A research on using ePortfolio to support practical use of learning achievements and actualization of regional human resource

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Abstract

Many citizens intend to apply their accumulated wealth of learning and experience, and such support has been expected. However, existing lifelong learning organizations, which have been laying emphasis on supporting the learning end, have not been attending to supporting the application end of learning achievements. On the other hand, a variety of challenges reside with the citizens. By utilizing ePortfolio to try out support programs to apply learning achievements, various challenges were found to surface in the review process of putting learning achievements to practical use, and a systematic support based on individual processes has been found to be effective. Furthermore, apart from the learning achievements which were originally intended, there were new learning achievements brought to notice by external parties. Support of such insights brought about more diversified and practical use of learning achievements, as well as possibilities of actualization of new regional human resources.

This research focused on the challenges encountered by citizens who wished to apply their learning achievements, performed practical assessments on effective support strategies using ePortfolio, and considered how these could contribute to the actualization of regional human resources.

1. Introduction

Many citizens desire to apply acquired knowledge to the workforce or contribute to regional activities. According to a poll conducted by the Cabinet Office [1], 77.7% of interviewed citizens expressed mild to strong desires to apply and contribute their learning achievements. An awareness survey conducted by the Toyama prefecture Lifelong Learning College (Henceforth "Kenmin College") on course attendees similarly indicated that 72% expressed mild to strong desires to apply and contribute. By comparison, while a survey conducted by the Ministry of Education [3] on national lifelong learning centres and regional social educational facilities (henceforth "support organizations") found that assessment and utilization of learning achievements were deemed "very important" or "important to a certain extend" by 73.8% in prefectures and 57.1% in municipalities, a similar survey conducted by the Research Centre for Application of Social Education at the National Institute for Educational Policy Research [4] indicated that the percentage of those that were actually implemented with priority in prefectures was only 45.1%, less than half the overall number. A questionnaire survey conducted by

community centres and other social education facilities in Toyama Prefecture [5] found only 8.7% replying in support of activities organized proactively by prefectural citizens. This survey found top reasons for not supporting to be: "insufficient volunteers and people willing to commit to regional activities" (16.1%), "inability to understand regional challenges, modern challenges, and secure relevant talents" (11.9%), "lack of support know-how" (11.9%), all of which exceeded "problems with reduction of staffs" (9.2%). Hence, the current situation reflects the reality of a large gap between the intention of citizens and the initiatives of support organizations. The background to the problem was that current initiatives were based on providing opportunities and understanding needs for learning, which support or provide the entry into learning, instead of emphasizing on supporting the application of learning achievements as the end-product.

As social challenges become progressively complex, requirements for diversified talents increase, and so do expectations on citizens to contribute their wealth of knowledge and experience to society in a variety of ways [6]. As such, roles of support organizations, which have common grounds with supporting citizens' learning, are expected to include the end-product of deriving possibilities of putting learning achievements to practical use, on top of providing an entry into learning.

2. Research Goals

The possibilities of application of diverse knowledge and experiences of citizens include various social activities ranging from corporate employment to entrepreneurship of new services required by society, and knowledge transfer to future generations, etc. However, while it is possible that learning achievements required by, and applicable to social activities, can be perceived from a multifaceted viewpoint, it is not easy for individual citizens to find meaning to their own experiences and learning history from a diversified viewpoint, to capture and embody potential practical opportunities hidden in employment or in the society and region. In a questionnaire survey conducted on support organizations in Toyama prefecture [5], some of the citizen-related challenges that were pointed out included "failure to fully grasp learning achievements" (5.0%), and "goals not concrete, or stagnating in wishful state" (7.8%). Consequently, for citizens wishing to apply their learning achievements, the first important step can be said to be to concretely grasp the process in which challenges arose. On top of that, it would also be necessary for support organizations to systematically support citizens wishing to apply their learning achievements, adhering to the individual process of each.

The goal of this research would be towards the development of the support program which systematically supports the application of learning achievements (henceforth "support program"), to concretely grasp challenges faced by citizens in putting learning achievements to practical use, to practically assess these support strategies, and to consider how to contribute to the actualization of regional human resource. Application of learning achievements may be classified [7] according to different goals and situations, and the current research focused on "application at the society level, for the benefit of others as well as the society". Furthermore, learning achievements may be acquired in diversified forms, and there are actual cases of informal learning

realized in employment as well as various aspects of daily life. In this light, the audience of this paper should not be limited to "learners", but more generally to encompass citizens at a broad level unconstraint by space and time.

3. Previous Research

A previous research which started in 2010 initiated studies to utilize ePortfolio learning histories and usage histories [8]. The features of ePortfolio include recording and maintenance of experiences and learning histories, as well as observation and analysis to facilitate future planning. This provided the base structure for the social acknowledgement of the learning achievement and performance of each individual, and found widespread usage in Europe and America. To assess the usefulness and usability of application of learning achievement using ePortfolio, verification experiments were conducted on various audiences.

1) Recording of learning achievements and attempts on self-assessment

We had high-school and university students, as well as members of society seeking re-employment, to perform self-assessment on ePortfolio to evaluate possibilities and challenges faced while seeking employment, and verified the results. Individuals recorded their learning and activity histories on ePortfolio. The process of compiling future application plans encouraged reflections and contemplation, which stimulated the effects of re-assessment of the learning achievements.

2) Attempts to create execution plans to apply learning achievements

We reviewed items including the form in which learning achievements will be applied, the theme, challenges, location, audience, mode of application, competence of individuals, action steps, and analyzed effects gained with execution plan mapped out, and verified the nature of the challenges. The process of thinking through the execution plan promoted a heightened awareness towards the region and society, and exerted an effect of assessing one's own learning achievement from various viewpoints.

3) Attempts to recognize regional human resource

In this trial, citizens aiming to apply their learning activities to social activities were recognized as potential active regional talents, and the effects and challenges of supporting the application of learning achievements were verified. Based on records of histories of learning and activities, execution plans were created to apply learning achievements. Through the assessment system created by regional industry-acadamia-government initiative, implemented by the human resource approval organization, those who satisfy a certain criterion were issued a regional ePassport and the information was opened to a wide region. This trial confirmed the possibilities of promoting actualization of regional human resources.

Through these initiatives, the effectiveness of using ePortfolio as a platform to promote putting of learning achievement to practical use, and recognition of regional human resources have been confirmed. On the other hand, goal settings to facilitate application of learning achievements, through reflection and contemplation via historical records of learning and activities, are basically

individual activities which are at the same time heavily dependent on the existence and relationship of third parties and supporting personnel. It has become evident that strategies to implement support which considers individual processes are crucial.

Based on the results of the findings, we have decided to perform confirmation studies with the goal of developing support programs capable of systematically supporting the application of learning achievements at lifelong learning centres and social education facilities, where citizens participating in learning and other activities can receive actual advice.

4. Development and trial run of support program

(1) Structure of support program

The structure of support program is shown in table 1. In previous researches, the different components of "supporting revision of histories of learning and activities", "goal-setting, supporting creation of execution plans", and "identification and revelation of regional talents" were segregated and implemented independently. However, in the current research, "supporting formation of motivation" was added on top to systemize the entire platform to achieve a comprehensive support.

Table 1　Structure of support program to apply learning achievements

Steps	Goals of implementation	Implementation method
Supporting review of histories of learning and activities	To systemize and overview experience (professional or otherwise) and learning histories	Orientation
	Reassessment of experiences (self-efficacy, meta-cognition), promotion of self-understanding	Overall consultation
		Individual consultation
Supporting formation of motivation	Comparison of learning achievements with regional diversified fields, etc	Individual email consultation
	Promotion of realization of diversified values	Mailing of support letters
Supporting goal setting	Promotion of embodiment of goals	
	Promotion of investigation and understanding of fields of action	Implementation plan review meeting
	Consideration of competency requirements	
Supporting creation of execution plans	Promotion of actions (self-motivated surveys, visits, discussions, documentations, etc）	Presentation of implementation plan
	Assessment of small-scale trials and promotion of step-up refinements	Follow up
Identification and revelation of regional human resources	Connection to official certification and practical opportunities	Revelation as Kenmin college human resource information
	Breeding of autonomous activities and sense of responsibility through talent revelation	

(2) Scheme of Implementation

As a trial project, the Kenmin College organized a project support program to facilitate proactivity, gathered participants, created execution plans for activities to apply learning achievements, and supported the matching of such activities. Within the project, a trial assessment of the support program was performed. The implementation was co-organized by

the Toyama Prefectural Education Committee, the Toyama prefectural community centre federation, the Kenmin College, as well as the research committee formed by industry-academia-government.

(3) Implementation Timing and Participants

Calling for participants took place in October 2013, and briefing and orientation was held in December on the same year. 28 participants revised their learning and activity histories on worksheets, and held group discussions towards applying their achievements. A questionnaire survey was also conducted on all participants on putting learning achievements to practical use. From the questionnaire survey, as well as confirmation of intention to take part in the support program, 15 of the participants expressed positive interest. For the 15 who expressed interest, a group-based program and an individual-based program were implemented by March 2014.

Table 2　Implementation date and number of participants

Overall program		
Briefing session on support program	Once in December 2013	28 participants
Overall consultation （face-to-face）	Twice in January 2014	15 participants
Mailing of support letters	Total of 8 times from December 2013 to March 2014	120 letters
Implementation plan review meeting	Total of 3 times from February 2014 to March 2014	17 participants in all
Presentation of implementation plan	Once in February 2014	12 participants
Individual program		
Individual meeting session	Anytime from January to March 2014	18 participants in all
Individual email consultation	Anytime from January to March 2014	50 letters in all

(4) Mentoring

Apart from the overall briefing and presentation, 6 mentors were assigned to be in-charge of participants in each support program. The contents of the training were as follows:

- Arranging and reviewing learning and activity histories, and verbalization of learning achievements via self-assessment.
- Promotion of support activities and task generation of execution plans geared towards application of achievements.
- Encouragement and review documentation of execution plans.

As part of revision and self-assessment, participants described the step-by-step process of accumulation of their learning and experiences to date, adopting the story-telling method which deepened their self-understanding and self-assessment. Mentors supported the verbalization of learning achievement while fulfilling the role of progress and active listening. Care was taken to ensure the promotion of proactivity of the participants.

(5) Execution Plan

The participants aimed and strived to create execution plans as fruits of participation in the support program, while receiving mentoring at the same time. Execution plans were concrete plans which encompass participants' experiences, learnings, acquiring, and activities to date, and how these could benefit themselves as well as the entire society. To demonstrate that the execution plan was supported by the experiences and results of each individual, histories of past learning and activities were appended to show association in the presentation materials. On top of these, materials explaining how individuals understood their initiated challenges and competencies, as well as current initiatives leading towards solving challenges were also included.

(6) ePortfolio

Neither the execution plan nor the associated materials which provide supporting evidence was to be completed at one go, but to be progressively renewed and included while receiving mentoring during participation in the support program. Recording and renewing of the process was facilitated and provided by the ePortfolio system. The system enables recording and renewing in the form of lifelong learning career sheets digitized from a series of videos and materials. The support program benefits not only participants, but also cooperation from the mentors' perspective. Furthermore, it would be possible to continue to utilize the system and record from anywhere and anytime, even after the end of the support program.

(7) Presentation of Execution Plan and Recognition of Regional Human Resources

On the final round of the support program, all participants presented their created execution plans. The execution plans were presented using the own words of participants, and included the background of activities as well as related personnel. Representatives of support organizations attended the presentation and those who attained a certain assessment in the execution plans were recognized as regional human resources. The regional human resources would be registered in human resource databases of the Kenmin College, and their profiles shared and introduced to a wide audience to community centres as well as regional activity centres via pamphlets and on the internet. The contents of the human resource database disseminated presentations performed at support programs via video, and provided a showcase enhancing the visibility of regional human resources.

(8) Questionnaire survey to participants of support programs
    1)   Contents of survey
        The contents of the survey on application of learning achievements were compiled in table 3. These included statuses to date, future intentions, initiatives and efforts to arrive at goal, inquiries made at Kenmin college and community centres, status of activities including consultation, status of material comprehensively explaining histories of learning and activities,

whether these materials were beneficial, and type of consciousness of challenges towards applying learning achievements.

Table 3 Survey questions on "Application of learning achievements and experiences"

Q1	Learning environments to date (plural answers accepted）
Q2	How did you apply your learning achievements and experiences? (plural answers accepted）
Q3	For those who applied learning achievements in Q2, in what forms were the learning achievements applied?（plural answers accepted）
Q4	For those who applied learning achievements in Q2, please describe specific examples.
Q5	Do you intend to apply learning achievements and experiences in any way in future?
Q6	For those who replied "strongly agree", "agree", or "to consider" to Q5, in what forms would you like to apply learning achievements？ (plural answers accepted）
Q7	For those who replied "strongly agree", "agree", or "to consider" to Q5, what are the situations of application considered? (plural answers accepted）
Q8	Have there been concrete attempts to applying learning achievements or experiences? (plural answers accepted）
Q9	For those who have participated in any of the above, please introduce and explain the session which was most beneficial.
Q10	Have you ever consulted organizations such as Kenmin college or community centres to discuss about applying learning achievements and experience? (plural answers accepted）
Q11	Have you prepared comprehensive presentation materials to explain your learning achievements, experiences or results? (plural answers accepted）
Q12	For those who prepared presentation materials (in Q11 above), were the materials beneficial in consultations or discussions with the respective organizations?
Q13	Do you have access to information on activity platforms on which to apply your learning achievements and experiences? (plural answers accepted）
Q14	Do you know in what forms would participations and activities of citizens in the following organizations be accepted? (plural answers accepted）
Q15	What are the challenges to applying learning achievements and experiences? (plural answers accepted）

2) Timing of implementation

・First time (December 2013)

Retrieved from 25 participants out of total of 28 in briefing session of support program.

・Second time (February 2014)

Retrieved from 14 participants out of total of 15 in briefing session of support program

5. Results

A total of 15 citizens continued to participate in the support program after going through the briefing and orientation, and out of which 14 went on to present their activity plans. 7 went on to further develop their activities, 3 began new activities at community centres, learning centres and schools, and 3 are considering activities with related organizations.

Furthermore, the participants of the current activities research were gathered from citizens who were conscious of putting their learning achievement to practical use, right from the stage of calling for participants, and subsequent analysis and considerations were based on those.

(1)　Questionnaire surveys comparing before and after support program

A comparison survey was done before and after participants took part in the support program, and the results were as follows. The survey and analysis was performed on 15 members who participated in the support program, out of all who took part in the briefing.

1) The ratio of those who felt strongly about applying their learning achievements increased significantly from 35.7% at start of participation of support program, to 64.3% upon completion.

2) Before participation in the support program, only 18.7% prepared materials which comprehensively described their experiences and achievements, but everyone prepared materials during the process of the support program.

3) Prior to participation in the support program, 57.1% did not involve in any form of inquiry or seeking of consultation at the Kenmin College or regional community centres for the purpose of applying learning achievements. During the period of participation, the participants became proactive and everyone engaged in active consultation and inquiry. In the process, 88.9% derived some form of benefits from materials compiled during the support program, as compared to only 14.2% before the program. This implied the inadequacy of preparation and action before the program.

4) Regarding information on what one has learnt or where activities have been applied from experience, almost all benefited from attaining some form of information through participation in the support program. Prior to participation, 33.3% did not attain any form of information at all, exposing the lack of proactivity in inquiry and seeking of consultation at support organizations.

5) A comparison of the consciousness levels of challenges involving applying learning achievements was shown in figure 1. At the time of participation, many replied that they did not know if they were capable of capitalizing on their learning achievements, or that the goal was not concrete and remained stagnated in the phase of wishfulness. Many also expressed interest to be initiated to opportunities of activities. All these reduced drastically after participation. On top of that, challenges of not having reviewed own knowledge, experience, know-how, and power of execution, which were brought up by many at the time of participation, did not surface at completion because the support program process involved everyone's participation. From these, it could be inferred that review of experiences and learning history and the subsequent process of documenting concrete execution plan cleared up vague anxieties and lead to the concretization of opportunities of activities.
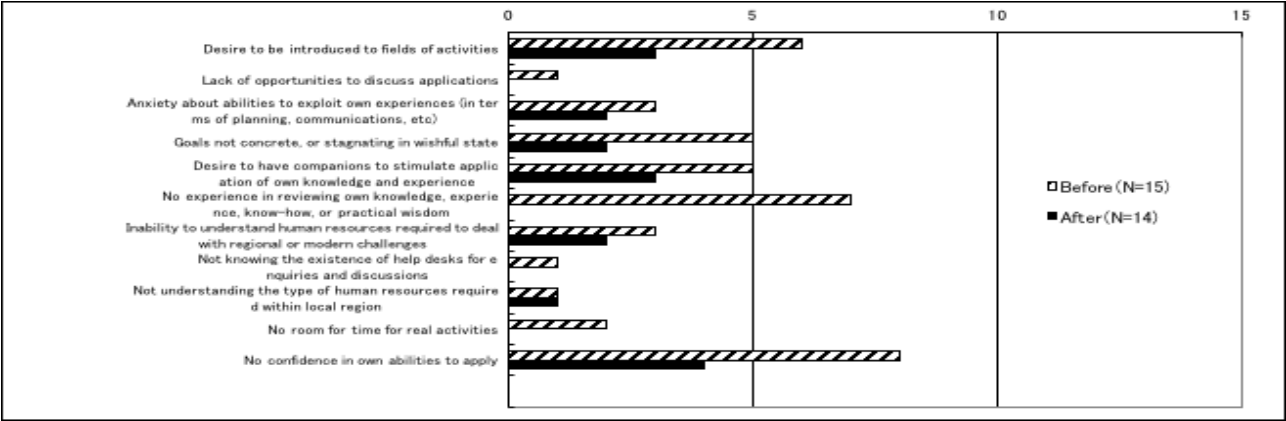

Figure 1   Challenges pertaining to activities of applying learning achievements – before and after participation in support programs (plural answers, unit: in number of persons)

(2) Effects gained from participation in support programs

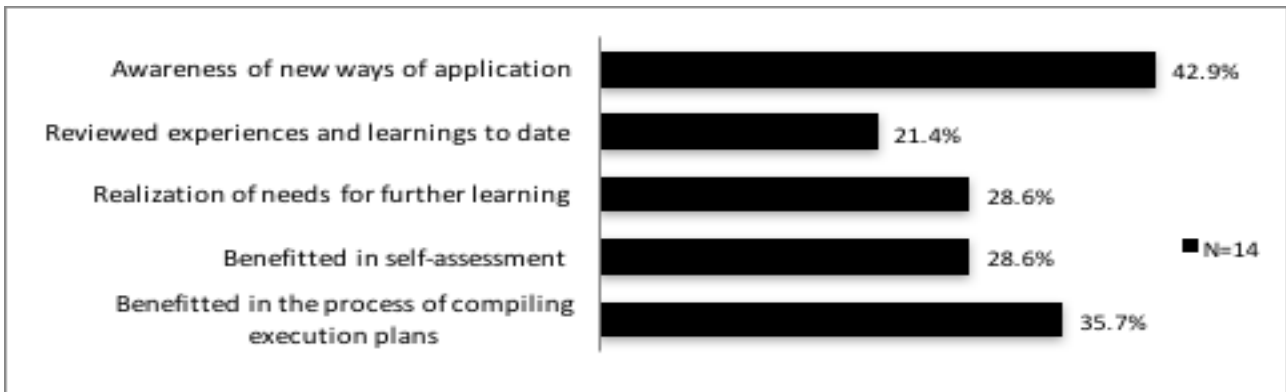

Figure 2　Benefits derived from participation in support programs（in percentage, plural answers）

Upon completion of support programs, a posterior questionnaire survey was performed on program participants. Questions in the survey included "What effects were gained from participation in support programs?", in addition to other questions listed in table 3. Majority of answers included "Awareness of new ways of application (42.9%)", "Benefitted in the process of compiling execution plan (35.7%)" (Figure 2). In the following analysis, we focused on the answer of "Awareness of new ways of application", which was arrived at by nearly half of all participants.

Based on the information gathered from the process of support programs and the results, we performed assessment of the support programs and the challenges pertaining to citizens applying their learning achievements.

6. Analysis of challenges faced by citizens through execution of mentoring activities

Figure 3　Challenges pertaining to mentoring and number of instances pointed out

Comparing participants before and after attending support programs, it was evident that mentoring enhanced consciousness of applying of learning achievements and concretize activities, hence deriving beneficial effects of overall supporting programs. From the goal of the current research, it was important to focus analysis on participants' challenges, which were made visible in the process. The challenges facing participants were compiled based on the mentoring records during the period of the support programs. Records were documentation of discussions with participants via face-to-face interviews, telephone conversations, and e-mails, as well as reviewing

records of documentations of execution plans. From these records, the challenges faced by participants were segmented into 6 categories, and the number of occurrence per challenge shown in figure 3. From the mentoring records and results of questionnaire surveys, we compiled the typical challenges faced by the participants as follows.

(1) Lack of confidence in ability to apply learning achievements

One of the main worries include the lack of confidence in one's ability to apply learning achievements. This reflected the lack of understanding of either level of attainment of learning achievements, or the level expected from the ground of application.

(2) Goals being too lofty, general, wishful, and lack of independent objectivity.

Among participants, while there were some who had clear goals and themes from the start, there were also many who encountered challenges with objectivity of goals, or that of their own roles. With anxiety towards social situation in the background, many goals presented were seen to lack independent objectivity, and feasibility of goals were not reviewed. Furthermore, upon review of own experiences and competencies, many did not seem to understand themselves sufficiently. On the other hand, there were also those who were groping for foreseeable goals but did made any progress at all.

(3) Intention to apply learning achievements to region in a one-sided manner

In many cases, goals were seen to lack consideration into relationship between the self and society or others in general. Included in the themes presented were regional history, people, organization, as well as related facilities. There were many cases where activities were proposed without fully understanding the surrounding situation. These arose from the lack of awareness of the need to build relationships with the regional population.

The knowledge and understanding of the region as well as related facilities to which activities are targeted cannot be adequately obtained merely from information materials or explanation from mentors. One existing challenge is the lack of actual activities to contact and communicate with staffs of related facilities and the regional public. Through information obtained via such real contacts, concrete consideration of whether self-knowledge or experience sufficed for the goal presented was possible in some cases.

(4) Disorganized information on histories of learning and activities

A frequently encountered problem was that of disorganization and lack of information on histories of learning and activities, which resulted in the challenges pertaining to self-understanding, concretization of activity goals, and consideration of activity methods. Some made use of open blogs and profiles to keep track of histories of learning or experience, but many relied solely on memory. Information existed in a variety of forms and were scattered, and it was difficult to organize them into themes and time series to have an overview on knowledge, skillsets, and know-how. Although many saved text and hardcopies of certificates of graduation

and licenses as learning histories, many did not have a clear opinion of their relation with the knowledge acquired from learning, or a clear awareness of the problem, or any remaining records of relationships of such knowledge with the external world. If such records existed, a reassessment would give rise to the possibility of reconstruction and application of the knowledge. The lack of such source information arose from the challenges on self-understanding and goal setting on the part of the individual.

7. Assessment of support program based on challenges faced by citizens

We considered the challenges and effects of the support programs by reviewing the individual challenges faced by citizens wishing to apply their learning achievements.

(1)　Supporting review of histories of learning and activity

Active listening of story-telling of individuals describing their experiences and learning histories promotes recognition of gaining experiences of important knowledge as well as mindset changes, bringing benefits of self-assessment. Supporting the verbalization of learning achievements leads to re-interpretation of practical wisdom contained in participants' description into formal knowledge and competencies, and realization of new values. Many retired participants with a wealth of career experiences possessed practical wisdom at professional level. There were examples where these practical wisdoms fostered from long years of career being applicable to diversified fields, and leading to actual applications. Verbalization support via mentoring played a significant role here.

(2)　Supporting formation of motivation

This step presumed the self-understanding of learning achievements which contained the above practical wisdom. With the diversification of social challenges, the key to creating diverse values lie in the relationship between own learning achievements and others as well as the society, for example, with citizens assuming entrepreneurship of providing new regional services at their own intentions.

While the themes and fields of learning achievements include a depth dimension, the opportunities of application have a corresponding breadth dimension in terms of diversification of regions and society. It becomes clear that the motivation of applying learning achievements is affected by the ability to provide information on the breadth dimension. Furthermore, there is concern with the mismatch which arises with the combination of both the depth and the breadth dimensions. Mentoring provides not only information on human resource needs in regional community centres and schools, which corresponds to the breadth dimension, but is also effective in providing information regarding the approach of the basic system and management. In these cases, mentors do not merely provide information, but also help to establish contacts with destinations of visits, introduce the purpose, and encourage the visit, promoting motivation of the initiatives. Visits to the targeted facilities have significant bearings on the initiatives. These are important even in improving situations where learning achievements of individuals do not

correspond with the needs of the region or the society.

Those who replied that they lacked confidence in their ability to apply learning achievements carried not only vague anxieties, but also lacked actual information which enabled them to compare accomplishment levels of their learning achievement with the level expected by the situations to which they intended to apply. For the case of the former, it would be plausible to provide a measurement criterion for self-assessment, but there existed many difficulties regarding how to obtain the necessary type of measurement criterion for practical wisdom. This time, apart from providing information on qualifications, anything practical was almost impossible. It has been reported [9] that in Europe and the USA, the system of recognizing learning achievements attained at universities as professional workplace-specific learning achievement is currently in place. We would like to focus on the standards and concepts corresponding to the measurement criterions for practical wisdom, which were developed therein. It would be possible to apply to the development of the specific assessment to answer to the question of ability of applying learning achievements.

Beyond the question of ability to apply or not, it is hoped that each individual successfully finds his own learning achievements. In the mentoring process, based on participants' records on ePortfolio, positioning one's current level of accomplishment against the future goal brings to life the motivation of aiming for new learnings, and application of learning achievement.

Although substantial sacrifices may be required initially during the formation of motivation, this step plays an important role as support program for applying learning achievements.

(3) Supporting goal setting

As previously mentioned, various scenarios arose in the process of goal setting, and there were worries that mentoring might disrupt the independent objectivity of those receiving consultation. This time, however, mentoring promoted the accumulation of small experiences, which lead to comparatively good results. There were also examples of goals being reached as a result of achieving connectivity with people through participation in regional volunteer activities for the first time.

Among participants of the current support programs, many whose goals were to become citizen lecturers achieved good results. By assuming a role where one had to teach promoted consciousness of regional needs aligned with one's own experience, and brought about the positive effects the of self-assessment functionality.

(4) Supporting creation of execution plan

This step happened to be the weak point of many participants, where many challenges surfaced when contemplating methods of activities. It was related to inadequate comprehension or knowledge regarding the region and related organizations as targets of activities. By gathering company from target regions and from the viewpoint of co-operative activities, there were cases requiring flexible consideration where one assumed a supporting role to related facilities instead of occupying a front role. There were also many participants who were weak at documentation

of execution plans. Application of information, which has been reassessed through learning achievements and contemplation, is only possible via visualization. Support of documentation is time consuming but nevertheless plays an important role.

(5) Practical application of ePortfolio

The ePortfolio used in the current research was targeted to be used and applied as lifelong learning career sheet. This career sheet will be used to record not only existing accomplishments and abilities, but also the execution plans for their future applications. The career sheet can be expected to provide visibility effects on human resources recognized via third-party institutions as regional human resource. On top of that, there are many possibilities for the process of creation of career sheet. While the former being application seen from the perspective of social assessment, the processes of introspection and re-assessment of experience can be seen as an internal application in the form of self-orientation. Yamakawa [1996, 2002] pointed out that applying self-orientation in ePortfolio was beneficial to bringing about sustainable experience learning [10], [11]. In this way, ePortfolio becomes an important information tool in terms of mentoring, for searching of internal learning and the social context of applying learning achievements to practical use.

In this research, many challenges faced by citizens applying their learning achievements became visible. As described in the previous sections, the support program following the challenges and processes played an important role. However, the most common benefit of support program brought up by participants was "Awareness of new ways of application" (figure 2). This had important implications on "diversified values seen from the third party or society". In other words, these might lead to the promotion of the realization of newly added values on top of those originally considered by citizens while applying their learning achievements.

Today, the promotion of putting learning achievements to practical use brings about the actualization of diversified human resources. In this context, this support program possesses enormous possibilities if it could enable citizens to realize by themselves the new added values of their diversified experiences and knowledge, based on the challenges faced in the process.

8. Future plans

It is necessary to continue to validate and improve on the support program from the assessment and challenges derived from the current research. Furthermore, there is also a need to initiate investigations into challenges focused on applying learning achievements from the supporting perspective. Based on the findings, we will attempt to systemize processes to apply support programs at consultation rooms stationed within lifelong learning centres and community centres, which are common contact spots for many learners. On top of these, we aim to develop curriculum to groom talents to act as support in the capacity of mentorship.

The contemplation of the processes of putting learning achievements to practical use brings about new opportunities that give rise to citizens' self-development as consciousness of new

initiatives. Here, ePortfolio can be expected to fulfill the role of support tool for self-development. The PDP (Personal Development Program) which is widely used in the UK makes use of ePortfolio [12]. Starting from these applications, we hope to extend and build systems capable of ubiquitously supporting self-development and application of achievements at universities or lifelong support centres for citizens in our country.