Impact of ICT
on Community Revitalizing Activity

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The Purpose of this Research

In Japan, against the backdrop of harsh economic conditions, local communities have been losing their drive and vitality. At the same time, many of these communities have been losing their identities due to reasons such as the enormous population shift during the period of rapid economic growth in Japan and the growing primary identification of workers with their own companies. This prevents local residents from solving their own problems through traditional networks which once worked well. In addition, it is difficult even for many local governments, who have the responsibility to "publicly" support the people in the community, to deal with problems alone due to the financial constraints they are subject to.

Based upon these circumstances, a concept of "New Public Commons" has been proposed: Simply put, it proposes that private sector actors such as NPOs play an active role in "public" activities which local governments are responsible for. To promote these "public" activities, a variety of efforts for community revitalization using Information and Communications Technology (ICT) have been being realized throughout Japan; people who wish to try to solve their problems locally by themselves are getting together and getting involved in activities.

The usual scenario is that these activities begin with a leader and a few core members who follow his or her ideas. The broader their activities become, the more local people get involved. In some cases, they approach other communities to work together to enlarge the scale of their activities. Local people who join the activities are said to voluntarily get involved when they are empowered by participation.

Quantitative research, however, has seldom been conducted on how the interests of local people who join community ICT activities in this way shift regarding the communities in which they live through participating in the activities, since there are not many cases available nationwide where community ICT activities continued for a prolonged period without interruption in a certain community; cooperation in activities between communities are even more rare.

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In this research, we focus on "Internet Shimin-juku" (hereinafter referred to as "Shimin-juku"), community organizations which fully utilize the Internet for e-learning. The first Shimin-juku was established in 1998 in Toyama Prefecture. Since then, more Shimin-juku organizations have been set up in other communities; this is one of the rare cases which provide continuous cooperation activities among communities. We conducted a questionnaire survey of Shimin-juku participants, asking what kind of activities they take part in, why they join the activities, what they expect next, etc.

The first topic is the importance of resident participation in community revitalization activities using ICT, followed by the overview on the development of Shimin-juku. Next, based upon the questionnaire results, it is analyzed that how participants develop their interests in their communities and in cooperation activities with other communities, including problems and requests related to Shimin-juku activities, and their intention to work on local problems and to cooperate with other Shimin-juku organizations.

Resident participation in community revitalization activities using ICT in Japan

"Community ICT activities" is to fully utilize ICT including the Internet in order to solve local problems and to revitalize the local community.

Community ICT activities until the 1990s had been mainly realized as ICT activities inside local governments led by themselves, or as local government policies on condition that knowledge-based business with ICT and other technologies should be invited and established.

In the 2000s, activities to solve the local problems with ICT had become different from those in the 1990s, promoted not only by local governments but also by local people. The change came because advances in mobile communication technologies have allowed end users to utilize broadband internet connections for transmission of large data volumes and realized a ubiquitous computing environment, and also because the cost of establishing an ICT environment with network equipment has decreased. In addition, a favorable environment for local people to act came into existence when the NPO law was established in 1998.

In the "e-Japan Strategy" of 2001 the central government laid out a goal to realize high-speed and super-high-speed broadband networks, leading to the rapid development of the ICT infrastructure. During this period, there were some local areas where the local governments took initiative to develop the broadband network infrastructure because introduction of ICT by telecommunication carriers was slow. In the late 2000s, however, ICT introduction by the carriers had greatly advanced so that super high speed broadband services became available in more than 90%

of cities and towns; in recent years, there have been only a few cases where a local government played the leading role in bringing information and communication network infrastructure to a remote area. A national ICT strategy, the New Strategy in Information and Communications Technology in 2010, focused on "re-bonding local communities" as one of the three main points, giving high priority to full utilization of ICT by local communities like NPOs for local vitalization of information.

In this way, ICT can enable smooth communication and play a role in empowering local people who have previously not had any organization to belong to. The technology is also recognized as an extremely important tool to revitalize local communities. In addition to the ICT infrastructure, social ties and human resources capable of assuming the leadership of organization management are also widely accepted as important elements (see "Information and Communications in Japan – 2010 White Paper" for details).

Internet Shimin-juku and its expansion

Commencement of Internet Shimin-juku

The Shimin-juku project started when an employee, named Tomio Saku, of a system integrator, collaborated with Toyoma Prefectural Government, Toyama University and other organizations in 1998. Under the concept that local citizens help each other to teach and learn, lecture content delivered by local instructors was distributed by Shimin-juku, an e-learning platform on the Internet. The purpose of the activities was to encourage local people to share their knowledge. Therefore, anybody who joined the project could share their knowledge as an e-learning text, and anybody who was interested in the lectures could get together to learn. What this group had been seeking was a social network through learning, which places great importance on community learning.

The Shimin-juku Server, developed in order for local people to smoothly share educational information, has all the necessary systems including tools to produce teaching materials and manage net-classrooms for instructors, study records for participants, and an SNS function only for e-learners. The introduction of this server led to physically opening Shimin-juku as information infrastructure. The introduction of a learning system is, therefore, relatively easy as regards equipment and facilities. On the other hand, the local people who take part in and manage the project and the management system itself are inevitable in order to promote the ICT utilization.

The governing body is Toyama Internet Shimin-juku Kyogi-kai, or the Toyama Internet Shimin-juku Council, of academic, business and governmental

organizations, including Toyama Prefectural Government, Toyama municipal governments, local companies, universities in Toyama Prefecture. Since public organizations such as municipal governments take part in the gathering, the group operates as a council and each participating party is supposed to promote the utilization and prevalence of ICT. The secretariat is run chiefly by Tomio Saku, the executive director, with a few core members. As of the end of March, 2011, about 7,800 members were registered as users and the total number of participants reaches almost 100,000 a year.

Expansion of Shimin-juku

Shimin-juku activities in Toyama have been introduced nationwide as a case study of community ICT activities after receiving the Nikkei Internet Award in 2001, and Prime Minister's Award for Internet Application to Educational Activities in 2002 so that those involved in community revitalizing activities throughout Japan could learn from them.

The leaders of community revitalizing activities in other areas who knew what Shimin-juku was doing deeply agreed with the idea of community ICT utilization, which was different from existing projects in that local residents should voluntarily learn, think and deal with regional problems among themselves. That strongly motivated them to start the same kind of activities in their own communities, and led them to contact Tomio Saku to start communication between them. Mr. Saku shared the case studies and know-how from Toyama, and deepened the relationships with mutual visits. After their mutual exchange activities, local leaders who wished to start Shimin-juku activities got together to hold the First Shimin-juku Summit, in Takaoka City, Toyama Prefecture, 2004. During the event, each leader confirmed the purpose and significance of Shimin-juku. After that, Shimin-juku clones sprouted up one after another throughout Japan.

At Shimin-juku, participants produce teaching materials (content) based on knowledge and experience, and shall create learning communities with other participants. Therefore, people could participate in any Shimin-juku in any community on the Internet when various learning needs arose, and it became expected that content would be shared. At this stage, Shimin-juku organizations which were established in different cities cooperated to conduct joint projects. But, at the actual implementation of projects, each Shimin-juku separately carried out its own projects; despite their strong ties, they did not go further than support each other.

In 2005, Shimin-juku was appointed to manage "youth independence support" services for the Ministry of Education, Culture, Sports, Science and Technology,

which was developing e-learning content. Based upon the close relationship built up when they cooperated with each other to establish their own organizations, every Shimin-juku developed its own unique content and started to share them with one another. Shimin-juku Union Suishin-kaigi, or the Shimin-juku Union Promotion Conference, was held in the same year to deepen cooperation among Shimin-juku through services to support young people since the number of Shimin-juku was increasing, whether organizations had been already established or scheduled to be established.

Shimin-juku Summits were held once a year in 2006 and 2007 with the aim of sharing information on local Shimin-juku activities, sharing problems and discussing how to cooperate with one other, along with boosting exchanges. In 2007, each Shimin-juku was in charge of the re-challenge support program for employment designed by Ministry of Education, Culture, Sports, Science and Technology. They cooperated further and discussed how to produce the content and implement the program at each Shimin-juku. In addition, at the Shimin-juku Summit in Toyama held in 2007, it was suggested that the system of Shimin-juku should be improved and shared among all Shimin-juku. Review sessions were also held to design a system, in which leaders from each Shimin-juku participated.

Following this policy, the Shimin-juku Union was dissolved and an NPO Local Chiiki Gakushu Platform Kenkyu-kai, or Local Learning Platform Study Group (named "Shimin-juku Net"), was established in 2008. The main points included the following: to thoroughly study how to solve local problems such as human resources development in local communities, and how to utilize Shimin-juku; to cooperate to deal with themes in common as one project; to jointly utilize the system.

In 2009, Shimin-juku received support from the Ministry of Education, Culture, Sports, Science and Technology to make learning materials for handwork. Before that, only people in Toyama had been involved with the project, but other Shimin-juku also joined to develop the materials into the nationwide version as an e-picture-book of handwork. Furthermore, Shimin-juku Net researched from the educational view point how to utilize the e-book, and distributed the report as a teaching guide. For its current research activities, the members have been working on an "e-portfolio"[1] and how to set up their own cloud computing system. There are 10 organizations[2] which belong to the Shimin-juku Net. No group has any particular relationship with any other either geographically or organizationally; the activities of Shimin-juku are all they have in common.

So far, regional leaders utilize the net to exchange information ideas. In addition, there is an annual plenary session and three or four meetings by theme a year scheduled.

Impact of ICT on Community Revitalizing Activities

Shimin-juku aims to improve local people's interest in their communities through learning activities. Sharing learning content with other communities leads to raising awareness of others. As a result, they once again care for their own communities from a different perspective; this is also another aim of Shimin-juku.

This kind of concern allows participants to build human networks and also to take an interest in community revitalizing activities.

Outline of questionnaire

Among Shimin-juku which cooperate with other communities, the questionnaire sheets were sent via each secretariat to the users of Internet Shimin-juku Toyama and Wakayama, which have a long history of activities from the beginning. We received 29 and 51 responses respectively. The questionnaire asked the number of years of using the service, the purpose of using the service, the content of lectures, problems and requests regarding the activities, and user's intention to work on community problems and to coordinate with other communities. We analyzed how the users' interests toward networking with other communities and toward their own community have developed.

The way that Shimin-juku is composed, there are so-called "core members" who support the community leader leading activities and organize the group and the projects. Few people are designated as core members; usually only two or three. It is believed that no users mentioned below will become core members in the future, and that the number of core members will not significantly change even if the organization gets bigger with activities increasing. This is because core members are expected to work on project management, resulting in more tasks and more responsibilities.

At Shimin-juku, some users not only utilize the content Shimin-juku provides, but also deliver lectures as an instructor or provide information with the Shimin-juku management staff. The reason why Shimin-juku can continue its projects is because those people voluntarily participate in the development and management of the organization. This means that some regular users may support Shimin-juku activities by taking part in management by giving necessary information to core members and lectures as citizen lecturers, and by helping instructors to start new classes. They are called "Supporters," and are very different from simple "Regular Users." Supporters do not include core members.

The purpose of utilizing Shimin-juku

When asking the purpose of utilizing Shimin-juku, as figure 1 shows, 74% of respondents answered "to deepen their knowledge and education," 53% "to help their current job or future career," with the majority seeking to develop their own skills. Followed by 45% answering "to pass on their knowledge and experience," 43% "to build the network with someone who can expand learning and activities," 39% "to connect with the community and society," 31% "to help solve problems of the community and society," their purpose of utilizing Shimin-juku were to establish human networks through Shimin-juku activities and to contribute to society. Making a comparison between Supporters and Regular Users by the role they play in Shimin-juku, Supporters tend to be interested in the outside world such as developing a human network and contributing to the community, rather than simply developing their own skills.

On the other hand, more than 90% of Regular Users purpose was to develop their own skills. The ratio of those whose purpose was to contribute to others, answering "to pass on my knowledge and experience," and "to help to solve problems affecting the community and society," was less than the overall average.

The difference in the purpose of utilization can be thought to have an effect on the role the participant plays in Shimin-juku.
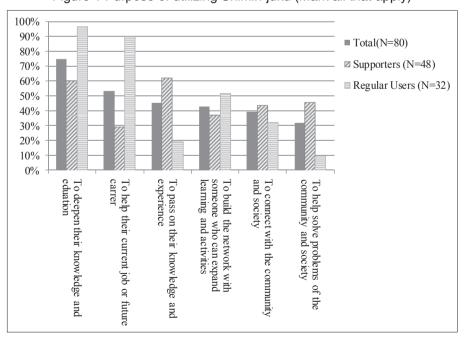
Figure 1 Purpose of utilizing Shimin-juku (Mark all that apply)

Needs for lectures and activities

Table 1 shows problems related to Shimin-juku lectures and activities, and Table 2 shows requests for Shimin-juku lectures and activities. As a whole, approximately 30% answered "difficult or impossible to find time to participate in learning and activities," followed by "hard to participate because the contents of learning and activities are not clear." For Supporters, the majority pointed out the problem of "difficult or impossible to find time to participate in learning and activities" while most Regular Users picked up "hard to participate because the contents of learning and activities are not clear" as the biggest problem.

What is common to both groups is that less than 20% complained about the content, for example "content of learning and activities is shallow and not appealing," and "content of learning and activities is not what I expect." Concerning requests for lectures and activities, the most significant request from Regular Users is "content should be more easily understandable," consistent with the problem pointed out above. Furthermore, more than 20% of the both Supporters and Regular Users pointed out regarding content that "the amount of learning should increase," and "the amount of content and its quality should be improved."

Table 1 Problems of Shimin-juku lectures and activities

	Problems of Shimin-juku lectures and activities (Mark all that apply)							
	No contents what I want to participate	The amount of contents is not sufficient	Content of learning and activities is not what I expect	Content of learning and activities is shallow and not appealing	Hard to participate because they have schooling	Difficult or impossible to find time to participate	Hard to participate because the contents are not clear	N
Supporters	13%	15%	15%	10%	6%	40%	15%	48
Regular Users	9%	19%	9%	6%	9%	28%	34%	32
Total	11%	16%	13%	9%	8%	35%	23%	80

Table 2 Requests for Shimin-juku lectures and activities

	Requests for Shimin-juku lectures and activities (Mark all that apply)							
	The amount of learning should increase	The amount of content and its quality should be improved	Requests should be reflected	Content should be more easily under-standable	They want to work as an instructer or a Leader	They want to work as a menter	They want to work as a Supporter	N
Supporters	23%	23%	21%	17%	4%	8%	17%	48
Regular Users	28%	25%	25%	41%	0%	3%	9%	32
Total	25%	24%	23%	27%	3%	6%	14%	80

Concerning the number of available lectures, those falling under "Education & Learning" and "IT" are the most popular followed by "Hobby" and "Community" both in Toyama and Wakayama. The number of lectures and fields for Wakayama Shimin-juku is fewer than Toyama's. For example, there are no lectures on sports and business in Wakayama. Therefore, some users in Wakayama looking for the kind of content and lectures they like are utilizing some of those which other Shimin-juku in different communities provide. Needs about content Shimin-juku users seek encourages the utilization of content available in other communities, promoting cooperation among Shimin-juku in different communities, by effective influence of the Internet platform in which there is not spatial restriction and another merit that anybody can utilize the same platform even in different communities.

For the problem regarding Shimin-juku lectures and activities, the most common answer was that time constraints prevented users from participating in programs, like "difficult or impossible to find time to participate in learning and activities"; the number of users who identified content quality or quantity as a problem was less than those who complained about lack of time. The merits of e-learning compared to regular classroom-based learning is that there are neither spatial nor temporal restrictions, which means the learner's convenience has priority over everything else. However, the results of the questionnaire show that this merit cannot be effectively demonstrated. Whether this is because the Shimin-juku learning system has problems to be solved or because the individuals who answered the questionnaire are extremely busy is not clear.

In addition, when asked about problems with instructors or mentors[3], the answer most often given was that "there is no place for exchanging information and opinions," showing that quite a few users placed importance on interactive communication and a human network. Those who want particular content often utilize Shimin-juku lectures in other communities, leading to deepened cooperation with other communities. The same thing can be true for the needs for time and communication; if there is a system which satisfies those needs in cooperation with other communities, Shimin-juku activities can be expected to become more revitalized.

Current situation of participation in other communities' activities

When asked whether they had ever participated in Shimin-juku lectures or activities in different communities, about 40% of respondents answered that they had participated before or are now participating. By age group, all generations except those in their 20s had participated in Shimin-juku lectures or activities so far. Although those who have been Shimin-juku members for less than one year have already participated in lectures and activities offered by other communities,

generally the longer respondents have utilized Shimin-juku the more they have utilized content offered by other communities.

The cross tabulation of Table 3 shows how each group of Supporters and Regular Users have participated in the lectures and activities of other communities' Shimin-juku. For Supporters, data is compiled by how many years they have utilized the service; on the other hand, for Regular Users, data is compiled gross since there might be some errors expected due to not many data collected by time period. At the overall result, the ratio of participation shows a different tendency between the two groups. Therefore, for the difference between the two groups, the chi-square test was applied to whether having participated or not; the result is a significant difference with a p-value of 0.013. Therefore, it can be said that Supporters are likely to have more experience of other communities' Shimin-juku than Regular Users.

Table 3 Relationship between role and experience of other communities

		Have you ever participated in Shimin-juku lectures or activities in diffierent communities?	
	Service-use period	Yes	No
Supporters (N = 48)	Less than 1 year	0%	100%
	1 to 5 years	52%	48%
	More than 5 years	73%	27%
Regular Users (N = 32)		26%	74%

As a result, like the purpose for utilizing Shimin-juku, the role in Shimin-juku can be said to have an influence over whether the user participates in other communities' Shimin-juku or not. Regarding the role in Shimin-juku, according to Isagai (2007), in the case where individuals independently practice community activities like Shimin-juku, after frequently communication with Core Members, such as through meetings, Regular Members are supposed to become Supporters who positively get involved in activities, with once weak ties of relationship becoming strong ties. The respondents were also asked about requests for the future (See at Table 2). Regarding Supporters, about 20% indicated that they wanted to participate in the management of Shimin-juku in a different position from the past: in a way they can get involved more deeply in the activities. There is, however, no clear tendency that the longer experience they have the more they want to get involved.

On the other hand, for Regular Users, those who answered that they wanted to work as a Leader or a Supporter had less than one years' experience of Shimin-juku; there are no Regular Users who have utilized Shimin-juku for more than five

years and also wanted to get more involved.

For those who have already worked as Supporters, some of them get more active and seek to increase their activities. But the percentage of those people is not so high, therefore, it is likely that how long they have participated in the activities does not influence them; it can be said that the role in the organization depends on their own enthusiasm about the activities. The same tendency can be recognized in regard to Regular Users. There is a possibility that those who participated as Regular Users at the beginning and now want to get involved in the activities more voluntarily will play the role of "Supporter" which requires more involvement. At the same time, there are some participants who continue only to take lessons; they probably only take classes because that is their sole purpose.

Desire for cooperation with other communities

Concerning the relationship between how many years they have utilized the services and their intention to cooperate with Shimin-juku in other communities, data is compiled, like Table 3, for each group of Supporters and Regular Users (Table 4).

Table 4 Relationship between service-use period and cooperation with other communities

Supporters	Cooperation with other communities (Mark all that apply)		
Service-use period	It is good to share learning and activities with one another	It is good to learn together	To make use of it to solve the local problems
Less than 1 year	67%	33%	17%
1 to 5 years	50%	27%	23%
5 to 10 years	40%	27%	47%
Total(N = 48)	53%	27%	33%

Regular Users	Cooperation with other communities (Mark all that apply)		
	It is good to share learning and activities with one another	It is good to learn together	To make use of it to solve the local problems
Total (N = 32)	65%	26%	0%

For both groups, the opinion that "it is good to share learning and activities with one another" was the most common, followed by "it is good to learn together," and "it is good to share instructors and leaders with one another." Most users have a positive attitude toward cooperation with other communities. It seems that they think that sharing content and human resources can help solve the problem of lack

of content, which every community individually faces, and that furthermore it allows more efficient use.

On the other hand, concerning desire for cooperation with other communities, while about 1/3 of Supporters answered "to make use of it to solve the local problems," there were no Regular Users who shared ideas with Supporters. This question shows that learning in another community and comparing it to your own lets you understand the characteristics of your own local community better than ever. Furthermore, this gives you a new perspective with which to solve local problems -- this is how the respondents seem to think. Analyzing the reasons why Supporters agree with cooperation with other communities Based upon the research mentioned above, it is expected that the service-use period, the service-use purpose, and role of human resources in the Shimin-juku platform have an influence on whether a local Shimin-juku cooperates with ones in other communities. Supporters, who voluntarily participate in activities, the longer experience they have in Shimin-juku the more they think that they want "to cooperate with other communities." Regression analysis was used to uncover the reasons why they want "to make use of cooperation with other communities to solve local problems," with making the reasons why they participate in Shimin-juku, and how many years' experience they have had as Supporters as explanatory variables. For the analysis, Supporters were categorized into instructors or mentors, and supporters who help manage Shimin-juku, and the time period by role was taken into consideration. Table 5 shows the analysis results.

Table 5 Supporters' role, service-use purpose, and cooperation with other communities

Variables	Odds ratio	p value
The number of years involvement in Shimi-juku instructors or mentors	1.94*	0.076
The number of years involvement in Shimi-juku management	2.34**	0.022
To pass-on their knowledge and experience	0.60	0.519
To connect with the community and society	0.74	0.699
To help solve problems of the community and society	3.9*	0.099
Nagelkerke R-square	0.474	
Hosmer - Lemeshow Sig.	0.799	
N	48	

  * p < 10%
** p <　5%

According to the analysis, the number of years involvement in Shimin-juku management has a 5% significance level with positive effect, and it is more influential than any other role. In addition, it is clear that the service-use purpose of "to help solve problems in the community and society" has a strong influence on the desire for cooperation with other communities. The analysis result shows that the service-use purpose of Shimin-juku and the purpose of desire for cooperation with other communities are somehow consistent; other service-use purposes, such as "to pass-on my knowledge and experience" does not show any influence.

With analyzing experience in other communities and desire for cooperation with other communities, not only the service-use period but also the service-use purpose are indicated as important factors to promote cooperation with other communities. The fact that the role played in Shimin-juku has an influence on the service-use purpose shows that those who are interested in not only internal elements but also external elements may have an increased interest in Shimin-juku management as they use the services longer. Furthermore, it is believed that participating in activities held in other communities and attending lectures with one another allows them to share awareness of common problems, and that looking into their own community relatively increases awareness of dealing with local problems and interest in their own community.

Conclusion

In Japan, during the period of rapid economic growth after the Second World War, the traditional relationships based on regional bonds and family bonds became less influential. The advancement and prevalence of ICT has contributed to expanding communication between local residents in communities; as a result, the expansion of communication makes it possible to strengthen personal networks in communities. Utilizing ICT as a communication tool can help revitalize even a community with relatively low level of communication among local people.

The goal of the activities of Internet Shimin-juku mentioned in this paper is to reestablish human relationships in local communities; that is very clear from seeking not only lifelong learning over the Internet, but also a social network through learning. In addition, it is believed that working together with other communities which share the same kind of activities makes it possible to strengthen the existing human network, and moreover to build a new network by establishing relationships beyond one's own community. According to the analysis results of this research, it is confirmed that those who are interested in their community, try to voluntarily change the situation, and get involved in community ICT activities become participating in the activities as Supporters. At the same time, a new empowerment can be also recognized, which means that cooperation among communities increases the interest in other communities, and knowing those other

communities itself enlightens local people about their own community, leading to working with their local activities.

There are still many problems that need to be solved over the near term, including securing sufficient financial resources, expansion of content, establishment and operation of physical platforms (Shimin-juku Server for Shimin-juku), in order to vitalize community ICT activities. Among them, the most highly required is community leaders and those who support them. During the continuous community ICT activities, ideal human resources will be acquired through the empowerment of people.

Shimin-juku has been currently promoting examination of the cloud computing system for physical platform and the development of local contents in the "e-handwork." In order to overcome any problems, it is necessary to expand the human network and really empower staff members by proceeding projects with the cooperation of communities, wherever they are.

NOTES

1. A new learning assistant tool to continuously support self-growth and social participation through life-long learning. The "e-portfolio," which Shimin-juku in any community can share with each other, is now being developed as one of the functions of Internet Shimin-juku.
2. Toyama Internet Shimin-juku (Toyama City), Shimin-no-chikara-Wakayama (Wakayama City), Tokushima Internet Shimin-juku (Tokushima City), Tosahachikin-net (Kochi City), Shogai-Gakushu Support Center (Onomichi City), Kumamoto Internet Shimin-juku (Kumamoto City), SFC Shimin-juku (Fujisawa City), Chagenkyo Wazuka (Kyoto City), Bosai Shimin-juku (Kobe City), Kyoto-fucho (Kyoto City) (From Wakayama to Kumamoto: NPOs, Others: Private organizations)
3. A mentor is to keep control of participant's learning and check progress, and support instructor and participants by giving proper advice.

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