

Students on the Road to Somewhere

By Anthony D. Andre

Students are always asking me what they can do to better position themselves for a professional career in human factors. The following article summarizes some of my thoughts on the subject, along with advice I have received over the year.

Class Work

The grades you get mean little per se—few employers look closely at grad school transcripts—but what you learn from your academic program will go a long way in shaping your professional career. First and foremost, you should take any and all human factors/ergonomics courses your school has to offer, regardless of the department that offers them. On the same note, don't hesitate to buy seminal human factors books and reference material that are not used in your program. You will continually be "tested" on your overall knowledge of the history, basic issues, founders, and general lexicon of the profession. In fact, this knowledge will sometimes be the quickest way to distinguish yourself from the plethora of impostors acting as human factors professionals, with whom you will often compete for jobs.

More Class Work

You can never go wrong by improving your math, statistics, experimental design, and computer programming skills. Of these four areas, I would place special emphasis on statistics and experimental design. Don't let anyone tell you these topics aren't important in the applied world.

Beyond these basics, choose courses that will strengthen your knowledge in one or more focus areas, such as aviation psychology, training, workplace ergonomics, or human-computer interaction. Also, try to obtain some working knowledge of your focus area as it relates to other fields, such as industrial engineering, industrial design, psychology, kinesiology, anthropology, and computer science. The more you are able to speak the language of related fields, the more marketable you will be upon graduating.

Computer Literacy

If your professor can learn to use a computer, so can you! Every student should be proficient in the use of at least one popular word-processing, spreadsheet, statistics, presentation, and communications (E-mail) program. Knowledge of the Internet is a big plus.

Research

I realize that your research resources are, to a large degree, limited to those available to the faculty with whom you work, but one can perform research beyond the required M.S. and Ph.D. theses. When possible, expand class projects with other students or the professor, and publish these projects if appropriate. Also, learn to conduct research without computers, programmers, and million-dollar grants. For example, it doesn't require huge resources to study, via observations and interviews, how people navigate shopping malls, amusement parks, or airports. Nor does it require much to evaluate how many of your fellow students can operate various consumer products without instructions. Simply stated, you need to learn how to observe, describe, and remedy situations. This can't be taught—it has to be experienced.

Now Read This

Don't ever stop reading and maintaining your knowledge of current themes and hot topics in the field (as well as the authors associated with them). I admit this is an arduous task, considering that our profession produces an overwhelming number of books, journal articles, technical reports, and conference proceedings.

Here's one idea I have implemented that might help you to keep current: First, ask each student in the program to list two or three journals that are important to his or her study or interests. Then have each student copy and distribute the table of contents for one or two of those journals throughout the year. (If resources are low, dedicate a bulletin

board to the project so that only one copy of each table of contents need be posted.) If you have the time and resources, an even better approach is to have each student copy the abstract of each article in his or her assigned journals. This will provide a good overview of the topics and findings of the published research.

However, don't be too frustrated by your inability to thoroughly read everything relevant to your work. Sometimes just knowing that an article was published on a particular topic, and by whom, is enough.

Put Your Name in Ink

Publish, publish, publish. There's no more prestigious accomplishment, or more widely used barometer of ability, than the publication list. This is true even for those who don't expect to enter a career that requires publishing per se. The fact is, almost every job requires some form of writing, and those who can best communicate their ideas in written form usually succeed. Although quantity can be important, I urge you to focus on the quality of your writing as well as the ease with which you are able to write.

Presenting Is Everything

I know—just the thought of public speaking makes your palms sweat and your head dizzy. The truth is, though, you won't go far in the professional world if you can't clearly and comfortably present your ideas. Don't think you're off the hook if your plans for the future don't involve public speaking. In reality, you are always "presenting," whether it's at a conference, in a company meeting, or to your boss.

Ask your professors to dedicate some seminar time to this important issue. Meanwhile, here are a few speaking tips: (1) Remember, you know more about your research than anyone in the audience. Just relax and say what you did, why you did it, and what you found. (2) Check the presentation room beforehand: Stand at the podium and imagine how you will coordinate the audiovisual apparatus, lights, and so on. (3) Never read your presentation, and avoid using written notes or memorizing your talk. Create overheads or slides that provide key words to guide you. (4) Be as visually oriented as possible. Don't just describe your

experimental apparatus or design—show a picture or schematic representation of it. (5) Never show a blank screen or leave a slide up for long—create a new visual for every point. (6) After practicing your talk, ask yourself if it conveys the importance of your study and what the audience should learn from it.

The People Connection

Not only should you develop professional and personal relationships with your adviser and other faculty, you should get to know as many other human factors professionals and students as possible. Some good ways to start are to ask people questions about their work, if they know of articles on a specific subject, or if they have advice for getting into their line of work. Most professionals have egos that make us always willing to talk about ourselves to interested others!

Try to attend as many conferences as possible, and, when there, try to meet others who may share your interests. A quick introduction (your name, the school you attend, who you work with, what you study), a little flattery, and a business card can go a long way. Don't feel obliged to hang around after that, especially if the conversation isn't flowing; it's better to follow up with E-mail, a letter, or a phone call.

Final Thoughts

Notwithstanding the importance of these activities, keep in mind that hard work, enthusiasm about what you are doing, the ability to work well with others, and an open mind create the foundation of a successful career. Finally, don't ever stop having fun after entering the professional world!

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