.

168. What do you like most about the usability field? Least?

169. How do you determine when a product is "usable enough"?

170. How do you get answers to your usability questions when there is no expert nearby to ask?

171. What role can QA play in improving the usability of a product?

172. What do you know about the products that this company makes?

Check to see if the candidate did any research before coming to the interview.

GENERAL KNOWLEDGE ABOUT USABILITY

173. **Which two or three usability books would you recommend to colleagues who are not usability professionals?**

174. **Which three or four books would you recommend as essential for the usability professional's library?**

175. **If you were asked to pick three topics for lunchtime usability seminars, what would these topics be?**

USABILITY EXPERIENCE

176. **Have you taught any courses or seminars in usability or UI design? Which topics did you emphasize in the course?**

177. **Which courses or seminars have you taken on usability or design?**

178. **Which usability methods are you least experienced with?**

179. **Which two or three usability evaluation methods are you most experienced with?**

    Please provide your opinion of the efficiency of each of these methods.

180. **How have you addressed issues of UI consistency across products in the past?**

    Please describe what you did and the successes and failures you had.

181. **About how many usability studies have you supervised, facilitated, and watched?**

182. **What percentage of your time have you spent in evaluation versus design?**

SPECIFIC KNOWLEDGE ABOUT USABILITY

183. **What methods would you use to gather or verify requirements?**

    The lack of good requirements is often cited as the major flaw in producing useful products on time and within budget. Have you been involved in gathering requirements in your current or past positions? How did you go about gathering requirements? What would you do differently now?

184. **What are the advantages and disadvantages of contextual inquiry?**

185. **How do you analyze qualitative field data in a way that is useful for informing project team members how to make design changes?**

186. **How would you conduct a competitive analysis of two websites?**

187. **How much experience do you have recruiting external customers for evaluation activities?**

188. **What tools do you use to prototype screens, windows, or Web pages?**

189. **What would you do to assess the usability of a help system?**

    Scenario: A senior VP in your company hears from a BIG customer that the help system for you biggest product is not usable. You don't have much detail and can't talk with the VP who made the complaint.

190. **What are some general guidelines for making applications or Web pages accessible to users with visual, hearing, or motor disabilities?**

SPECIFIC KNOWLEDGE ABOUT DESIGN

191. **Can you describe a specific design problem that you have worked on and some of the usability problems that you had to solve?**

192. **Here are a few screenshots from an application. What problems do you see here?**

Tell the candidates they can ask questions.

Some candidates just review the screen while others ask about the users, environment, tasks, and other contextual issues. The top candidate is not the one who finds the most problems in this short exercise, but the one who asks the best questions about the users, tasks, environment, constraints, and so forth, and who warns of the dangers of such opinion-based evaluation.

193. **What are the advantages and disadvantages of having a GUI or Web style guide?**

If you have worked on a style guide, describe your method for developing it.

194. **What are some design techniques for preventing errors?**

SPECIFIC KNOWLEDGE ABOUT USABILITY TESTING

195. **What have you done to make usability testing as realistic as possible?**

196. **How do you decide what tasks should be part of a usability test?**

Look for answers like core tasks, most frequent tasks, new critical features, infrequent but extremely critical tasks that could be catastrophic if done incorrectly.

197. **A participant in a lab study has been struggling with the same task for a long time. What would you say to get them to move on to the next question?**

198. **Show candidates a 15-minute segment of a usability test and ask them to list the problems that they see during the segment.**

Make sure that you have permission from the test participant to show that segment.

COMMUNICATION SKILLS

199. **Describe how you have marketed usability in your current position.**

How would you market usability if you were the first usability person in a company?

What activities would you employ to evangelize the importance of usability engineering in the development process?

200. **What factors do you think are important in gaining credibility with developers, marketing, and senior management?**

201. **How do you deal with difficult team members?**

"Tell me about a specific situation in which you had to deal with difficult team members on a project, the actions you took, and the result."

202. Given that a usability person often delivers "bad news" how do you keep good relations with the group that you are delivering the bad news to?

203. How would you present the results of a lab or field study to a project team?

204. How would you present the results of a lab or field study to a senior VP?

205. If you were asked to define metrics for showing a usability team's contribution to the quality of a product, what metrics would you propose?

206. If a manager asked you to define the term "usability," what would you say?

207. How would you get feedback on how you or your usability team is viewed by various groups in the company?

International Usability Testing

208. **If your budget doesn't allow for testing in each target country, at least have a local usability person review the site for potential cultural issues.**

Testing is better, but it's not always possible. An experienced, local usability person may pick up minority cultural viewpoints that a test participant, carefully chosen to be typical, may not be aware of.

209. **Go to an Internet cafe in the target country and talk to people there, if you only have very limited resources.**

Offer a small payment.

210. **Don't assume that the USA, UK, and Australia are the same just because English is their primary language.**

211. **Run the test with local users who match your user profile.**

Even if you have a local subsidiary or affiliate, don't use your local staff as test participants.

212. **Run the test in the native language of the user.**

Just because it may be possible to run usability tests in English doesn't mean that it's a good idea. Although many local users may speak English deceptively well, almost all of them will be more at ease in their native language. Local users who are fluent in English may be atypical users, also. When you run tests in English, native users are likely to suppress comments you would consider important because they can't easily express themselves in a foreign language. People are more at ease when expressing tactful criticism in their own language.

Even the test of an English interface should be conducted in the local language.

213. **Hire a local usability specialist to run the tests.**

In professional usability testing, facilitators must beware of providing inadvertent, unconscious help to test participants. At the same time, facilitators must make sure test participants don't blame themselves when they can't complete even the most basic tasks for which the site was built. Do not let your local marketing or sales staff run your tests, because they have an agenda and they seek opinions. Test participants must be observed without bias in order to discover how well a website performs for them.

214. **Arrange for one person to supervise all usability tests across countries.**

In most cases it will be necessary for an experienced usability professional to supervise the test staff in each of the countries where testing will take place, to coordinate the tests. Supervision is required to ensure similar testing practices and to observe cultural differences. If budget allows, consider having the supervisor travel to all of the test countries.

215. **Consider using simultaneous translation.**

Professional simultaneous translation is required whenever somebody who watches usability tests in other countries does not have a working knowledge of the local language.

Example: An American company wants to do usability testing in Sweden, Germany, France and Spain. They hire a Swedish company to coordinate the testing. The Swedish coordinator has a working knowledge of German. Simultaneous translation will then be required for the tests in France and Spain. The Swedish coordinator can facilitate the tests in Sweden but should not facilitate the German tests unless he or she is intimately familiar with the German language and culture.

216. **Ask about the native language of the employees who will handle your particular test.**

217. **Check the usability firm's quality.**

Often, it may be prohibitively expensive to visit the usability company that will do the testing for you. The section *Assessing the Quality of a Usability Test Firm* offers tips about how you can get an impression of a usability company's quality without visiting them. These tips are not specific to international testing.

218. **Check the quality of the test task translations.**

You probably will supply the test tasks in English to be translated into the local language. Ask for a copy of the translated tasks. If you don't understand the local language, have the tasks translated back into your language by a third party, possibly a colleague. Then check the twice-translated test tasks for important changes in content and for the usual task problems such as hidden clues and unclear instructions.

219. **Prepare a tester's guide that describes how you want the tests to be run.**

The tester's guide must spell out everything in detail and anticipate all contingencies.

220. **Stress an absolute, authoritarian adherence to the tester's guide.**

Otherwise some of the testers may take small liberties with the administration of the test. For example, testers may omit one or two scenarios because they decide that some of the scenarios do not apply to their situation.

221. **Prevent trivial international usability problems by using appropriate checklists.**

Use, for example, the extensive checklists in the *International Users* report in the Nielsen Norman Group *E-Commerce User Experience* series. More information about this report can be found at http://www.nngroup.com/reports/ecommerce. Most of the findings of that report also apply to non-e-commerce websites.

Examples of international usability problem areas:

- Formats for addresses and dates

- Currency issues and currency conversion

- Weights and other measures

- Global English.

Here's an example of advice from that report: Consider showing the month in text form. The only widely used, clear way to differentiate between day and month is to spell out the month name. For example, neither 2 Nov 2009 nor 11 Feb 2009 can be misinterpreted. As a bonus, this date format doesn't need punctuation.

Assessing the Quality of a Usability Test Firm

The scenario: You have decided to outsource usability testing. You want high-quality tests at a reasonable price. The Comparative Usability Evaluation study (see http://www.dialogdesign.dk/cue.html) has shown that there is sometimes no connection between resources required (hourly rate and number of hours required to run a test) and test result quality.

222. **Ask for references and follow up on one or two of them.**

223. **Request a sample usability report.**

    If client usability reports are confidential, ask to read the usability report on the test of the consulting company's own website.

    Check the findings to see whether they are based on user observations. User opinions or expert opinions are less valuable.

224. **Notice whether their sample usability report deals mostly with "micro usability" issues (for example graphics and use of color), or if they also address usability-in-the-large such as suitability for the task.**

225. **Are the recommendations in the sample usability report detailed enough to follow for people who were not involved in testing?**

226. **Inquire about the experience and qualifications of the employees who will handle your tests.**

    Ask if these employees will be available if your test is delayed somewhat.

227. **Visit the usability company's website to get an idea of whether their understanding of usability matches yours.**

228. **Ask to see their consent and nondisclosure form.**

    Is it written in plain language or in legalese? See the example in tip 70.

229. **Ask how they handle internal quality control of their usability tests.**

    Have they even considered the problem?

230. **Notice whether they have any requirements or questions for you.**

    A good usability company will have certain requirements even for its customers, for example proper handling of videotapes. They should also question you carefully about the high-level reasons for running a usability test and your exact reporting requirements.

References

For a longer list of recommended books, see http://www.useit.com/books

Basic textbooks about usability testing:

1. Joseph S. Dumas and Janice ("Ginny") Redish
     A Practical Guide to Usability Testing. Intellectbooks 1999.
     http://www.intellectbooks.com
     ISBN 1–84150–020–8
     (US distributor: ISBS, Portland, OR, 1–800–944–6190)

2. Jeff Rubin
     Handbook of Usability Testing. John Wiley, New York NY, 1994.
     ISBN 0–471–59403–2

There are many great books that describe how usability testing fits into the more general area of usability engineering, for example:

3. Jakob Nielsen
     Usability Engineering. Academic Press, 1993
     ISBN 0–12–518405–0
     http://www.useit.com/jakob/useengbook.html

The politics of usability are described excellently in the book:

4. Deborah Mayhew
     The Usability Engineering Lifecycle, chapter 18, "Promoting and Implementing the Lifecycle."
     Morgan Kaufman Publishers, 1999
     ISBN 1–55860–561–4

This information also appeared as a paper in:

5. Deborah Mayhew
     Strategic Development of the Usability Engineering Function. *interactions*, volume VI.5,
     September 1999.

Ethical guidelines

6. ACM / IEEE–CS Joint Task Force on Software Engineering Ethics and Professional Practices.
     Software engineering code of ethics and professional practice.
      http://www.acm.org/serving/se/code.htm

7. American Psychological Association (APA). *Ethical principles of psychologists and code of conduct.*
      http://www.apa.org/ethics/code.html

About the Author

Rolf Molich owns DialogDesign in Denmark. Molich has been working in usability since 1984. He has previously been a successful independent usability consultant for more than five years, head of IT for a small bank, and responsible for development methodology and user interface standards at a large insurance company. He is currently a visiting lecturer in usability engineering at the Technical University of Denmark.

Molich is the co-inventor of the heuristic evaluation method (with Jakob Nielsen), and is the author of the best-selling Danish book *User Friendly Computer Systems*, which has sold more than 25,000 copies to date. He also conceived and coordinated the comparative usability evaluation studies CUE-1, 2, 3, and 4 where muliple professional usability teams tested the same applications.

Molich was a principal investigator in NN/g's large-scale usability test of 20 US e-commerce websites involving more than 60 users. His focus areas in this study were usable search, trust and international usability.

Molich has an M.S. in Software Engineering from the Technical University of Denmark from 1974.

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- **Intranet Usability** ($23,000). Combines a full-day tutorial with the lessons from our testing of 27 intranets and a full-day workshop about your own intranet's usability, based on our review of your design.
- **Application Usability** ($16,000). Two days intensive course on everything from screen design (buttons, field labels, widgets) to feature and workflow design.
- **Writing for the Web** ($9,000). A writing workshop using your own sample content for the rewrite exercises.
- **Fundamental Guidelines for Web Usability** ($9,000). The basics everybody should know about users' online behavior and how to design better sites.

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- PR section of corporate sites: supporting journalists
- Investor Relations area of corporate website: supporting investors
- Site map usability
- B2B: guidelines for converting business users into leads and customers

INTRANET USABILITY
- Intranet usability guidelines: 10 reports based on user testing of 27 intranets
- Intranet information architecture (IA)
- Intranet design annual: published every year about that year's 10 best intranets
- Sector-specific intranets: financial services, manufacturing, technology, retail, knowledge-intensive, and government agencies
- Intranet portals: report from the trenches
- Social networking and collaboration features on intranets

E-MAIL USABILITY
- Email newsletters
- Transactional email and confirmation messages

APPLICATION USABILITY
- Application design showcase: case studies of 10 award-winning app UIs
- Customization usability
- Flash and Rich Internet Applications (RIA)

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- Web usability for senior citizens (age 65+)
- Beyond ALT text: improving usability for users with disabilities
- Usability of websites for children (age 5–12)
- Teenagers on the Web (age 13–17)

USER-CENTERED DESIGN METHODOLOGY
- Agile usability: Best practices for user experience on Agile development projects
- Return on investment (ROI) for usability
- Paper prototyping: a how-to video (32 minute DVD)
- 230 tips to improve the way you run user tests
- Recruiting test participants for user testing
- Testing users with disabilities
- How to conduct eyetracking studies

OTHER
- Mobile web usability
- Streams, Walls, and Feeds: notifications, messages, and alerts sent through social networks and RSS
- Donation usability for non-profit and charity websites

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