The Log Book Training Scheme – Adding Value to Graduate Engineers' Training Through Mentoring

by Ir. Juares Rizal Abd. Hamid

THE logged training scheme for graduate engineer members of the IEM has been in practice for over 30 years, since January 1982. Initially referred to as Log Book System (LBS), it is now known as Log Book Training Scheme (LBTS).

The mentees' experiences and training activities are continually entered in IEM-issued log books for a quarterly review with mentors. This is done over a minimum period of three continuous years, with annual progress reports submitted to the IEM for quality conformance check.

The scheme has helped many mentees prepare for the IEM Professional Interview (PI). Its training format facilitates those who have not been able to secure work under the direct supervision or guidance of senior engineers of the same engineering discipline in their work place.

Securing the PI candidacy via the LBTS is one way to attaining the IEM initial corporate membership (MIEM), leading to possibly applying from the Board of Engineers Malaysia (BEM) for the registered Professional Engineer (P.Eng or Ir.) standing.

How does LBTS mentoring fare as a choice route towards the PI candidacy – the alternative being for graduate engineers to independently self-prepare for it?

How has mentoring benefited – and continue to benefit – mentees in preparing them for, in particular, PI candidacy, and in effecting gainful training and development in professional engineering generally?

As of June 2013, 210 member graduate engineers completed the LBTS between 2006 and 2012 (Figure 1).

There were 609 mentors registered with the IEM during the same period (Figure 2). Most of the nearly 3,000 LBTS log books printed during this period had since been procured from the IEM, so there should be still some 2,700 procured log books that have yet to be reverted to IEM – either as (mentee-mentor) annual progress reports or as (mentee) confirmation to commence the LBTS. Assuming the log books not reverted are in the process of being accordingly acted upon, and given that the standing graduate membership of the IEM at around 9,400, a cursory estimation indicates only 30% response to the scheme and on average, only around 7% yield on completion of the scheme by participants.

The overall performance suggests a tepid response to the scheme, particularly by graduate members. Hopefully, this is not the result of a misperception that the LBTS is not, or will not be useful in preparing mentees for PI candidacy or in guiding them to attain gainful learning of professional engineering knowledge and acquiring competency.

It is definitely worth the while to inform graduate engineers of how LBTS can benefit them.

The LBTS is essentially a mentee-driven format of training. First, the mentee communicates with the mentor, who will be from the same engineering discipline, to plan and effect the training supervision.

Year	Civil	Chemical	Electrical	Mechanical	Electronics	Others	Total
2006	12	6	6	6	5	5	40
2007	4	3	5	4	7	2	25
2008	2	2	2	4	4		14
2009	7	6	7	8	9		37
2010	7	3	4	6	5		25
2011	8	5	7	8	6	3	37
2012	6	5	7	6	5	3	32
						Total :	210

Figure 1: List of Candidates Completing the LBTS by Engineering Discipline between 2006 and 2012 (Source: IEM)

Discipline	No. of Mentors
CNI	270
Mechanical	150
Chemical	49
Electrical	102
Electronics	17
Others	21

Figure 2: List of IEM Registered Mentors between 2006 and 2012 (Source: IEM)

This means the mentor will continually provide guidance and monitor the progress of the mentee for the acquisition of relevant knowledge and competencies.

Mentor and mentee will hold interactive meetings at least once every three months to track and clarify the reported progress of the mentee's work experience and training activities and to submit an annual report to the LBTS for milestone quality conformance check.

Continued guidance allows mentor and mentee to progressively assess the latter's experience and training and for the mentor to offer advice on what a mentee has to do to close any knowledge or competency gap.

A similar mentoring facility can also be provided to graduate engineers by their employees, either as subordinated or direct supervision (wherein such extended guidance and progress monitoring are internally placed and inherently on the job) or an unsubordinated or indirect supervision (where in the guidance and monitoring are externally placed but laterally on the job).

The latter format of mentoring is conceptually similar to LBTS except that the extended guidance and progress monitoring by the latter are externally placed but laterally informed of the job.

However, direct and indirect in-house supervision mentoring schemes may not capably effect preparatory objectives toward PI candidacy though these can effect guided acquisition of knowledge and competency to meet mentee's professional development vis-à-vis organisational objectives. This is because the senior engineer-mentor may not be a MIEM or a P.Eng, or of the same engineering discipline as the mentee. Such situations may arise because of staff movement, including possibly the practice of multi

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(engineering discipline) tasking as practiced in many project engineering services at process plants.

On the other hand, participating in the LBTS will secure uninterrupted and continued mentoring for the mentee, independent of in-house staff and staffing situation. In other words, an IEM-assigned mentor can accordingly function either as a "substitute for" or as a "complement or supplement to" the in-house mentor, in as far as and particularly where the PI candidacy training and development is concerned.

Mentees can expect mentors to request visits to their workplaces (at least once) and to communicate with them regularly to keep abreast of their learning progress and development.

Mentors will assure that in-house supervising engineers (if not a MIEM or a P.Eng) are aware of the mentees' progress and development. This is usually done by having the supervising engineers officially attesting to the authenticity and executive responsibility of the work done by mentees.

Mentors will advise mentees of any additional forward experience and training needed (if not possibly acquired at the workplace) to qualify for the PI candidacy. They will also guide and offer advice on basic professional engineering practices (including code of ethics) as well as regulatory requirements concerning public safety and the environment. Mentees can also have mentors as ready proposers to sit for the PI. They can submit their completed log books as ready attachments to the reports on Summary of Training and Experience, and (if included earlier as part of the completed log books) on Detail Technical Report, required to be prepared for the PI by candidates not taking the LBTS route.

Development and changes in science and technology in engineering and design, information and communication, engineering operation and maintenance, have also impacted changes in workplace management and practices, including in the strategy and practices in engineer training and development. A reality is the wide use of virtual communication to facilitate training.

The operative LBTS can make use of this to facilitate communication between mentors and mentees and allow experience and training activities to be monitored more closely and routinely so that quarterly meetings can be spent on deeper discourses to identify (with respect to PI candidacy requirements) knowledge and competency gaps and to extend advice on the possible forward and fastest ways and means to close them.

Virtual communication can also be used to facilitate communication between mentors too – in the interim of and between LBTS mentors' workshops. Mentors can share experiences or discourses on prevailing issues with regards to the preparation of mentees for PI candidacy, and of general knowledge on mentoring and coaching.

The use of virtual communication is expected to be a motioned topic at a LBTS' mentors workshop planned for 2013.

Another topic expected to be motioned will be a proposal to revise the present operative LBTS guidelines to include a checklist on professional engineering knowledge and competencies specific to a particular, and common, to all engineering disciplines. ■