

THE QUALITY MANAGEMENT CERTIFICATE EXAMINATION IN JAPAN

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The Quality Management Certificate Examination (Trademark “QM/QC Exam” is abbreviated to “QCE” in this paper) has been conducted by QCE Center established in Japanese Standards Association in 2005 with collaborating Union of Japanese Scientists and Engineers in order to certificate knowledge and skill level of quality management. QCE was originally designed for certificating applicants based on four-leveled competency tables accredited by Japanese Society for Quality Control. Later by reviewing the original competency tables, in 2013 semi-highest level was added to reduce the gap between the first and the second levels. This paper reports the overview of QCE including general policy, administration and operation of the examination, illustrative problems which were made according to each level of competency tables and several statistics on QCE.

INTRODUCTION

Quality Management is a management scheme employing statistical methods in enabling products and services offered to customers to achieve customer satisfaction and compliance with standards. Quality Management can also be helpful in eliminating non-conforming units and cutting down on delivery time and costs. Customers do not purchase less quality products or services, so quality should be emphasized above all. Also, it is important to manage processes (mechanisms) and to improve those processes (mechanisms) so that not only the quality of the product but also the quality of the processes will always be preferable.

WHAT IS QUALITY MANAGEMENT CERTIFICATE EXAMINATION (QCE)

QCE is a written examination designed to evaluate each examinee’s level of knowledge and skills in quality management, standardization policies and quality management methods. QCE comprises of four levels (grades) taking difficulties into consideration. Examinees can select at most two levels of examination and the result of pass or fail will be informed.

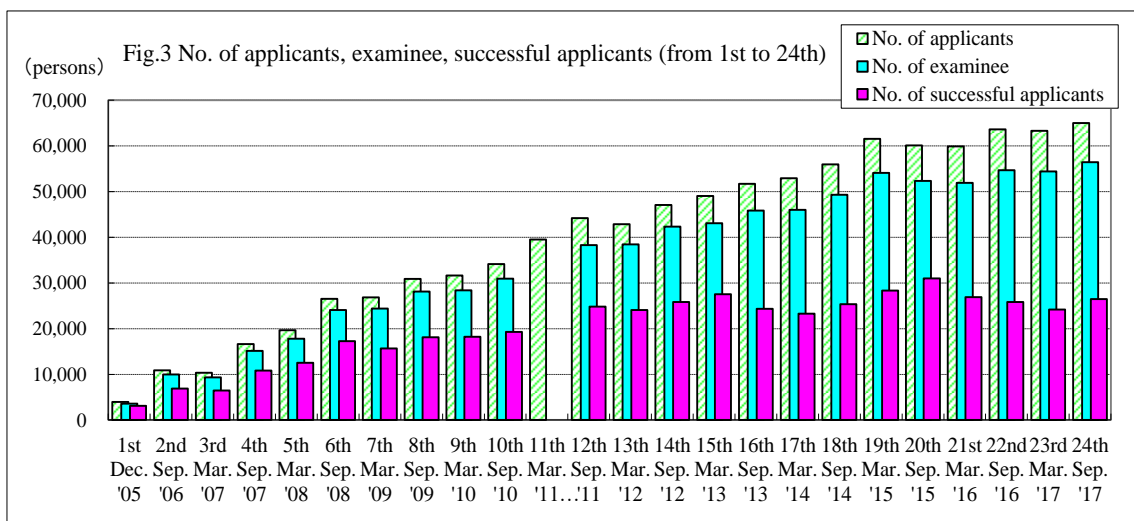
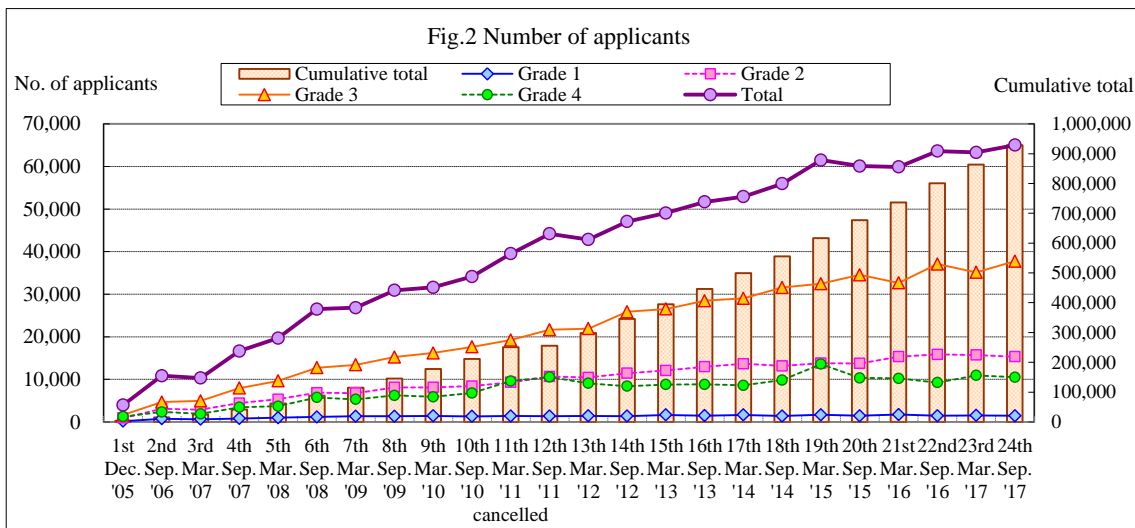
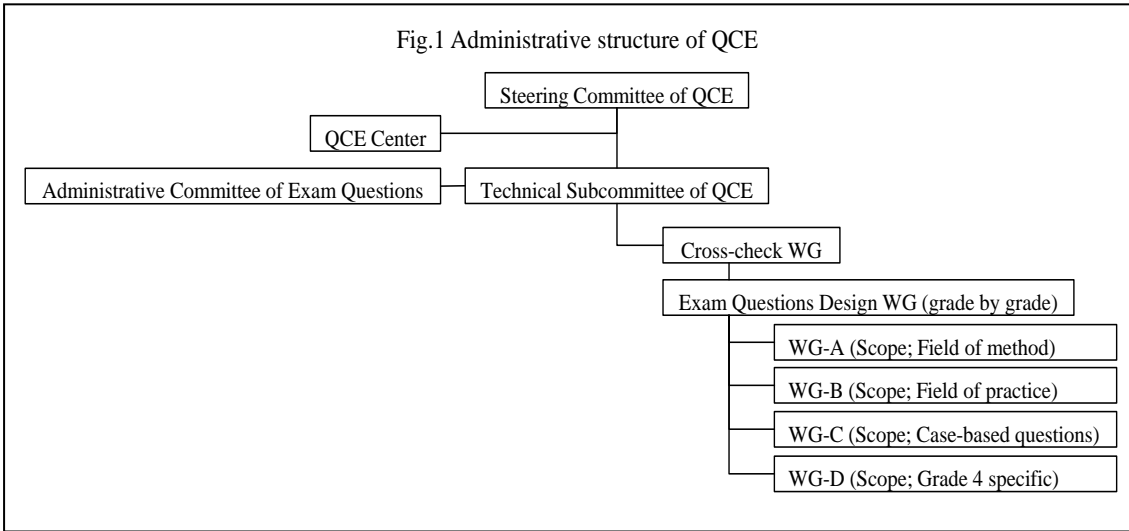
HISTORY OF QCE

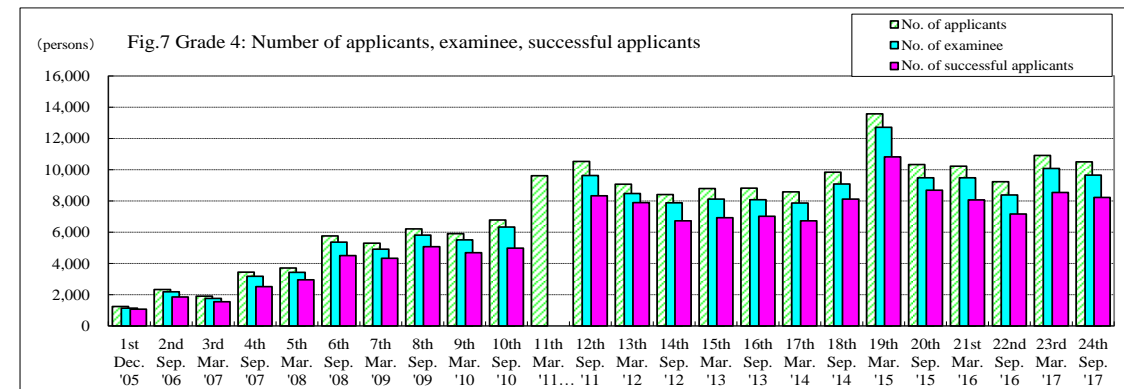
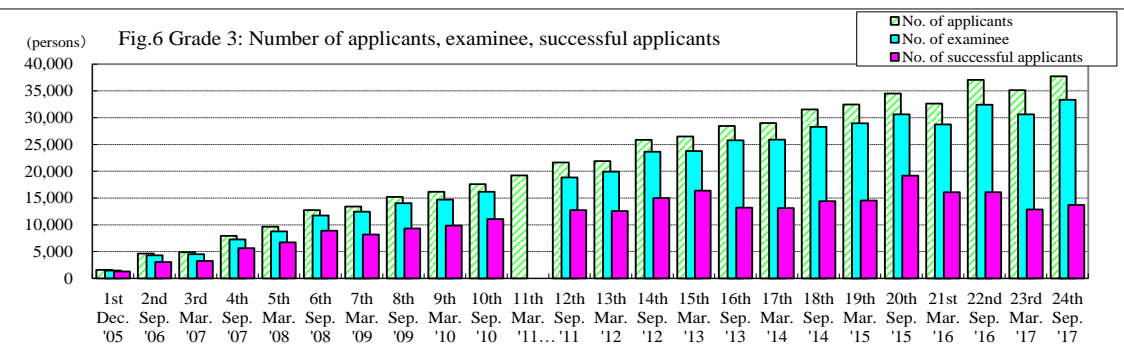
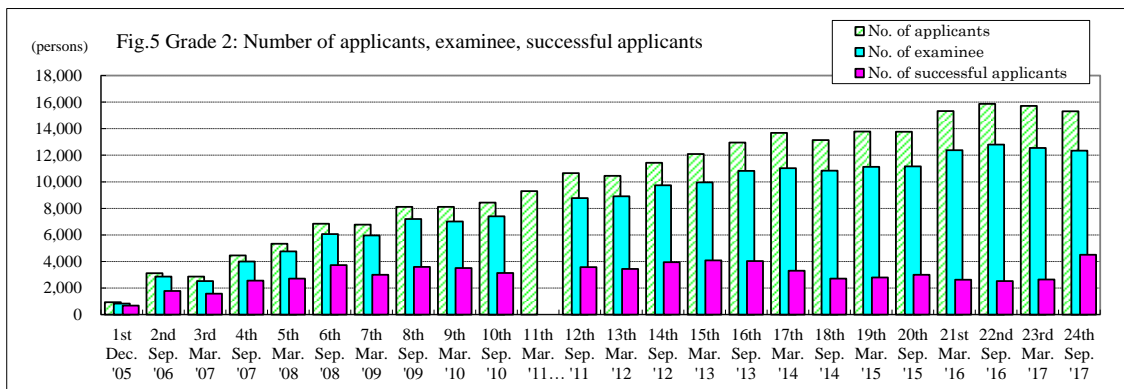
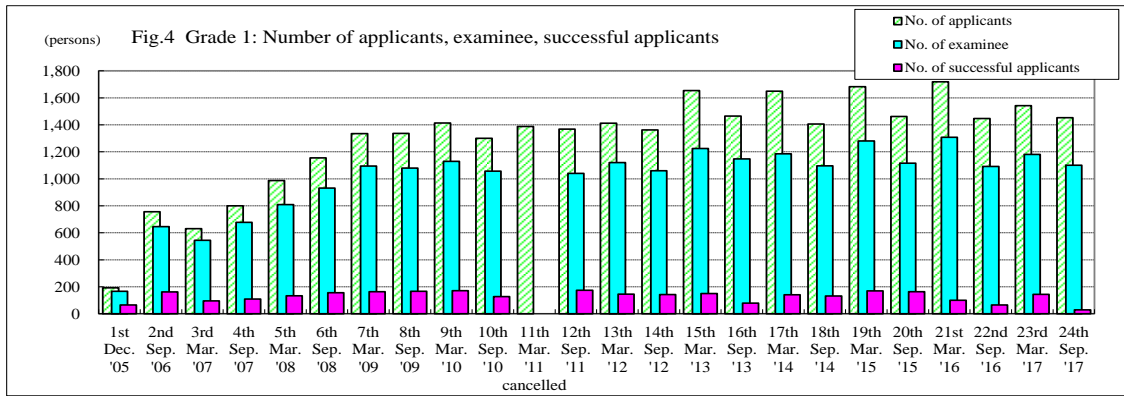
The recession in 1990s in Japan brought about a big business environment change. Specifically, businesses could not help cutting down their full-time workforces and expenses for education and training. This resulted in the decline in technological and operational capabilities. Technology no longer has been preserved and become difficult to hand down to new young workers. This gave rise to the fact that problems with product quality frequently occurred and the global competitiveness of the country became weak. On the other hand, amid the spread of programs evaluating competences in various fields, evaluation of quality management capability became important. AS the result, QCE was designed to motivate employees doing higher level of quality management across companies and country-wide. The idea that Quality Management starts with education and ends with education has been underlined in Japan.

ADMINISTRARTION OF QCE

QCE is sponsored by the Japanese Standards Association (JSA) and the Union of Japanese Scientists and Engineers (JUSE) and is administrated by the QCE Center in JSA. The examinations are being held with accreditation by the Japanese Society for Quality Control(JSQC). The administrative structure of QCE is shown in Figure 1. The questions for QCE are being made by the Technical Subcommittee composed of the academic experts and practical specialists in quality management. QCE is conducted twice a year and number of applicants is more than 60,000 respectively, or annual total number of applicants is over 120,000. In a few years the cumulative applicants will exceed 1,000,000 as shown in Figure 2. Figure 3 indicates that the number of

applicants, examinees, and successful applicants. Data for QCE of each grade are depicted in Figures 4 through 7, respectively. It is most difficult to pass the Grade 1 QCE as shown in Figure 4.





QCE APPLICANTS AND SUPPORTERS

QCE applicants mainly belong to manufacturing industry. Since QCE has been gradually spreading and recognized in various fields, recently, applicants are increasing from service industry and from industrial high schools. QCE has been supported by 18 organizations and 46 companies, some of which are Toyota Motor Corporation, Komatsu, Ltd., Juki Corporation, Shiseido Co., Ltd., and LIXIL Co., Ltd. etc.

MERITS OF QCE

As shown in Figure 8, the merits of QCE for companies and examinees are illustrated in Figure7. QCE enables companies to confirm their own applicant's knowledge level according to the objective criteria. Industrial high school students are able to utilize their QCE qualification in their job-hunting activities. For example, Komatsu Ltd., a famous manufacturer of construction equipment and industrial machinery, has employed such an entry form that applicants can fill out QCE qualification level together with TOEIC score etc. Such the approach urges and recommends applicants to master quality management and its method.

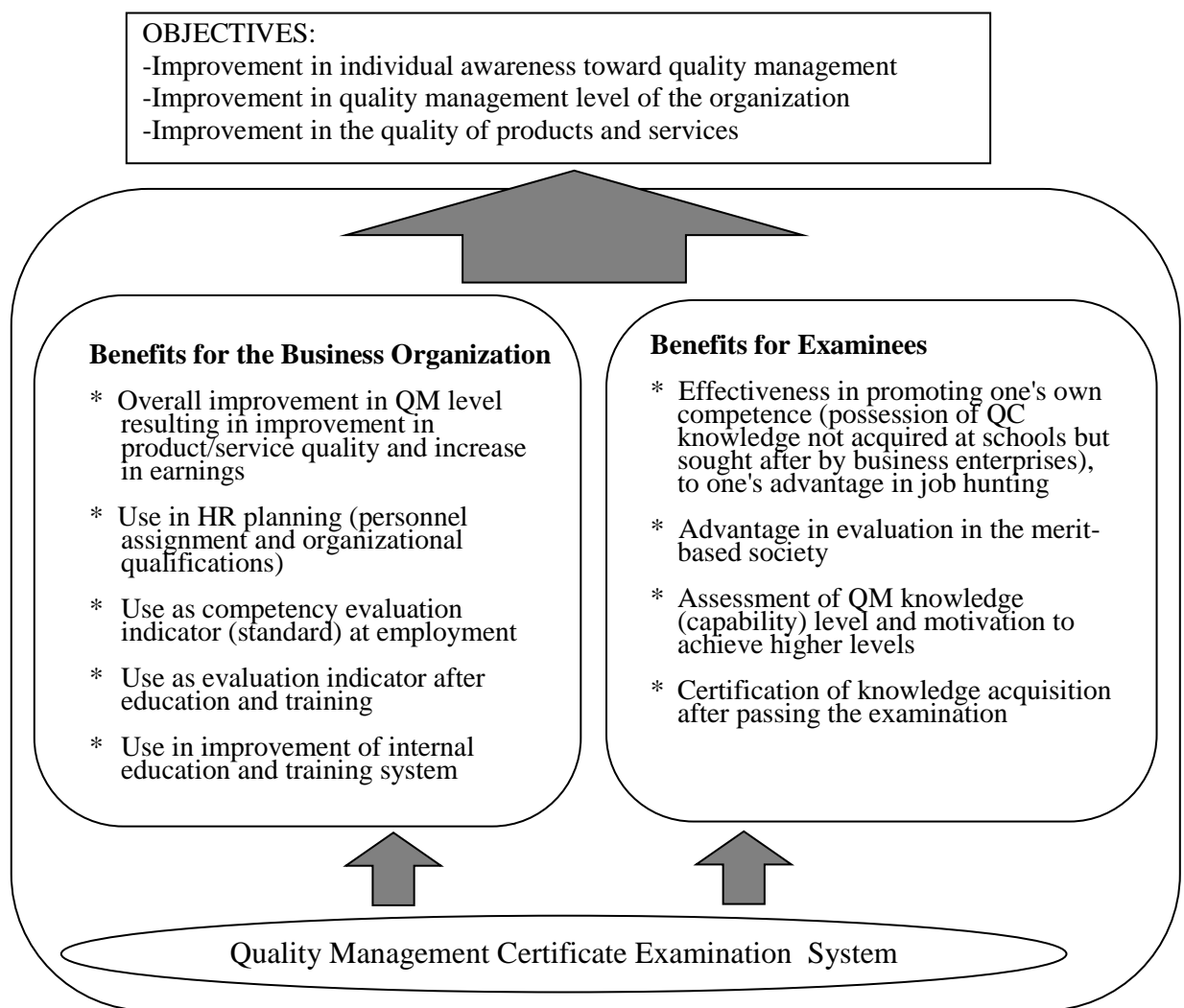


Fig. 8 The Objectives of the QCE and the benefits for business organizations and examinees

Table1 indicates the knowledge level and qualification criteria for QCE of each Grade.

Table1. The knowledge level and qualification criteria for each grade in QCE

Grade	Knowledge level and qualification criteria
Grade 1	<p>* Grade 1 level demands that the person possesses the knowledge and skills to be able to find solutions and improvements in the various problems that emerge within an organization and to exercise one's own initiative in implementing them. Also, in dealing with specialized problems that cannot be resolved on one's own, the person must possess the ability to at least know what methods should be employed and to develop a plan toward resolution. It is a level that requires a person to have the least minimum knowledge demanded of one with leadership potential in quality management activities within an organization, as well as an understanding on how it is utilized.</p> <p>* Target applicants are staff members of an organization able to exercise initiative in resolving division-wide quality problems and quality management engineers in leadership position in resolving quality problems.</p>
Grade 2	<p>* Grade 2 level demands that the person is able to utilize statistical methods including the “seven QC tools” and the “new seven QC tools” in addressing many of the quality-related problems emerging in workplaces in general and to exercise initiative in resolving them or making improvements. The person must also possess adequate understanding of quality management and practice and is capable of organizing appropriate activities. The level requires the person to be able to act independently in conducting basic management and improvement activities.</p> <p>* Target applicants are staff members who are capable of exercising initiative in resolving quality problems within a division and managerial and staff workers in quality-related divisions (quality management, quality assurance, research & development, manufacturing and technology).</p>
Grade 3	<p>* Grade 3 level demands that the person has general understanding of how to develop and use the “seven QC tools”, possess the ability to resolve problems emerging in the workplace with the QC approach to problem-solving and with support and guidance on how to make improvements and understand practical quality management as knowledge. The level requires the person to be able to conduct basic management and improvement activities, when necessary and with support.</p> <p>* Target applicants are all employees (including those in administration, marketing, service, manufacturing and technology) who engage in problem solving in the workplace, regardless of industry or business type and students in universities, vocational schools and high schools studying quality management.</p>
Grade 4	<p>* Grade 4 level demands that the person possesses basic common knowledge in corporate activities, including the basics in quality management, in engaging in work within an organization and understanding of terms involved in improvement activities within a business organization, etc. The level requires the least minimum needed as a working adult, in terms of how to execute work and understanding of terms related to quality management.</p> <p>* Target applicants are entry-level students in quality management, new employees, non-full-time employees and students in universities, vocational schools and high school students learning quality management for the first time.</p>

RECOMMENDATION IN APPLYING TO QCE

For quality management, it is effective to raise knowledge of the quality management of the entire employee. It is recommended to begin QCE from Grade 3 level and Grade 4 level.

- Grade 4 level is a level that can understand the basic idea of quality management, and it is targeted to people who start quality management from now.
- Grade 3 level is useful for employee because quality management methods and ways of thinking that are frequently used at manufacturing sites are presented. The number of applicants to the Grade 3 level is highest of all applicants.

ABRIDGEMENT

Regardless of industry, nearly all Japanese businesses practice quality management. For implementing quality management, it is important that the people working in an organization possess awareness toward quality management, competence and improvement capability. In mobilizing capabilities in quality management and improvement, there are many related elements that come into play in addition to knowledge and quality management, such as the leadership potential and incentive of each individual and the organization that promotes development of these qualities. However, knowledge regarding quality management and its relevant methods and tools is basically important. So, QCE is aiming strengthening such the knowledge from company-wide and country-wide viewpoint.

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