

# Assuring Quality of QFD-Education in Germany

Wolfram Pietsch<sup>1</sup>    Georg Herzwurm<sup>2</sup>    Dietmar Zander<sup>3</sup>  
Prof. Dr.                      Prof. Dr.

## Abstract

In order to establish quality assurance for QFD-Education, the QFD-Institut Deutschland (QFD-ID), the German member of the International QFD Institute (QFDI), has been launching a strategic initiative. Within this initiative constructive measures are highly concerned in order to achieve an ongoing process of advancement of QFD proficiency within Germany. The goal is to establish a common framework for education and to cultivate methodological diversity and advancement at the same time. QFD-ID does not deliver QFD training itself, but issues certificates for completion of a QFD-Education which conform to the rules of the QFD-ID. The Certificate is supposed to serve as a formal proof of participation, but the primary purpose of the QFD-ID is to recognise the achievements of individual members of the QFD-community and to stimulate further advancement regarding QFD. Hence just members of the QFD-ID are eligible for certification and certificates will be awarded for a limited time only. QFD-ID has formed an initial certification board which identified the major QFD paradigms or 'QFD-Schools' within the German community and asked the major advocates of each school to form a team of distinguished experts to devise a standard schema for education. The form of education may vary from traditional seminars concluded by an exam to training-on-the-job concluded by a formal assessment or audit. A standardised template for documentation of training methods has been provided and there is an elaborate Certification Codex establishing rules for the certification process. Individual commitment to this Codex is a prerequisite for certification. Four generic levels of achievements regarding QFD have been defined: The highest level is the QFD-Architect (#4), followed by the QFD-Facilitator (#3), the QFD-User (#2) and finally the QFD-Potential (#1). Goals, skills and prerequisites of each level are discussed in detail. The rollout process of the certification programme is explained. The certification board has been appointing meritable members of QFD-ID for certification at level two and three. Active participants of QFD-conferences and QFD-ID best practice workshops may be eligible for certification if specific conditions are fulfilled. Volkswagen Germany is a corporate member of QFD-ID and started a certification and assessment initiative in order to spread the spirit of QFD and to assure the quality of QFD Education within the entire enterprise. There are different education paths for level 1, 2 and 3, but one single and independent certification process.

**Keywords:** QFD-Education, Certification, Dissemination of Knowledge,

## 1. Certification Initiative of the QFD-Institut Deutschland

There is a successful record of QFD-research and application in Germany and Switzerland for more than ten years by now. Quite different practices may be found, ranging from comprehensive approaches that may not even referred to as QFD (e. g. 'Comprehensive Requirements Management' [1] at BMW) over specific applications (former Arthur Andersen's method/1) to several narrow approaches or even Kindergarten-QFD. Akao's famous postulate 'copy the spirit, not the form' explains the methodological pluralism as part of the QFD paradigm. Nevertheless, if the methodology is defined as an open toolset, this

---

<sup>1</sup> QFD-Institut Deutschland, Eupener Str. 70, 52066 Aachen, tel. +49 (0)241 / 6009-1925,  
fax +49 (0)941 / 5992 03852, pietsch@qfd-id.de, herzwurm@qfd-id.de

<sup>2</sup> see above, herzwurm@qfd-id.de

<sup>3</sup> Volkswagen Germany, Post box 011/0605, 38463 Wolfsburg, zander@qfd-id.de

must not necessarily apply to QFD-Education as well. If QFD-Education is carried out arbitrarily and without any quality assurance, the spirit of QFD may diminish or even perish over time.

The QFD-Institut Deutschland (QFD-ID) provides the primary platform for the QFD-community in Germany, Switzerland and Austria. QFD-ID is member of the ICQFD and pursues its mission - the dissemination of QFD - since now about 10 years. The need for quality assurance regarding QFD-Education emerged from several sources. Corporate members complained about consultants with peculiar QFD-approaches; on the other hand suffered consultants from retarded comprehension of QFD of some customers. Conference submissions for German QFD-conferences did reflect similar problems. The lack of German books on QFD in former years or the inadequate translation of the very early works may have still some effect in academia. In business practice QFD-Education is the key to quality assurance of QFD-Professionals. QFD-ID has been observing the situation of QFD-Educations in practice and academia for several years (see e.g. [2]). As a result of intensive research and discussion within the community of the QFD-ID it came out, that rigid standardisation does not seem to be suitable in order to improve the quality of QFD-Education in Germany. Constructive measures must be highly concerned in order to achieve an ongoing process of advancement of QFD proficiency within Germany. Hence, the QFD-ID has been establishing a common framework for education and to cultivate methodological diversity and advancement at the same time. The pluralism of QFD initiatives in business and academia should be promoted without diluting the core elements of QFD.

In order to resolve these conflicting criteria, the idea of methodological paradigms has been employed. The QFD-ID recognised that there is a discrete set of different QFD-approaches within the German community that are tied to different groups of experts. It is assumed, that the spirit of QFD emerges within its community in certain 'QFD-Schools' with different methodological dialects or even languages, that may not be translated easily but each forms a consistent and complete set. Each 'QFD-School' must be treated differently and set different criteria, but all must be approved through a process incorporating the body of knowledge in Germany.

## 2. Principles and Process of QFD-Certification

QFD-ID does not deliver QFD-Training itself, but issues certificates for successful completion of different types of QFD-Education that conform to the rules of the QFD-ID and must have been approved by QFD-ID.

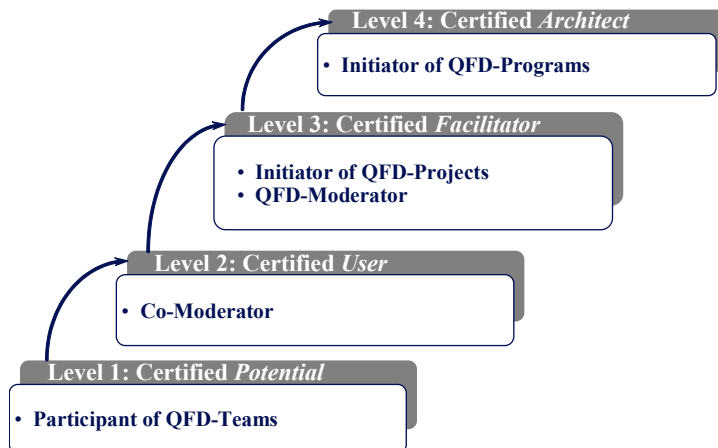


Figure 1 The four levels of QFD achievements for certification by QFD-ID

But the primary purpose of the QFD-ID is to recognise the achievements of individual members of the German QFD-ID community and to stimulate further advancement regarding QFD. Hence just members of the QFD-ID are eligible for certification and certificates will be awarded for a limited time only. Four levels of achievements regarding QFD have been defined which are depicted in Figure 1 above.

The approval of QFD-Training is the critical element of the certification process of the QFD-ID. An extraordinary high level and breadth of QFD expertise is required in order to achieve a high level of quality and diversity at the same time. Therefore, a committee of outstanding experts has been appointed for the approval, which is called 'Certification Board', which is formed by the QFD-Architects certified by QFD-ID and represents the body of QFD-knowledge within the QFD-ID. Since the Akao Prize is the most distinguished appreciation for achievements, it entitles for certification at level 4 naturally. Thus the initial certification board is formed by the Akao prize winners within the QFD-ID.

In order to certify QFD-Education, the central concepts and training measures of each "School" must be documented. The Certification Board has identified the major QFD paradigms or 'QFD-Schools' within the German community and asked the major advocates of each school to form a team of distinguished experts to devise a standard schema for education, which is called the 'Training Method'. This measure for certification is the central concept of the certification programme. A Training Method defines the process and criteria for certification and must be approved by the Certification Board. The form of education may vary from traditional seminars concluded by an exam to training-on-the-job concluded by a formal assessment or audit. The content of Training Methods may be quite different as well. However, the certification board checks its conformance to the spirit of QFD.

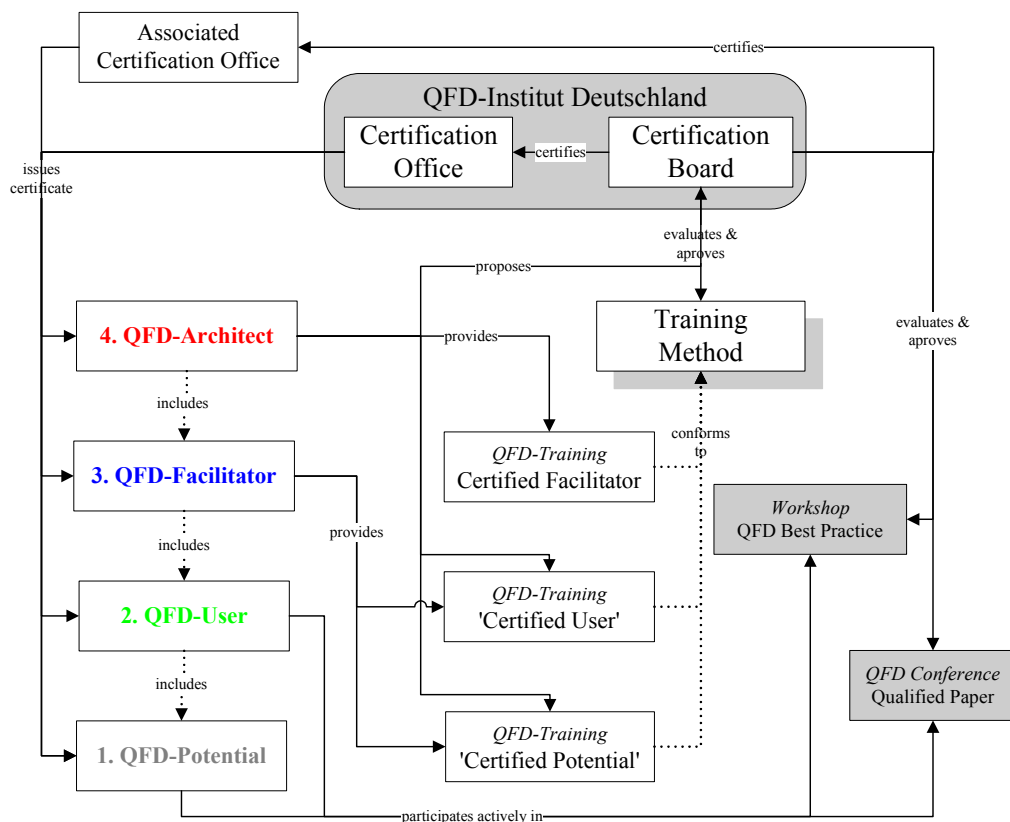


Figure 2 The Certification Process of the QFD-ID

Figure 2 above provides an overview on the process of certification. The eligibility for and grant of the 4th level certificate (QFD-Architect) is under the responsibility of the certification board only. There are alternative ways of certification for the first three levels besides QFD-Training. Members of QFD-ID may participate in a QFD conference or a best practice workshop hosted by QFD-ID (see [3]). Nevertheless, the Certification Board is the central decision instance for certification. The Certification Office keeps certification records, receives applications for certifications and prepares certificates. Besides the primary Certification Office of the QFD-ID there may be associated offices like in the case of Volkswagen (VW) as described below.

### 3. Progress of the Certification Initiative

A brief summary of every certified training method is published to the QFD-ID community thru its web site (see [www.qfd-id.de](http://www.qfd-id.de) and [4]). A standardised template for documentation of training methods has been provided. Each Training method must specify where, when and with what instrument the following aspects will be addressed:

- |                                    |                                    |
|------------------------------------|------------------------------------|
| (a) Customer Deployment            | (e) Advanced Deployment            |
| (b) Voice of the Customer Analysis | (f) The QFD Process in Practice    |
| (c) Voice of the Engineer Analysis | (g) Integration with other Methods |
| (d) Matrix Correlation             |                                    |

Furthermore, there is an elaborate Certification Codex establishing rules for the certification process (see [4] for the current version). Individual commitment to this codex is a prerequisite for certification. According to the codex, certificates are valid for a limited time only, even at the highest level. Any certified QFD-Trainer (QFD-Architects or -Moderators) must commit her- or himself to a certain Training Method and deliver QFD-training that is compliant with this Training Method.

Three different Training Methods have been approved already; among others the ‘Cologne QFD-Training Programme’ by G. Herzworm, W. Pietsch et al. [5]. It comprises three consecutive training courses for level 1 to 3. The course for level 1 is a short-track version of the course for level 2 and must be tailored to the specific audience. Each candidate for level 3 must have participated in QFD projects prior to the attendance of a level 3 course. There are personal examinations and/or reviews at the end of each course. Another certified Training Method proposed by D. Zander [6], has been tailored to suit the specific needs of VW, which are explained below. There are ten QFD-Architects (incl. Prof. Akao by honour) by now (April 2006) on the Certification Board. The Certification Board has been appointing meritable members of QFD-ID for certification at level 2 and 3. Active participants of QFD-conferences and QFD-ID best practice workshops may be eligible for certification if specific conditions are fulfilled.

### 4. Joint Certification Initiative with Volkswagen Germany

Volkswagen Germany is a corporate member of QFD-ID and started a certification and assessment initiative in order to spread the spirit of QFD and to assure the quality of QFD-Education within the company. Volkswagen Coaching, their training subsidiary, plays a key role in that project. The following step-by-step approach is pursued in the development of the VW QFD Staff Certification:

#### *First step – Definition of the QFD spirit*

When introducing a method, knowledge about structures and forms is essential, but it is most important to understand the philosophy and the spirit behind the method. The same is true when developing an edu-

education and certification process for a method. All people involved should be guided by the spirit. VW defined the QFD-Spirit as follows [7]:

- Customer focus and teamwork
- Deduct company priorities from customer priorities
- Involve the different areas
- Work with matrix structures

#### *Second step – Customer Focus*

In order to establish customer focus the (internal) customer for the education and certification process must be studied and defined, the support QFD can give to these customers in their processes must be analysed, and the requirements of these customers, the expectations the company has and the links of QFD with other methods used in the company must be identified. The VW team found three major groups of (internal) customers for QFD-Education and –Certification at VW: Managers, specialists in marketing/product/process development and QFD facilitators and trainers.

(1) Managers expect to get understandable information for decision making. QFD shows the effects their decisions have on customer satisfaction. They expect to get the information with QFD quicker, in better quality, and to lower cost than using other methods and processes. The company expects managers to demand and to foster the application of the method.

(2) Specialists in marketing, product and process development expect to understand and transmit the voice of the customer better by using QFD and to get ‘translations’ between the different ‘languages’ that customers and departments may speak. The customer voice should be given the same attention compared to cost and technical aspects, which have been integrated firmly into the decision making processes of management. They expect to contribute to the ‘learning organization’ when using QFD. The company expects these specialists to select, define, apply and follow-up QFD processes.

(3) Finally, QFD facilitators and trainers expect a guideline for facilitation, an improvement with regard to solving of conflicts within the teams and a method that is relatively easy to explain and to apply. The company expects the trainers and facilitators to educate people efficiently and to facilitate the applications in a professional way. The team responsible for developing QFD-Training at VW found out, that the methods with the strongest links to QFD in company practice are Customer Studies, TRIZ, FMEA and the Design For X Methods.

#### *Third step – Development, installation and improvement of the education and certification process*

The training and certification process has evolved in a team of experts from Volkswagen Coaching, Volkswagen Group Quality Assurance and other departments in contact with the acknowledged experts from the QFD-ID. In order to define the contents, examples, exams, practice requirements and assessments of QFD-training, the team employed industry best practices regarding the framework for QFD-Educations of the QFD-ID, and last not least internal requirements. As a result of the analysis from step 2, the first introductory training unit has been developed that integrates Customer studies, QFD, TRIZ, Design For X, and FMEA. All participants must pass an exam. This training with exam has been acknowledged as a certified training for QFD-Potentials (level 1) by the Certification Board of the QFD-ID. Staff members who work as QFD co-facilitators or facilitators internally have to prove their practice and pass assessments before they may advance to level 2 or 3.

Because the certificates are only valid for a certain period, further proofs of ongoing practice and further assessments are necessary to achieve recertification on all three levels. For this purpose, specific as-

assessment and review procedures have been developed and certified by the certification board as well. If a VW staff member completes a QFD-Training from another, VW-external provider which is certified by QFD-ID, VW will acknowledge this certificate as well internally.

As a further contribution to assure quality of training and certification, the team at VW observes the feedback of the participants and the results of the exams and assessments, in order to review and improve the whole process constantly. To foster the mutual qualification and the evolution of the QFD spirit at VW, a strong and active internal QFD community emerged interchanging QFD examples and experiences internally, as far as confidentiality rules permit it. This contributes to the idea of a learning organization.

Applying the framework for QFD-Education and cooperation with the QFD-ID helped to synchronize and stimulate QFD-Education at VW with the QFD spirit in Germany, gave the opportunity to discuss the ideas with the leading German and international QFD experts and guarantees a high level of achievement in the efforts of VW to deliver excellent education and formal certification. This initiative marks the levelling rule for global players within and beyond the automotive industry.

### **References**

- [1] S. Danner: Ganzheitliches Anforderungsmanagement für marktorientierte Entwicklungsprozesse', Shaker, Aachen 1996.
- [2] W. Pietsch: QFD Dissemination - Principles and Practice, Proc. of the 1<sup>st</sup> Ntl. Symp. on Quality Function Deployment (KFG), Dokyuz Eylül Üniversitesi, Faculty of Business, Izmir 2002.
- [3] G. Herzwurm, S. Schockert: What are The Best Practices of QFD?, Intl. Symp. on Quality Function Deployment, ISQFD'06, Tokyo 2006.
- [4] <http://tristan.wirtschaft.fh-aachen.de/qfd-id/mitglieder.nsf>.
- [5] G. Herzwurm, P. Brandenburg, T. Fehlmann, W. Pietsch, S. Schockert: Kölner QFD-Schulungskonzept, QFD-Institut Deutschland, Aachen 2005.
- [6] D. Zander: VW Personenzertifizierung QFD, QFD-Institut Deutschland, Aachen 2005.
- [7] D. Zander: Application of Quality Tables in the Quality Planning Process, Intl. Symp. on Quality Function Deployment, ISQFD'02, Munich 2002.