

By Jon A. Schmidt, P.E., SECB

Tt seems trivial to say that engineering is a profession, and that its $oldsymbol{1}$ practitioners are professionals. After all, when we become licensed, we gain the privilege of calling ourselves "professional engineers". Of course, that in itself is fairly unique - doctors and dentists cite their advanced degrees (MD, DDS), lawyers do the same (JD) or use a fancy abbreviation (Esq.), and many others give the acronym for their certifications (CPA, for example). The fact that they are professionals is evidently taken as a given or implied by the very existence of the formal credential, so that it need not be stated explicitly.

This led me to wonder exactly how any particular occupation comes to be viewed as a profession. Apparently, this question has been the subject of considerable sociological research over the last century or so.

The earliest set of criteria seems to have been set down by Abraham Flexner in 1915: "Professions involve essentially intellectual operations with large individual responsibility; they derive their raw material from science and learning; this material they work up to a practical and definite end; they possess an educationally communicable technique; they tend to self-organization; they are becoming increasingly altruistic in motivation."

These characteristics were rearranged a bit and succinctly stated by Ernest Greenwood in 1957: "All professions seem to possess: (1) systematic theory, (2) authority, (3) community sanction, (4) ethical codes, and (5) a culture." Each component deserves a little bit of further elaboration; what follows is adapted from a 1978 doctoral dissertation by Myron Lubell.

- 1) Systematic theory Professionals have a knowledge set that is based on abstract principles, more so than operational procedures, and thus must pursue an extensive formal education.
- 2) Authority Professionals have significant control over the nature and extent of the services that they render, because they serve clients who are generally unable to judge the quality of those services.
- Community sanction Professionals are subject to licensure or certification that delineates varying degrees of occupational jurisdiction in accordance with criteria over which they have considerable influence.
- Ethical codes Professionals adhere to standards of behavior that are explicit, systematic, binding, and public service oriented; prescribe colleague relations that are cooperative, equalitarian, and supportive; and are enforced by their associations.
- 5) Culture Professionals have a career orientation that leads them to high personal involvement in their work and satisfaction with not only monetary rewards, but also symbols such as titles and awards.

In 1964, Harold Wilensky noted that an increasing number of full-time occupations were seeking to become recognized as professions. He laid out a fairly typical sequence in which new institutions would be established along the path to "professionalization": training schools, university schools, local associations, national associ-



ations, state licensing laws, and (finally) a code of ethics. He also observed that "the traditional model of professionalism emphasizes... autonomous expertise and the service ideal" and suggested that "exclusive jurisdiction and professional authority" are ideally based on "knowledge that is neither too general and vague (thereby familiar to laymen) nor too narrow and specific (therefore easily programmed)."

Finally, in 1988, Michael Bayles identified three necessary features of a profession, as summarized by Daniel Wueste: "(i) extensive training that (ii) involves a significant intellectual component and (iii) puts one in a position to provide an important service to society." Bayles also made a helpful distinction between "scholarly professionals", who work for a salary and either have many clients at one time or no personal client, and "consulting professionals", who act primarily on behalf of an individual client on a fee-for-service basis.

It seems clear that structural engineering qualifies as a profession in accordance with all of these various definitions. Its history generally has followed the usual path to achieving that status, including the last step NCSEA adopted a code of ethics this year. The one aspect that might be a bit questionable is the area of authority. We cannot undertake any specific project unless someone retains us accordingly. And since our clients tend to be architects, engineers in other disciplines, or in-house project managers, they often consider themselves (right or wrongly) to be perfectly capable of evaluating how well we do our jobs.

This is one of the factors that make "commoditization" a real challenge for structural engineers. As Wilensky recognized, if the perception grows among those who hire us that what we do has become so "narrow and specific" that it can be "easily programmed", we will increasingly be viewed as mere technologists - and compensated accordingly. If we wish to continue being acknowledged instead as true professionals, it is vital that we be more effective in communicating the unique value of our capabilities to our clients and to the public at large.

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