

Experience – Options & Alternatives

by
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Introduction

Experience to gain licensure as a surveyor has been one and sometimes the only requirement necessary to sit for the professional surveyor's exam. Many States require the experience be in boundary retracement with a diversity between office, field, and courthouse (research). Experience has always been advocated as an essential if not the only proper method to bring about an adequately prepared, well-rounded, and knowledgeable survey practitioner. Often when the quality of surveying or survey practitioners are called into question, experience requirements are made more stringent. When some members of the profession have urged that experience be reduced in favor of or only honored when coupled with formal education, outcries have often resulted. Licensing surveyors with less than two years of experience or none at all conjures images of new licensees eagerly rushing to set up their own practice immediately upon licensure. Bungled surveys would be widespread and common and only corrected after learning from their mistakes and then only at great expense to the client. While experience has often been allowed to substitute entirely for academics, academics have not been allowed to substitute entirely for experience. Within the surveying and engineering profession there is thought to be some skill, knowledge, or ability essential for competent practice that can only be gained through adequate experience. This article will explore some problems and alternatives to the present experience requirements.

Problems

There are several problems associated with an experience

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requirement. Quality positions are disappearing. Arduous experience tends to hurt the profession rather than aid it.

Quality Positions are Disappearing

Perhaps the greatest difficulty with experience requirements is those internship positions that provide quality and well-rounded experience are fast disappearing. Surveying technology has grown more sophisticated, replacing employees, while at the same time employees are becoming more expensive and exposing employers to greater liability. Consequently, survey firms are operating with fewer or no employees.

Employers Are Not Always Competent Instructors: A licensed practitioner is not necessarily a competent instructor, able and willing to teach or give employees the skills, knowledge, and training that the "experience requirement" is thought to ensure. Even the most die-hard advocates of an experience requirement must admit that some if not all the hundreds of licensed practitioners supervising surveyors-in-training often provide less than reliable, accurate, and complete instruction to their apprentices. There are numerous examples to show that many practitioners are deficient in their management, writing, accounting, and communications skills. How then can these practitioners properly instruct and prepare their employees?

In cases where the employer provides quality instruction, extensive instruction is often limited. In other words, most knowledge is learned by providing new challenges generally encountered during the first few weeks of employment. As time passes, the challenge drops off and so does the learning curve. Four years of experience simply becomes the first year repeated four times.

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Positions are being eliminated in small firms: A large portion of boundary retracement surveying is performed by small or solo practitioner firms. In the past a small, full-time survey practitioner usually employed at least four people including the licensed practitioner. The employees worked directly with and under close scrutiny of the licensed practitioner. Under this arrangement, quality control and education was continuously on-going under the control of the very person whose reputation and profit stood to benefit from diligent, knowledgeable, and hard-working employees. Responsibility and tasks were shared and shifted between members to provide well-rounded training, reduce boredom, and challenge employees. On a typical day, one person was tasked to research or stay in the office to answer the phone, draw the maps, and serve as a receptionist while the other persons went to the field. In the field, two people measured distances using a tape. A third field person was employed to keep the two tapepersons measuring on a straight line. In recent years, technology and competition has reduced field crews to the point where many field crews are now one person - the licensed practitioner. G.P.S. receivers and automated theodolites interfaced with data collectors require only one person to do the work formerly done by three. The office is similarly automated with voice mail, electronic mail, data downloading hardware, CAD, and word-processing. As a consequence, many solo practitioners work on their own or make do with only the aid of clerical staff, family members, or part-time help. The result is that the numerous positions in small firms that were instrumental in training and providing quality boundary retracement experience to so many of today's practitioners have or are fast disappearing. They are unavailable for tomorrow's practitioners.

Diversified experience is not always available in large firms. Unfortunately, large firms with an accompanying large number of employees often fail to offer the same quality and diversity of

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boundary retracement experience that smaller firms provide. Economy-of-scale dictate that many employees in large firms work in one area all the time. Diversified experience is rare or hard to get. Furthermore, large firms tend to avoid or simply cannot compete with small firms for comparatively low-profit boundary retracement services. Large survey firms favor the diversified and more profitable subdivision and construction surveys. While employees of large firms tend to have quality experience in surveying fields such as G.P.S., G.I.S., development design, computer technology, and so on, they lack the diversified boundary retracement experience often required to sit for licensure.

Partnering and joint ventures are being used to replace employees.

Another fairly recent phenomena is the increase in partnering and joint ventures. In the past, the survey practitioner often relied on a trusted apprentice to run the office in their absence brought on by vacation or business trips. The modern trend is to have one or more licensed partners or employ joint ventures. Licensed partners allow the risk, time commitment, and responsibility of practice to be shared. Joint ventures allow two solo practitioners to cooperate loosely to "cover" each other when one practitioner needs some off-time or help – much as doctors do when one is out of town or on vacation. In the past joint ventures were difficult given the low density of practitioners, difficulty in travel, and low population density. The advent of the auto and better road systems, increase in population (client) density, and concentration of licensed surveyors, now allows competitors to cooperate on certain ventures. Partnering and joint ventures allow responsibility and risks to be shared and employee and their associated costs to be reduced or eliminated. The result is that partnering and joint ventures are often more attractive than hiring a qualified employee.

Employee costs frequently exceed technology costs. Another

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significant factor causing the loss of employee positions is the training, costs, and burdens associated with an employee that are not present with technology meant to replace employee labor. The sophistication of surveying equipment and technology no longer allow the practitioner the freedom to hire a high school graduate that can be quickly trained to use and understand the rudimentary survey techniques and practices used daily. On the other hand, the wages of educated and trained employees can be considerable and often prohibitive for the small practitioner. Furthermore, maintaining the existing number of employees is costly. Employee continuing education costs, workman's compensation insurance, payroll taxes, social security, mandatory minimum wages, vacation and sick time surcharges, vicarious liability insurance premiums, and employee mandated health insurance costs frequently equal or exceed the employee's take-home pay. Furthermore, mandated maternity leave, Americans with Disability Act, and other labor laws complicate employment practices. An employer, faced with a choice between a new employee or equipment that can replace many of the tasks an employee can do, often choose the later over the former even though the initial costs may be greater. For those firms that continue to need some physical help, partnering, joint ventures, and family members are often chosen as alternatives.

Vicarious liability and an increasingly litigious client base force employers into a more defensive stance that includes a reduced payroll. Related to the cost of an employee is the liability associated with employees. An employer has always been liable for their employees' acts. However, the dramatic increase in lawsuits and damage awards have caused many employers to reconsider their vicarious liability exposure. The fact is that most employees are not as conscientious as their employer and increase the possibility of tort claims. While an employer can obtain insurance to cover most tort liability, some employers can't afford the insurance or deductible. Consequently

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practitioners are reducing the number of employees (i.e. field crews) so they can provide more direct supervision, reduce the number of employees that can make mistakes, and reduce or eliminate insurance costs.

Experience Thwarts Prospective Practitioners

In addition to the difficulty in finding and obtaining quality experience, is the dissatisfaction with the repetitive experience that is required in order for a person to sit for the exam. As licensing boards increase the length, type, and diversity of experience required, many potential surveyors seek other careers or simply give up. In other words, requiring more experience becomes counter-productive toward obtaining quality practitioners.

The combined education and experience requirements mandated by some boards do not allow licensure until long after entrance to other professions is possible. Why would the best and brightest high school students and adults be attracted to a profession where the minimum entry age is 28 years or older (four year degree plus six or more year's experience), when so many other lucrative and less time-demanding professions are available? For military veterans, non-traditional students, and mature adults seeking a new career, the eventual age when they may enter the profession can be considerably more. Entry into other professions thought more lucrative is more straight-forward, have no or less demanding apprenticeship time, and allow licensure in less time. For example, upon graduation from high school, an intelligent student can be licensed to practice pharmacy in four years (22 years old) and law, dentistry, medicine, or ministry in seven years (25 years old).

Furthermore, requiring more time does not correlate with more knowledge with time. Two plus years of experience are more often

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then not one year of experience repeated many times over. The knowledge learned by one survey apprentice under one practitioner is seldom comparable with the knowledge obtained under another practitioner. The result is that the quantity of the experience seldom equates to quality.

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To solve the problems brought about by experience requires developing a process that will ensure an applicant receives the knowledge, ability, and skill thought to be gained by experience.

More Testing

Increasing the scope and depth of professional testing is an obvious answer. However, many would argue with some justification that there are many essential skills that are necessary for practice that cannot be put in a test format. In addition, a test that would examine all relevant skills would take days to prepare, offer, and grade. Consequently, testing is not considered a substitute for learning certain skills, knowledge, and ability by experience.

Rigorous Formal Academic Training

A second possible solution is to provide the knowledge, ability, and skill ordinarily gained through experience by formal academic training. Many other professions have recognized the limitations of experience and now require a professional or graduate program to teach the specialized knowledge, skills, and ability required of their professional members. The professions of law, ministry, and medicine have all evolved from an apprenticeship program that once relied entirely on experience. They now require a post graduate program that does not require any experience before

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licensure. It stands to reason that if justice, personal health, and the human spirit are all adequately protected by licensing persons without experience so too can property rights and title be adequately protected by licensing surveyors without experience.

The following is an example of a surveyor licensing law recognizing formal graduate education to qualify for survey licensure:

An applicant shall be allowed to sit for the exam upon successful graduation from an ABET accredited graduate or post-undergraduate professional program containing at least 24 credit hours of surveying subjects approved by the Board. An applicant who successfully passes the exam shall be licensed as a professional land surveyor.

This method of licensure has several advantages. First, it recognizes and encourages not only a four-year degree but a graduate degree. Second, the profession through its members on the Board have more control over the subjects and content thought important for professional practice. As a consequence, the education of practitioners becomes less haphazard and more uniform throughout the profession. Third, a formal graduate program provides core subjects that are common knowledge for all practitioners. The program soon defines the future of survey practice rather than an employer's knowledge and the demands of current practice. Fourth, a common education background that challenges students imparts a certain élan and esprit-de-corp among its graduates who are soon practitioners – an alumni spirit that evolves directly into professional spirit. This in turn fosters cooperation between members to advance the interests of the profession. A fourth benefit, at least to the practitioners themselves and not necessarily the public, is a dramatic increase in wages and fees. To a certain extent undergraduate and more so graduate degrees establish an appreciation among graduates for what they had to go through to learn the skills they need to

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achieve their graduate status and practice. Their concept of self-worth in turn evolves into a demand for higher wages and fees for their services. Without doubt, a well-rounded education teaches graduates that business opportunities and profits in a competitive market are founded upon good management practices, economies of scale, and business acumen – rather than simply pricing below the competition.

Restructuring Experience

A third possible solution is to restructure the experience requirement. Experience provides one aspect of practice that no amount of education can ever provide – confidence. Knowledge, skill, and ability that produce quality services when coupled with confidence produce a practitioner who 1) has high standards that are unshakable, 2) is steadfast in character, and 3) is reliable in performance. If the profession demands consistent, reasonable, and quality experience, another method should be adopted to provide the experience.

Ordinarily, experience is required before licensure. An alternative is to require the experience after licensure. The license given after the education but before the experience would be similar to a junior driver's license that many states use for drivers 16-18 years of age or an internship program formerly used for medical doctors entering general practice. Consider the addition of the following language in a licensing act:

An applicant with a four-year degree with at least 30 credit hours of surveying subjects satisfactory to the Board, upon successfully passing a sixteen hour exam, may apply for and be issued a temporary license by the Board. A temporary license shall accord the licensee with all duties, responsibilities, and privileges of a regular license.

A temporary license may, besides other causes shown, be revoked upon the failure to meet any of the following conditions:

1. The licensee shall within one month obtain a seal the same

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in shape and design to a regular license seal except the letter "T" shall clearly appear at the end of the license number.

2. All correspondence, plans, descriptions, reports, contracts, billings, and work products shall be submitted for review to a licensed surveyor (henceforth known as a "reviewer") acceptable to the Board. A copy of any material submitted to the reviewer shall be sent to the Board with the words "REVIEW MATERIAL" along with the temporary license number. Both the words "REVIEW MATERIAL" and the license number shall be prominently written on the front lower left hand corner of the package or envelope.
3. All items identified for submittal shall be submitted prior to or within one week after showing or giving to the client.
4. Any item found deficient by the reviewer or Board shall be corrected within five working days after the demand is made for correction.
5. All services provided by the licensee shall comply fully with the minimum standards of practice.

A licensee holding a temporary license may apply for a regular license upon the following conditions:

1. Upon successful completion and review of no less than 10 boundary retracement surveying services properly completed.
2. An affidavit prepared and sent by the reviewer to the Board attesting (to the best of their knowledge and belief):
 - a. that a proper review was made of all work;
 - b. there was proper performance of the services;
 - c. all conditions necessary for application for a regular license have been met;
 - d. full and complete payment for their review services have been received;
 - e. they are not aware of any defects in character, integrity, and professional ethics; and
 - e. they would and do make an unconditional recommendation that a regular license be awarded.

The Board after examination of some or all the material submitted by the licensee to the Board may:

1. Award a regular license;
2. Keep the temporary license active until successful revision or completion of additional services; or
3. Revoke the temporary license. Provided, however, that revocation of the temporary license after proper application for a regular license shall entitle the former licensee to count time in practice during the period they held a temporary license. This experience will count as experience toward licensure under other sections of this act.

A reviewer shall be entitled to charge the holder of a temporary license no more than \$200 per client in compensation for their review of material for a client.

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The cost to renew a temporary license shall be 1.5 times the cost of renewing a regular license.

There are several advantages that are realized from allowing experience after rather than before licensing. First, this method ensures the licensee is taking responsible charge of the services – their seal and signature appear on all work products. All too often applicants seeking licensure submit experience summaries stating lofty titles as "party chief" when in reality they had little or no control, responsibility, or say over the services that were rendered. Second, this method provides a relatively quick and certain way for a prospective applicant to become a licensed surveyor. These attributes in turn help encourage the best and brightest high school students and older adults to embark on a path of formal surveying education. Third, recent graduates can market themselves as graduates and licensed surveyors. Higher salaries, more job opportunities, and better job opportunities can be expected. This is additional attraction for bright high school students and older adults to pursue surveying education and eventually a career in surveying. Fourth, this method provides a realistic quality control of the experience. Not only is a reviewer examining the quality of the licensee's work but the Board also has ample opportunity to comment on the work directly. The Board's review not only includes the work of the licensee but also indirectly the thoroughness and knowledge of the reviewer. Fifth, by setting and monitoring the first services of a practitioner's professional career and insuring high standards at this time, the remainder of the licensee's career is likely to be the same.

While a licensee under this method would be able to immediately go into solo practice, from a practical standpoint this would be extremely rare unless the licensee is licensed in another

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profession (e.g., professional engineer) and is already in solo practice. Aside from the obvious reason that the licensee lacks equipment, reputation, and a client base, their fees would not likely be competitive because of the reviewer costs and learning time the licensee is likely to encounter with their work. More likely, they will be hired by a firm eager to take on a partner or manager trained in the newest technology. The employer, for their part, would be willing to become the licensee's reviewer and see they have quality work acceptable to the Board the licensee can apply toward obtaining their regular license.

Conclusion

For these and other reasons, internship positions that are available to provide experience acceptable to sit for the licensing exam are being eliminated. Requiring additional diversity or a particular type of experience merely exasperates the problem of getting the best and brightest to enter the profession. Consequently, licensing boards and professional societies need to carefully weigh these limitations when they consider or advocate for more stringent experience requirements for licensure. The time has come to explore alternatives to the typical experience requirement. This article provides a few suggestions among many options that should be examined by the profession and licensing Boards. As the surveying profession evolves, the training and requirements for licensure should evolve with it.

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