

# Reflective Practice

Recently I was trying to get rid of the material that have accumulated in my cupboards over the years, in order to gain some space for my current files, when I came across the assignments and question papers of a doctoral degree programme that I was following with the university two decades ago. Some of it is quite outdated compared to the current study programmes but I was amused by one of my answers to a question in the final exam which, I have no doubt, would be of interest to you as professionals. Surprisingly Reflective Practice does not seem to have been properly introduced to the construction industry yet.

## Question 3:

Increasingly, professions are requiring their members to engage in “reflective practice”. How might this be introduced into the construction industry?

## Answer 3 :

Construction industry employs professionals in two main frontiers:

- a) Design teams of Architects, Quantity Surveyors and Engineers for pre-contract activities.
- b) Construction teams of Project Managers, Quantity Surveyors and Engineers for post contract activities.

Where the Clients are either public sector organizations or large private sector developers, professionals such as Architects, Engineers, Project Managers and Quantity Surveyors are generally employed to perform the Clients' Contract Administration activities, which form a third frontier in the industry. Clients also appoint independent teams of Engineers and Quantity Surveyors to supervise the construction work of their Contractors and to perform Contract Administration functions. This third frontier would need special attention in the introduction of reflective practice.

Reflective practice is not a well known subject in the construction industry, even though professionals such as those stated above, sometimes, unconsciously engage themselves in reflective practice to some extent. Generally these professionals declare that, what they are offering their Clients is the technical expertise. Clients too expect only this technical expertise from the professionals mainly because they are unaware about the importance and benefits of reflective practice. Therefore the first step in introducing reflective practice to the construction industry should be an awareness campaign to educate the professionals and their Clients on the subject of reflective practice. This could be launched through:-

- journals of Professional Institutions
- construction industry newspapers and magazines
- addenda to curricula of current university degree programmes of Architects, Engineer's and Quantity Surveyors.

Eventually the Professional Institutions could perhaps add to the Code of Conduct of their members and make it compulsory for all professionals to be adequately knowledgeable and to engage themselves wherever practicable, in reflective practice.

(1) “Employers” according to the terminology in Standard Forms of Contract.

Concurrent with the above process, the Contracts between professionals and their Clients should be gradually modified to make provisions for reflective practice in place of technical expertise. This would assist to make room for reflective practice in bureaucratic environments where reflective practice appears as a threat to conservative systems. The example presented later in my answer shows how a professional reflects-in-action in a Construction Industry scenario and how the bureaucratic Contract Administrator of a Client Organization treats it as a threat to his conservative system.

In his book “The Reflective Practitioner – How Professionals Think in Action”, Prof. Donald A. Schon attempts to provide definitions to reflective practice which when summarized would describe the “reflective practice” as a process of reflection-in-action where a professional engages himself in a continuous dialogue with a situation and listens to its back-talk when dealing with uncertain, unique and/or varying scenarios, in order to find appropriate solutions by modifying or reframing problems which either he has originally framed or were framed for him.

This reflection-in-action is quite different to reflection-on-action which is a post-mortem on a situation which has already occurred.

Reflection-in-action should take place in the action-present . Whilst action-present for situations could be quite brief during the construction stage of a project, ample duration is usually available during the design stage. Therefore the professionals in the design team could create a (in Schon’s terms) virtual world for them to reflect-in-action and to experiment with alternatives and test their hypotheses. This process is not uncommon, and even today, professionals practice this without knowing that they are reflecting-in-action. Therefore introduction of reflective practice to this frontier would be relatively simple, provided that Clients are adequately made aware of the process, because it is essential to continue a dialogue between a professional and his/her Client during the process of reflective practice.

In the construction frontier, the professionals employed by Contractors have to find solutions to problems and alternative methods of working to make processes more efficient and profitable. Although these professionals are under the impression that what makes them successful in such endeavours is their technical expertise and/or intuition driven by veteran experience and capability (“repertoire” in Schon’s terms), in reality what they practice to some extent is reflection-in-action. Therefore this too would not be a difficult frontier to introduce the process of reflective practice.

This would leave the professionals employed by a Client as Client’s Contract Administrators and, the supervision team (“The Engineer” under Standard Forms of Contract such as FIDIC) appointed by the Client to administrate the Contract, as the third frontier in the construction industry which needs the introduction of reflective practice. It would not be an easy task to introduce reflective practice to this frontier due to many obstacles some of which are listed below:

- Unlike the other two frontiers, there is hardly any practice of reflection-in-action even unconsciously, in this frontier.
- The Client and his Contract Administrators expect these professionals to use only their technical expertise to monitor, inspect, test and report whether the Contractor is executing the Works strictly in accordance with the Client’s specification. Any criticism of the specification and/or any dialogue outside the regular routine (especially with the Contractor or Sub-Contractors) are usually met with disapproval and suspicion.

(1) Action-present is Schon’s term for the zone of time in which action can still make a difference to a situation.

(2) “The Engineer” is required to be an independent professional or an independent firm of professionals according to most of the Standard Forms of Contract.

- Reflection-in-action cannot be practiced in isolation. The Engineer needs to continuously converse with the Contractor in framing problems and in subsequent reframing them as the dialogue and the back-talk continues. This kind of association with the Contractors by the supervision team is not tolerated by Clients and their Contract Administrators.
- Professionals employed as Client's Contract Administrators are not always permitted to form any impartial opinions. They are expected to use their technical expertise solely for looking after Client's interests.
- Bureaucratic organizations do not permit changes to their conservative systems.

Following example illustrates the fate of a professional who stepped out of line in order to reflect-in-action.

In the Construction of a major motorway across the desert, the Contractor was struggling with the wet-compaction process stipulated in the Client's specification, in order to construct the high embankment in the deep pockets of desert sand dunes and was in a dilemma as to how the fast-track completion date could be achieved. The Engineer who was discussing the problem of slow progress of the Works with the Contractor observed the enormous amount of water being imported to the arid location for wet-compacting the embankment layers of dune-sand. The question of slow progress was reframed to ask how rapidly wet-compaction process could be carried out in order to expedite progress. When the specification was revisited for moisture content details, an uncertainty arose as to whether wet-compaction is necessary at such depth of the embankment.

This required the original question to be further reframed to ask whether a structurally sound and adequately durable embankment could be built with dry-compacted bottom layers with wet-compaction limited only to few of the top layers.

Investigations were carried out, and historical data were collected for similar dry-compacted dune-sand embankments in other countries. Laboratory tests showed that the existing moisture content in dune-sand is adequate to provide the required maximum dry density without using the wet-compaction process. Accordingly the Engineer recommended the Client to relax the Client's specification, in order to allow the Contractor to build the embankment in the pockets by dry-compaction up to a platform level, above which continuous layers of wet-compacted embankment could proceed more efficiently.

The Client's Contract Administrator objected to relax the specification. The Engineer continued to argue his case and after a long battle, took the matter to a higher authority in the Client organization. The strong evidence in the Engineer's arguments could not be ignored and finally the specification was relaxed. The project was successfully completed and the savings due to non-use of water arising from dry-compaction was deducted from the money which would otherwise have become due to the Contractor.

This is not the end of the story. The Client's Contract Administrator who lost his battle against the Engineer, made the life of the Engineer so difficult that he resigned before the project was completed.

Nobody appreciated that the reflection-in-action by the Engineer saved resources not only at the levels of the Contractor and the Client but also at national and global levels, in addition to resolving a problem in the construction process.

Introduction of the reflective practice to the first two frontiers would no doubt open the eyes of the professionals in the third frontier but the Contracts between clients and professionals should definitely be revised to make provisions for the practice of reflection-in-action, before it is implemented in the third frontier.

It would help if provision could also be made in Standard Forms of Contract for the Contractors to propose alternative methods of construction, alternative materials etc. to generate savings which could be shared between the Client and the Contractor. Such provisions would enable the professionals (in Contract Administration practice) to reflect-in-action and continue dialogues with Contractors without raising suspicions in the minds of the Clients.

Professional QS Institutions have commenced to ask from the quantity surveying candidates, who prepare critical analyses for their Assessment of Professional Competence towards corporate membership, questions such as:-

- What were the options available to resolve the issues.
- Why was one option selected and others rejected.

Here we see an initiative in preparing the prospective members to reflect-in-action once they become professionals.

But the current efforts in introduction of reflective practice to construction industry do not appear to be adequate. Awareness should be the first step as I have previously mentioned. Perhaps authorities on this subject, such as Schon should undertake detailed studies and publish the material. His current publication does not have adequate reference to the construction industry, though the Engineering profession (only the design frontier) is briefly discussed.

I wish to end this article with a quotation from Professor Donald A. Schon's book "The Reflective Practitioner – How Professionals think in action":-

"To the radical critics ..... professionals are a self-serving elite who put science-based technique at the service of the business class and under a façade of objectivity and value neutrality, feather their own and their masters' nests. Just as professionals use their special status to control and coerce the clients, so, in technocratic government, they use technical expertise to suppress powerless and the dispossessed. Moreover, their claim to extraordinary knowledge is an empty one. Beneath the mystery of professional expertise lies ignorance and manipulation".

During my long carrier of Contract Administration in the construction industry, I have come across many (so-called) professionals in whom I have seen a pattern which confirms that Schon is not very far wrong in his above observations.

Therefore, at whatever cost, all professionals should be made aware that reflective practice is the only way to avoid such criticism of us professionals.

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