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Preface

This Standard has been established by the Japanese Society for Quality Control (hereafter JSQC) through the deliberations of the Technical Board, under the administrative provisions of the JSQC.

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Note that several parts of the standard may conflict with patents, patent applications after the laying open of the applications, utility model rights or utility model right applications after the laying open of the applications. JSQC shall not be responsible for confirming whether those parts of the standard infringe upon any of these patents, patent applications after the laying open of the applications, utility model rights or utility model right applications after the laying open of the applications.

Guidelines for Small Group Improvement Activities

(Note: this document is an official English translation of JSQC-Std 31-001:2015 written in Japanese.)

Introduction

In order to continuously create new value by linking the customer and the society needs to organizational technologies, it is necessary to solve the problems and achieve the tasks that arise with the change in needs and technologies. In order to do so, everyone working for that organization must participate in the activities with a high level of motivation, closely cooperate with one another, and hone and utilize their respective abilities through the activities.

However, there could be organizations with diverse employees, some of whom may not show interest in the activities in the said organizations. Communication could also be found wanting. In addition, in spite of spending a lot of time on education and training, learning curve of some of them may not improve and their potential abilities may not have shown result.

“Small Group Improvement Activity” is the method conceived to overcome such difficulties. “Small Group Improvement Activity” is the basic activity to link problem solving and task achieving with human development and workplace energization. The organization’s growth and development depend vastly on the quality of such activity. Therefore, in order to harness the human resource within the organization to its full potentials, it is desirable that they be practiced in all the departments and all the layers.

Despite such importance of this activity, standards that can be widely used for small group improvement activities have not been established as ISO or JIS (Japan Industrial Standards). For this reason, views of each organization and researcher are different regarding what are "small group improvement activities" and how to proceed with them, which is one of the causes of various confusions about them. In addition, these confusions become a major hurdle in promoting "small group improvement activities" in the organizations.

This standard summarizes the fundamental principles of small group improvement activities and guidelines for systematically promoting small group improvement activities, in order to provide a basis for the spread and development of small group improvement activities.

1. Scope

This standard prescribes the matters recommended by JSQC concerning practicing small group improvement activities, one of the main activities of quality management. This standard can be applied not just in manufacturing but in all types of workplaces such as R&D, sales, after-sales service and administration. In addition, it can be applied not just in manufacturing but various industries including the service industry.

2. Normative Reference

The below mentioned standard constitutes a part of the prescriptions of this standard, as it is cited here. Only the cited version of this standard mentioned in the present standard is applicable and no revised or supplement versions are applicable.

JSQC-Std 00-001: 2011 Quality Management Terms

3. Terms and Definitions

Terms and definitions mentioned in JSQC-Std 00-001 and the following terms and definitions are applicable in this standard. The following terms and definitions include those cited/represented from other standards.

3.1 Small group improvement activities / small group activity

Activities to enhance knowledge, skill and motivation level of members as well as contribute to achievement of purpose of the organization by forming a small team having common purpose and diverse knowledge, skills, viewpoints, ideas, authority etc. and carrying out maintenance-plus-enhancement, improvement and innovation.

Note: Small group improvement activity includes activities by improvement teams, QC circles etc.

3.2 Improvement team / innovation and improvement team

Small groups formed to solve and achieve important problems and tasks of the organization.

3.3 QC circle

Small groups where front line workers continuously carry out maintenance-plus-enhancement and improvement of quality of product, service and process.

Note: In QC circle activities, the purpose is not only to improve customer satisfaction and contribute to the society, but also to attain ability enhancement and self-actualization of members, and to create a pleasant, vibrant and satisfying workplace.

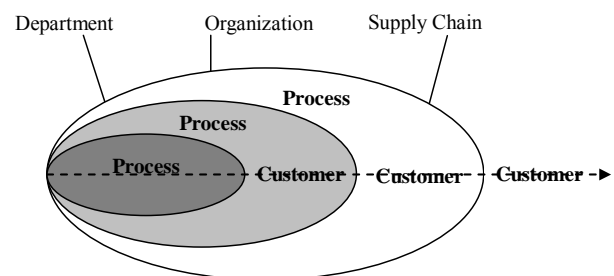
(Same as JSQC-Std 00-001)

3.4 Customer

Organization or person who receives products/services.

Note 1: Actually, customer does not have the narrow meaning of the person who buys a product or service but includes latent purchaser and the targeted purchaser.

Note 2: Customer does not mean just the purchaser but includes user and consumer. Not just the external organization or person but includes internal departments and people (post-process). If represented graphically, it will be as shown on the right-hand side.



(Same as JSQC-Std 00-001)

3.5 Process

A series of inter-related or interacting activities that convert input into output.

Note: Input and output include hardware, software, service, information, energy etc.

(Same as JSQC-Std 00-001)

3.6 Improvement / continuous improvement

Activities that set targets higher than the current level for products and services, processes, systems etc., identify problems or tasks, and repeat problem solving or task achieving.

(Same as JSQC-Std 00-001)

3.7 Problem solving

A series of activities that specify the cause behind a problem, take countermeasures to correct them and confirm the effect.

Note: Sometimes the improvement including task achieving is called problem solving without distinguishing the problem and the task.

(Same as JSQC-Std 00-001)

3.8 Task achieving

A series of activities that set a target and achieve it by building and operating processes and/or systems.

(Same as JSQC-Std 00-001)

3.9 QC Story / Procedure for improvement

Basic procedure to pursue improvements logically and scientifically based on data and carrying them out effectively and efficiently.

(Same as JSQC-Std 00-001)

3.10 Self-actualization

Recognize, develop and reveal the possibilities within self.

(Same as JSQC-Std 00-001)

3.11 Total employee involvement

All members of the organization are aware of their role in the organization and actively participate in and contribute to activities to achieve the organization's objectives.

Note: Generally, all the members of an organization should be taken into consideration, but it is necessary for each organization to decide who all to include.

(Same as JSQC-Std 00-001)

4. Fundamentals of Small Group Improvement Activities

To practice small group improvement activities, first of all, it is necessary to know about the role they play in total quality management. In addition, it is necessary to understand the three basics of small group improvement activities namely, "challenge problems and tasks in small groups", "improve based on QC approach, procedures and techniques", and "improve abilities and energize the organization". Then, in order to carry out concrete promotion, it is essential to understand the importance of the mechanism for promotion and the role played by top management and to promote by combining various types of small group improvement activities.

4.1 Their positioning and role in Total Quality Management

While significantly changing business environment, an organization constantly aims to develop new products and services and offer them to customers with the aim to secure appropriate profits and achieve sustainable growth and contribute to society through realization of customer satisfaction and utilization and innovation of technology.

TQM (Total Quality Management) is the activity;

- whose aim is the long-term success of the organization through provision of products and services that satisfy the needs of customers and society as well as the satisfaction of people working for it,
- for maintaining, improving and innovating processes and systems,
- by all departments and all the layers of the organization,

to achieve effective and efficient organizational management matching the changes in business environment.

The core activities in TQM are maintenance-plus-enhancement, improvement and innovation of processes and systems.

- **Maintenance-plus-enhancement** (management in the narrow sense) : An activity where a target is set on the current level or its extension, and condition is restored immediately if there is deviation from the target, and also uses the knowledge acquired to obtain better results than the current level. It is important to focus on the changes in the process that cause deviation.
- **Improvement**: An activity where a target is set at a level higher than the current level or its extension, problems and tasks are identified and problem solving and task achieving are repeated. It is important to clarify the causal relationship between the problem/task and the process, and to make major changes in the process based on it.
- **Innovation**: An activity where processes and systems are changed from time to time by introducing or utilizing new indigenous technologies produced outside the organization or by other departments within the organization.

In order to continuously practice maintenance-plus-enhancement, improvement and innovation based on participation of all the departments and all the layers, it is necessary to undertake quality assurance, policy management, daily management, small group improvement activity and quality management education and training at the organization level (**Fig. 1**).

- **Quality Assurance**: Systematic activities to ensure, confirm and demonstrate that the needs of customers and society are met. Carrying out quality assurance at the organization level will help in developing close relationships between needs, systems and processes and clarifying things that must be carried out for

maintenance-plus-enhancement, improvement and innovation.

Note: Activity where objectives are set for each of the basic management elements such as quality, cost, volumes, schedule adherence, safety and environment, and cross-functional collaboration between departments is sought to achieve them in an efficient manner and strive for total optimization, is called “cross-functional management”. Quality assurance is one of forms of the cross-functional management.

- **Policy Management**: Activities to achieve things with priority approach and everyone on the same page based on participation by all the departments and all the layers and clarifying the policy (priority issues, objectives and means). In order to practice improvement and innovation, it is necessary to establish strategies and objectives to cope with changes in customer needs and business environment and clarify the problems/tasks that must be taken up to get there in line with the principle of purpose-oriented and priority approach.
- **Daily Management**: Activities to maintain and enhance duties that are performed daily in each department of the organization. In order to maintain and enhance, every department or person in charge must clarify its duties and the processes to carry them out, standardize the causes that affect the output and the changes or alterations in those causes as well as the methods that maintain them at a certain level or do not let any adverse impact be caused, and carry out activities as per those methods. Moreover, it is also necessary to detect the abnormalities by setting the control points and revise the standards and the method of observing them.
- **Small Group Improvement Activities**: Activities where a small group comprising members having common purpose, diverse knowledge, skills, viewpoints, ideas, authority carries out maintenance-plus-enhancement, improvement and innovation by utilizing QC approaches, procedures and techniques to contribute to achievement of the purpose of the organization as well as to enhance the knowledge, skills and motivation level of its members. It is necessary, therefore, to form a small group where it is easy to communicate the aim, solve and achieve various problems and tasks that come to the fore through policy management and daily management in a speedy manner and implement daily management by utilizing the results obtained, besides ability enhancement and self-actualization of each individual and relationship of trust between its members during these activities.

Note 1: Small group improvement activities have above-mentioned wide meaning but in this standard, focus has been specifically placed on the activities satisfying the 3 basics described under 4.2-4.4 i.e. “Challenge problems and tasks in a small group”, “Improve based on QC approach, procedures and techniques” and “Enhance abilities and energize the organization”.

Note 2: In Fig. 1, 3 types of small group improvement activities have been mentioned but organization is free to classify them into any types as well as give them names at will.

- **Quality Management Education and Training**: Activities for systematic human resource development for the members of an organization to acquire necessary values, knowledge and skills to realize products and services that satisfy customer and social needs in an effective and efficient manner. In order to carry out maintenance-plus-enhancement, improvement and innovation actively, it is the premise that all the members of the organization possess same values and acquire knowledge and skills to carry out maintenance-plus-enhancement, improvement and innovation.

Note 1: For the above-mentioned 5 activities to function organically, it is necessary that they are closely

related to each other. Especially, small group improvement activities are at the heart of all the activities and the effects of TQM as a whole vary considerably depending on how well they are carried out.

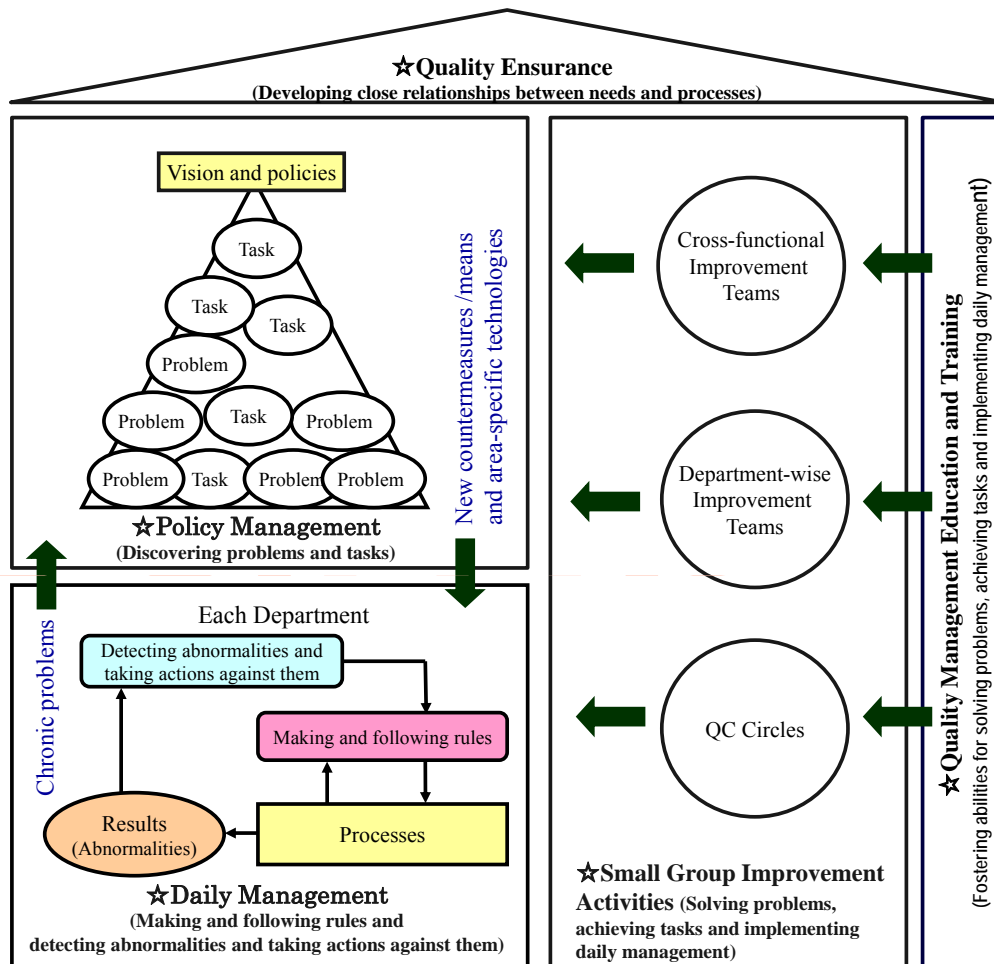


Fig.1 Positioning and role of small group improvement activities in TQM

4.2 Basic 1: Challenge problems and tasks in small groups

For problem solving and task achieving, along with analyzing the cause and effect relationship between results and process (causes), it is necessary to improve the existing process or set the new process to deliver the desirable results. In order to pursue this effectively and efficiently, it is necessary to develop sufficient understanding about the problems and tasks being targeted, the process and the method of controlling the process etc. In addition, it is also necessary to have knowledge and skill as well as viewpoints and ideas concerning methods to analyze cause and effect relationship, and the techniques to formulate means or countermeasures for process based on cause and effect relationship. Further, it is also necessary to have the authority to implement the formulated means or countermeasures. On the other hand, knowledge, skills, viewpoints, ideas and authority held by each individual is limited depending on his/her experience, position and affiliation. For this reason, in order to deal with important problems and tasks that the organization is currently facing, it is necessary that multiple numbers of people that possess different knowledge, skills, viewpoints, ideas and authority collaborate and cooperate with one another.

“Small group” means “a team of more than 2 persons that have different knowledge, skills, viewpoints, ideas and authority, which has been formed for the common purpose namely, problem solving and task achieving.

For a small group to function effectively, several conditions are crucial. First of all, it is necessary that problems and tasks have been identified. Problems or tasks could be that the result or the anticipated value is inconsistent with the objective and their resolution or achievement is crucial for the organization. In addition, it is necessary to bring together people that possess knowledge, skills, viewpoints, ideas and authority etc. to solve those problems or achieve those tasks. However, collaboration and cooperation becomes difficult if the number of persons is too large. Generally, if the number exceeds 10, it becomes difficult to function as a small group and it is hard to summarize the views given by everyone. Therefore, it is ideal to have 5-8 persons. It is also necessary to have a leader who has the ability to operate the small group and to ensure that the role of each member is clear and they can act organically as a group. In addition, in problem solving and task achieving, despite the basic approach and techniques are fixed (See 4.3), yet people do not know in advance what needs to be done. Therefore, grasping the situation according to the progress made and dealing with it flexibly is needed. In this respect, it is important that operation of small group is carried out autonomously and support from outside is provided at the opportune time if needed. A group that satisfies these conditions can be called small group. QC circle, department-wise project or task team, cross-functional team and committees are all small groups.

Among problems and tasks, it may be appropriate at times that the organization (department, section, subsection etc.) established for carrying out those duties take up some of them. For instance, in case of standard problems or tasks, it is better to establish the organization in advance instead of thinking about how to go about them each time separately. On the other hand, in case of unique problems or tasks whose content is not known in advance, it is more effective to form a small group that can handle it well instead of assigning them to an existing organization.

4.3 Basics 2: Improve based on QC approach, procedure and techniques

In small group improvement activity, when multiple persons that possess different knowledge, skills, viewpoints, ideas and authority come together to carry out some activity, it is important that the method to proceed is shared with everyone upfront. Although any method to proceed successfully is possible, QC perspectives, approaches and techniques can be understood by everyone and buy-in will be easy.

“Process-oriented” approach is based on scientific approach namely, everything is ruled by the cause and effect relationship and it pursues not just the result but tries to get desirable results by implementing maintenance-plus-enhancement, improvement and innovation of the process that produces those results. Here “process” means the method to carry out a task and denotes a set of mutually related resources (people, equipment, drawings etc.) and activities that receive the input (hardware, software, service, energy and information etc.) and generate the output (hardware, software, service, energy and information etc.) by adding some value to it. For instance, if receiving parts from the previous process and passing them on to the next process is a process, while preparing the product planning document based on results of market survey as well as selling a product by visiting the customer are also processes.

The procedure for implementing specific activities in line with the process-oriented approach is the “PDCA cycle”. The PDCA cycle is the procedure for improving the level of the process by continuously repeating 4 steps

namely, define the target and the process for achieving it (Plan), implement it according to the defined process (Do), check whether the obtained results match the target (Check), and correct the process if necessary (Act). In organizations where many people work, since standards (arrangement for the purpose of unification and simplification) are required to define and implement processes, the PDCA cycle can also be called the procedure for establishing standards and improving their level.

“Improvement procedure” indicated in **Table 1** is further embodiment of the PDCA cycle assuming that improvement (activity where the target is set to a higher level than the current state or extension of the current state, and problems and tasks are identified, and problem solving/task achieving activities are repeated) will be carried out. This procedure is based on a scientific approach of observing, setting up and validating hypotheses, generalizing (summarizing in rules) and applying. In addition, steps for activities as small groups such as Steps 1, 4 and 9 are also incorporated. Steps 1 and 4 are the steps for sharing the purpose and method of pursuing activities, and Step 9 is a step for sharing results and connecting to the next activity.

When proceeding with problem solving/task achieving according to the improvement procedure, more effective and efficient initiatives can be made by utilizing specific techniques. The rightmost column of Table 1 shows the main techniques used in each step of the improvement procedure. The object of the technique includes not only numerical data but also language data, video data etc. In addition, a method is after all a means, and the purpose is problem solving/task achieving. By using the method, logic and rationality are born. Along with members getting convinced by the content of the activity, it becomes easy to persuade other people.

When using the improvement procedure, in addition to laying emphasis on the process, it is important to have the following perspectives and approaches.

- Customer focus (thorough market-in)
- Purpose-orientated (always thinking about what the purpose is)
- Priority approach (start and practice from the most effective)
- Fact-based management (viewing actual sites, actual objects, and reality)

4.4 Basics 3: Enhance abilities and energize the organization

Problem solving/task achieving are not something that only some people need to do temporarily. All the departments and all the layers must do them on continuous basis. In addition, whether the problem can be solved, or task can be achieved depends on that the participating people have the ability, can exhibit their ability, and can stimulate each other and the synergistic effect can be produced. Small group improvement activities play an important role not only as a means for problem solving/task achieving but also for enhancing ability and motivation needed for problem solving/task achieving and fostering team work.

People think about things and act autonomously, and if they can confirm the results, they have a feeling of joy and accomplishment and grow. Self-actualization means "recognizing, developing, and revealing the possibilities that exist within you". This applies not only to individuals but also to organizations. In order to promote self-actualization, it is important to rotate the cycle shown in **Fig. 2** on continuous basis.

For self-actualization, it is essential that the participating members have the ability to improve and the ability to work in small groups. **Table 2** summarizes the abilities required for small group improvement activities. These

abilities are further developed by practicing small group improvement activities. In order to systematically develop such abilities, it is necessary to prepare certain criteria and evaluate the level. In addition, it will be better that based on the evaluation results, the target of the ability to be acquired as an individual is set, training courses are arranged for each layer and area, and study sessions linked to specific problem solving/task achieving etc. are held so as to steadily enhance their abilities. Furthermore, it is important to arrange for opportunities and tools (case books etc.) so that people can learn about each other's good activities.

Table 1 Improvement procedure

Procedure	Description	Main techniques used
1. Selection of a problem/task	Identify the problems/tasks, narrow down based on priority approach and select those that are to be targeted for improvement activity.	Brainstorming, Affinity diagram, Pareto diagram, Matrix chart.
2. Understanding the current status	Collect facts/data regarding chosen problem/task (theme) and grasp the trend or features. In addition, observe the concerned process and grasp the current status.	Check sheet, Histogram, Stratification, Graph, Control chart, Process map, SWOT analysis, QFD (Quality Function Deployment)
3. Target setting	Determine what, by when and up to what level needs to be done regarding the chosen problem/task or the prioritized ones led from it. Also include the subject and significance of activity.	Benchmarking, Project chart
4. Formulation of activity plan	Rough time schedule for the activity till the target is achieved should also be determined along with the division of role.	Gantt chart, Arrow diagram
5. Analysis of causes (factors)	While utilizing the information obtained based on understanding the current status, repeatedly carry out hypothesis setting and verifying them regarding the cause and effect relationship between problems/tasks and the process.	Cause and effect diagram, Correlation diagram, Scatter diagram, Regression analysis, Statistical test/estimation, DOE, Taguchi method, FTA and FMEA.
6. Examination and implementation of means/countermeasures	Based on the cause and effect relationship between the problems/tasks and the process found in the analysis of causes (factors), consider means/countermeasures to improve the important causes or, if the causes cannot be improved, to prevent their influence, and evaluate, select and implement them.	Brainstorming, System chart, Matrix chart, PDPC, Arrow diagram, TRIZ, AHP.
7. Effect confirmation	Collect the data such as for the current status after having implemented the means/countermeasures and confirm the effect. Also confirm the side-effect. If the effect is not enough, go back to Steps 5 or 6.	Check sheet, Histogram, Stratification, Graph, Control chart
8. Standardization and establishment of control	Summarize the results in standards so that means/countermeasures can be sustained even if people change and incorporate in education and training. In addition, find out the way that they can be maintained on continuous basis.	Standard operating procedure, QC process chart, Control chart, Error proofing
9. Reflections and future issues	Reflect back on the steps of activity and sum up the points that ought to be put to use for future activities. Also evaluate the small group activities for enhancement in ability of members.	Progress review table, Radar chart

Note 1: For details refer to JIS Q 9024.

Note 2: Here causes are those that influence the result and includes both those that have negative impact as well as positive impact. In addition, factors are those that could be causes.

Further, continuous utilization of the results obtained through small group improvement activities (area-specific technologies related to effective means/countermeasures, cause and effect relationship of processes etc.) is also important. This is because the results of a small group will be useful for the organization in the true sense only if the effects are continued. If the results are not used continuously, activities will be ad hoc and will hinder self-actualization. Also, activities carried out spending time will go waste for the organization. Therefore, it is important that the obtained means/countermeasures and area-specific technologies are shared and utilized such as the results obtained through small group improvement activities are reflected in standard operating procedures and engineering standards and are utilized by other departments in subsequent products or services etc. Depending on the contents of the means/countermeasures and area-specific technologies, they should be segregated into categories that can be used only in the relevant department, and those that should be deployed horizontally in other departments, those that need to be modified/applied as needed, and those that should be reflected in the development of subsequent products and services.



Fig. 2 Cycle of self-actualization

Table 2 Abilities required for small group improvement activities, and abilities developed through small group improvement activities

Category	Abilities	Description
Basic	Basic abilities	Ability to understand, ability to apply, ability to create, sense of purpose, wide vision, cooperativeness, ethics etc.
	Abilities needed as a person working in an organization	Ability to take action, communication skill, presentation skill etc.
	Information-related abilities	Information gathering and utilization ability, ability to use IT etc.
Area-specific technologies	Specialized abilities	Knowledge and ability needed to execute each department's business (R&D, design, production, sales, finance, human resources, etc.)
	Knowledge about products/services	Knowledge concerning own organization's main products/services, technologies used, market/customers (including how to use operations, products/services, etc.) and ability to utilize it.
Management techniques	Improvement abilities	Knowledge concerning improvement procedures and ability to apply it, knowledge concerning improvement techniques and ability to utilize it, problem/task discovery ability, hypothesis setting ability, etc.
	Small group operation abilities	Knowledge about small group operation method and ability to apply it, leadership, ability to grasp and draw out different abilities of members, persuasive/adjustment ability, teaching/human resource development ability, etc.
	Organizational management abilities	Knowledge regarding policy management, daily management, small group improvement activities, quality management education and training, quality insurance etc. and ability to apply them.
	Understanding of management policies and abilities to deploy them	Understanding regarding mid-term/long-term business plan and annual policy and ability to deploy them.

In addition, it is better to think of evaluation/commendation and qualification systems. Small groups and individuals who have participated in these activities will feel a sense of accomplishment if small groups that have performed well are evaluated and commended and individuals who have met certain requirements are qualified by the organization. Evaluation/commendation and qualification systems should be linked with promotion, assignment of duties, formation of small groups etc.

4.5 Promotion mechanism and top management's role

The three basics described in 4.2-4.4 are spontaneously practiced in an organization that has abundant talent. However, in a normal organization, there are large variations from department to department, such as they may or may not be practiced. In some cases, people who have no practical experience and do not understand the basics become managers, resulting in a vicious department in which the basics are not practiced. In order to get out of this situation and practice problem solving/task achieving in every department of the organization, and to develop people with the necessary abilities/motivation such as quality assurance, policy management, daily management, and quality management education and training, etc., it is necessary to build a mechanism to promote small group improvement activities as an organization, practice them as per that mechanism, and periodically review and improve it. It is necessary to understand that promotion that is not based on a mechanism often fails with the change of person, even if it seems to be successful in the short term.

When considering the mechanism for promotion of small group improvement activities, purpose of promotion, promotion organization, selection of problems/tasks, formation of small groups, implementation of improvement activities (improvement procedures/techniques and operation of small groups), enhancement of ability, deployment of the results obtained, promotion of level of improvement activities, evaluation and review of promotion mechanism etc. are the elements that need to be taken into consideration. Small group improvement activities are to be conducted as an organization, and it is important to clarify their purpose and the division of role and cooperation with other activities. In addition, there are many things that need to be undertaken for the promotion of small group improvement activities. It is necessary to clarify who is to do what, assign responsibility and authority as necessary, and create an organization for promotion. Furthermore, in order to promote activities by individual small groups, it is important to build a system for registration of problems/tasks that are being addressed, grasp and support the progress of activities, utilize the results obtained through the activities as an organization, evaluate ability enhancement and contributions to activities and provide opportunities for mutual learning through presentations.

Small group improvement activities fail because human resources are not nurtured in the short term. Promotion from a mid-term/long-term perspective is necessary. For that, it is important that the top management of the organization has a good understanding. First, it is necessary for the top management of the organization to position small group improvement activities as an important pillar in business and to declare its organizational promotion. In addition, it will be better to practice the following:

- Incorporate items related to promotion of small group improvement activities and items that should be addressed by small group improvement activities into the organization's annual policy.
- Install a promotion office and ensure reporting on the problems/tasks that are being worked on and their progress status.

- Attend presentations and report meets on activities.
- Check the status of activities in each department during top management diagnosis.

If the top management of the organization practices the above, managers of each department will also get interested in small group improvement activities, deploy organizational policies to their own department, select problems/tasks, form small groups, support improvement activities, practice development of necessary abilities and deploy the results obtained. This will ensure that small group improvement activities are continuously practiced in all departments of the organization.

4.6 Team improvement activities and QC circle activities

4.6.1 Representative types of small group improvement activities

There are various types of small group improvement activities but if one arranges them focusing on the following 2 axis, they can be divided into 4 types as indicated in **Table 3**.

- (1) Workplace-wise type vs Cross-functional type: A small group of people who are doing the same or similar work in the same workplace, or a small group organized by people who work across workplaces or have different occupations.
- (2) Continuous type vs Time bound type: A small group that continues to work on different problems/tasks after solving a problem or achieving a task, or a small group that is dissolved after solving a problem or achieving a task

A person may belong to small groups of different types at the same time.

Table 3 Representative types of small group improvement activities

Type	Description
A. Workplace-wise and continuous type	Front line workers from the same workplace form a small group, take up the problem/task from their own workplace, work on solving or achieving it. Small group is retained even after a problem is solved or a task is achieved. They play an important role not only in improvement but also in activities for maintenance-plus-enhancement. For instance, QC circle, TPM circle etc.
B. Workplace-wise and time bound type	In order to solve an important problem or achieve an important task of a specific department, a small group with managers and staff of the department at the core is formed. It is disbanded after the problem is solved or the task is achieved. For instance, project or task team of each department.
C. Cross-functional and continuous type	Those concerned with specific business result or specific technology of the organization form a cross-functional small group spanning multiple departments and solve problems and achieve tasks related with concerned business result. The small group is retained even after solution to the problem or achievement of task. For example, safety committee or XX technical review committee.
D. Cross-functional and time bound type	A cross-functional small group is formed by people having advanced specialized knowledge or skills to solve a problem/achieve a task that is difficult to solve/achieve by a specific department alone. The small group is disbanded after solution to the problem or achievement of task. For instance, cross-functional team, Six Sigma team etc.

4 types of Small group improvement activities mentioned in Table 3 are common in terms of “Challenging problems/tasks in small groups”, "Improvements based on QC approaches, procedures and techniques” and “Enhancing abilities and energizing the organization”. However, they have their respective characteristics. For instance, A type i.e. “workplace-wise and continuous type” has the convenience of doing the activity on a

common base namely, the “workplace (place where one works)” and is suitable for mid-term/long-term perspective such as human resource development. However, the drawback is that the scope of the problem/task becomes narrow. On the other hand, D type “cross-functional and time bound type” which is at the opposite end of the A type has the advantage that one can have the optimal members for the problem/task and is suitable for any initiative that cannot be carried out by one department alone. However, its drawback is that one success is unlikely to lead to the next. Therefore, an organization should not carry out only one type of activity, but it is important to promote multiple types simultaneously depending on the purpose.

4.6.2 Team Improvement Activities

When promoting 4 types of small group improvement activities mentioned in 4.6.1, it is better to have a separate promotion system for each, as the problems/tasks taken up and participating members might differ.

In cross-functional and time bound type or workplace-wise and time bound type small group improvement activities (hereinafter referred to as “team improvement activities”), since the team does not exist before, it is necessary to have a mechanism where a team is formed from required members depending on the problem/task. Top management or managers should be able to exhibit leadership based on deployment of the policy of the organization. Moreover, as the team is disbanded after a problem is solved or a task is achieved, it is necessary to evaluate the ability of each individual so as to use them when forming the team again. Members who participate in the activities are persons who have acquired abilities and specialized knowledge in a specific area. Therefore, it is better to link evaluation of team improvement activities with personnel evaluation (promotion) and presentation and report meets should be positioned as the place for horizontal deployment of the results obtained or exchange of information.

4.6.3 QC circle activities

On the other hand, in workplace and continuous type small group improvement activities (hereafter referred to as QC circle activities), after having put in place the system to form circles based on workplace or job, support should be provided to each circle for selecting the problem/task (theme) and challenging problem solving or task achieving. When selecting the theme, it will be better to include problems/tasks that tend to get ignored by those not involved in that process in the list of prospective themes. In addition, since the team continues to function even after a problem is solved or a task achieved, there is a need to arrange for a system so that the circle grows by targeting higher level of activities (for instance, self-evaluation such as QC circle diagnosis). In principle, it is an activity closely linked with the workplace and all those who work there participate in it. Therefore, it will be better to think of evaluating the QC circle activities separately from personnel evaluation which is carried out based on the abilities to carry out the process one is responsible for as per the plan and they should rather be evaluated by commendation based on presentation and report meets.

Below, Clauses 5 and 6 discuss these two small group improvement activities respectively and specific guidelines for their promotion have been presented.