

Chapter 6

Production of IPE Modules and Application of Modules Tailored to Actual Conditions in Regions

In this chapter we review the standardization of modules for substituting the actual fields and eligible persons handled in group practice with IPE module units produced based on real cases (hereinafter “modules”), looking at aspects such as their composition, production, and use, and we also present the enhancement and application of modules tailored to actual conditions in regions.

1. Module composition

According to H. Barr and H. Takahashi et al., modules are comprised of case descriptions and scenario-based study materials, etc., and these can be divided into scenario-like elements, the study materials themselves, and guiding elements. Table 6-1 shows the relationships between the content comprising the modules and the elements.

Table 6-1. Items comprising the modules

Items comprising the modules Alternative names are given inside the brackets	Explanation	Element category
Case description (Case format)	A document which describes the eligible persons and conditions, etc. of the virtual cases using a prescribed form. It is the basic information for the module.	Scenario element
Scenario (Storyboards)	A document based on the case description which describes the development of the case chronologically or in accordance with the setting of the conditions in the case description. Often the storyboard format is used to create a design drawing for the production of the scenario-based study materials.	
Scenario study materials (Module study materials)	Digital study materials for case-based learning that are expressed and composed with many kinds of media, including text, figures (illustrations, photographs), video, and audio, based on the scenario.	Study materials element
Basic literature (Literature library)	A list of the basic literature or documents necessary for understanding the cases.	
Facilitator guide	A guide describing the facilitation skills needed when implementing group practice (group work, group discussions, etc.), common to all cases.	Guidance element
Mentor notebook (Tutor’s guide)	A guidebook for the implementation of cooperative education which describes the teaching plans, class development methods, teaching methods, etc. for the cases.	

Learning items table (Learning matrix)	A reference chart listing the teaching content, evaluation indicators, etc. for each occupation (specialized field). Effective teaching methods can be developed by supplementing the mentor notebook.
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2. Case description

The origin of module standardization is that even if the people who devise the cases and the cases content are different, description of virtual cases using a case description in the prescribed form is important for making the information items that must be described common to all cases. Table 6-2 shows an example of a case description.

Table 6-2. Example of how to fill out a case description

Theme	Prevention and treatment of bone fractures and living support for elderly people									
Key words	Elderly person, bone fracture, living support									
Target area	Elderly people and living model									
Target model	Elderly person with osteoporosis									
Name (A, B, etc.)	Mrs. A	Age	82 years old	Height (m)	1.48	Weight (kg)	37.0	BMI	16.9	
Municipality of residence	City S									
Main complaint	Left femur joint pain, and abdominal discomfort and stomach pain due to constipation									
Diagnosis	Left femoral neck fracture, osteoporosis, atrial fibrillation									
Name of disability	Loss of muscle strength, gait abnormality									
Patient's experience of the illness	Her bones became brittle and she suffered a bone fracture. In her treatment, the bone fracture was repaired through surgery, and then her bones and muscles were made stronger through exercise therapy (rehabilitation) and medication.									
Early developmental history and educational history	No information available									
Occupational history	None									
Family composition and cohabitants, etc.	Living with her elderly husband (88 years old) in a two-person household									
History of present illness and complications	The patient fell over in her home, and she began to have difficulty walking because of the left femur joint pain, so she received treatment at the emergency outpatient department of the hospital. She was diagnosed with a left femoral neck fracture and was admitted to the orthopedic department of the hospital the same day. (It was her first bone fracture.) She had been attending an internal medicine department of a nearby hospital for about ten years for her atrial fibrillation. Currently her symptoms are stable.									
Details of medical treatment	Osteosynthesis was performed for the bone fracture. Rehabilitation was commenced on the third day after the surgery, and in PT the patient underwent range-of-motion exercises, muscle-strengthening exercises, and walking exercises. From the tenth day after the surgery osteoporosis medications were commenced. Details of prescription) Magnesium oxide (0.5) /1XA, Inderal (10) 3T/3X, Bufferin (81) 1T/1XM, Benet (17.5) 1T/1X when getting up, once a week									
Economic problems of the patient's family	Receives old age welfare pension, 2,791,220 yen annually									
Needs of the patient herself and her family	The patient herself and her husband want to live in their home, just the two of them. Their daughter (49 years old) lives in a different place and it is difficult for her to provide long-term care because she is working.									
Needs of the patient herself	She wants to return to her home									

Needs of her family	The daughter living in a different place wants them to live in a facility because she is working during the day. The husband would like to live at home, just the two of them, if possible.
Long-term carer	If the patient returned home, it would be difficult for her husband to have the role of the long-term carer because of his advanced age. If the patient was discharged to the daughter's house, perhaps the daughter and her husband could provide long-term care?
Is there a long-term carer?	See above
Problem areas related to the long-term care	An elderly husband and a daughter with work. The husband is largely independent within the household but he has mild senile dementia (Degree of autonomy in daily life: IIa) (long-term care need: 1). Furthermore, he has hypertension.
The psychiatric and psychological problems of the patient herself	(Alcohol dependence, depression, etc.) She tends to be slightly depressed psychologically
Rehabilitation evaluation	(ROM, FIM, etc.) ROM: curvature with 90° extension and - 5° backward curvature of both hip joints, Barthel Index: 80 points (points subtracted for walking, getting into the bath, etc.)
Body functions and structures	Loss of muscle strength, easily broken bones
Activities	Gait abnormality (level requiring surveillance when walking indoors), ADL disability (walking and getting into the bath, etc. are difficult)
Participation	Returning to the household (living with her elderly husband, just the two of them) is difficult
Status of use of welfare systems	Currently applying for long-term care insurance (degree of need for long-term care is long-term care need level 2)
Home modification and long-term care equipment	The corridors in the home are wide but the home has a farmhouse-style design with a lot of steps. The toilet is western-style. The living room of the patient herself and her husband is on the first floor. (We plan to use photographs in the study materials.) If the patient is going to live at home, consider installation, etc. of walking aids, a shower chair, handrails, etc.
Characteristics of the region	(Mountain village, city, sparsely populated region, etc.) Shopping is difficult because the patient lives in a mountain village and sparsely populated region. Her relationships with the neighboring residents are good but it is a region with mostly elderly people. There is a doctor in private practice nearby. The home nursing station, day care, and day services facilities are about 15 minutes away by car. There are paved roads around the house but the roads are hilly. There are no sidewalks. There is not much car traffic. It is a five-minute walk to the field. There are about 80 people on the waiting list for the long-term care insurance facilities (intensive care home for the elderly), so it would be difficult to enter the facility immediately.
Lifestyle habits before hospitalization	1) Dietary habits The patient ate meals three times a day, mainly eating vegetables and eating fish once a day, and she was not in the habit of eating dairy products. She was doing all of the meal preparation herself. 2) Other habits One bowel movement per day. No difficulty in urinating. She was taking a bath every day at home. She was doing all of the housework including laundry, cleaning, etc. herself and not relying on her husband to do it at all. She went shopping once a week, often going in her daughter's car. She had no hobbies in particular. She liked growing flowers in her garden. 3) How the patient spent the day During the day she worked in the field for one or two hours and otherwise drank tea with the neighboring residents or watched television.
How her time is spent in the hospital	1) How her time is spent in the hospital Other than the rehabilitation, she often watches television all day. 2) Compliance While hospitalized she takes her internal medication correctly according to the prescription, but at home she sometimes forgot to take it.
Special remarks	None

3. Process of creating study materials

1) Creation of scenarios

The information items handled in the case description are composed of basic items for expressing or analogizing the patient and/or his/her life and environment, and they can be classified as in Table 6-3. Furthermore, scenarios can be created by linking together items taking into account the chronological flow, in accordance with the classifications of the item groups shown in the table.

Table 6-3. Classification of the items in the case description

Classification of item groups	Specific items
Matters related to the patient him/herself	Early developmental history, educational history, work history, lifestyle, vital signs, experience of the illness, main complaint, etc
Matters related to the patient's family and region	Family composition, cohabitants, family business, climate and characteristics of the region in which the patient resides, etc.
Health history, history of present illness, complications	The history of illness, etc. of the patient from the past to the present
Diagnosis and name of disability	The diagnosis and name of the disability that has been detected
Details of medical treatment and medication	Details of treatment and administration of medications, progress of rehabilitation, etc.
Rehabilitation evaluation	Rehabilitation
Evaluation of vital functions	Evaluation of mental and physical functions, activities, and participation
Food and nutrition	Specific status of nutritional intake
Psychiatric and psychological problems	Psychiatric and psychological issues faced by the patient
Economic problems	Economic issues faced by the patient and his/her family
Use of systems and equipment, and the home	Use of various systems, services, and equipment; problems with the home and home modification, etc.
Needs	Feelings and wishes of the patient and his/her family

Sometimes not all of the content of the items entered in the case description is reflected in the scenario. For example, of the entered items, the direct illness name, the name of the disability, the specific welfare systems and the scope of their use (upper limit to the amount of long-term care insurance by stage, etc.), etc. are delegated to the group survey activities of the attending students, so in some cases at the time of creation of the scenario the educational considerations are taken into account and the scenario is devised so that the aforementioned items will not be presented to the attending students.

Storyboarding is necessary in order to confirm, at the scenario stage, with the

people who devise the cases (the draft case-based study materials) about the text information for the explanation of the content and in addition about the specific image of the settings for the specialized conditions and scenes in the healthcare and welfare field. Figure 6-1 shows an example of a storyboard.

2) Scenario-based study materials and the basic literature

Scenario-based study materials can be expressed and composed with many kinds of media including text, figures, still images, video, and audio, but one simple production method is to make them into slide. This approach involves using presentation software (Microsoft PowerPoint®) to make study materials based on the storyboard by using slides that combine text information for the explanation of the content and illustrations. When necessary, use voice synthesis software to add narration audio that reads out the text information. Figure 6-2 shows an example of scenario-based study materials.

As discussed below, in order to use scenario-based study materials in remote locations, add software (add-ons) to the presentation software to produce the study materials. Furthermore, with this additional software it is possible to include handouts of the basic literature and the slides as an attached file with the slide-based study materials.

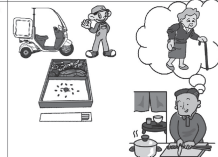



No.	画面	キャプション・字幕等
9		栄養面の状況 週2回配食サービスを受けている。他は病がまとめて数項を作り、保存している。特に栄養面で指摘されたことはない。
10		経済的問題 障害年金年金額 146 万円支給。通帳、印鑑は弟が管理し必要経費を支払っている。別に必要に応じて（月 1 万円以内）で弟からもらう。
11		本人のニーズ 身体部の痛みがなく、手足の動きがもっと楽になると良いと願っている。 施設に入ることについては、自由がきかないから入りたくないと思っている。
12		家族のニーズ 家族（弟、妹夫婦）は、施設入所を望んでいる。



Figure 6-1. Example of a storyboard  
Figure 6-2. Example of scenario-based study materials (made into slides)

### 3) Inspection Process in the Production of Study Materials using ICT

In the production of the storyboard and the slide-based study materials, the people who devise the cases, specialists in other occupations and the study materials producers are each in remote locations and use social networking services (SNSs) based on Information and Communication Technology (ICT) to implement work of inspections, revisions, etc. through remote collaboration.

This means that unlike in conventional development of study materials which is subject to physical constraints, due to the borderless environment in remote collaboration we can, for example, construct an environment for the development of study materials and research into study materials which, can be expected to result in qualitative improvements and offers specialist skills and diversity among multiple remote locations.

### 4. Guidance elements (facilitator guide, mentor notebook, learning items table)

Cooperative education in Japan has new and high-level content, and has aspects that cannot be handled using conventional pedagogical methods such as practices in a group of multiprofessional students. In particular there is sufficient reason to think that facilitation in group practice is a skill that the teachers need to newly master. In this way, it is recognized that in order to implement cooperative education including the teaching plans and other class content, their development, and teaching methods, the development of the guidance elements together with the development of the case-based study materials is extremely important.

For this reason, the facilitation skills are provided as facilitator guidelines, the teaching plan drafts and development drafts, etc. for each of the case-based study materials are provided as an mentor notebook, the learning items table is developed, and the content is enhanced every year while also maintaining the consistency of the guidance elements. Actual cases are presented in Chapter 7.

### 5. Conversion of the modules into units (integration strategy)

Constructing an environment in which the individually produced case descriptions, scenario-based study materials, and guidance elements can be used while maintaining and managing their mutual relationships in each case is essential for the implementation of cooperative education that uses modules. On the other hand, in the implementation of cooperative education through collaboration among remote locations, sharing of information about the cases and the sharing of teaching plans among mentors, etc. is also important.

In other words, a use environment in the study materials and the guidance are always a set relationship is necessary. For this reason, in CIPES-21 we have prepared combinations packaged with the scenario-based study materials for each user as follows.

1) Modules for the attending students: the scenario-based study materials and

the basic literature

2) Modules for the mentors: the scenario-based study materials and the guidance elements

Note that it is possible to include basic literature and guidance elements in the scenario-based study materials with the introduction of additional software to the presentation software as discussed above. Creation of units from the modules will be achieved by doing this. Figure 6-3 shows an example of scenario-based study materials made into a unit for mentors. (The area inside the broken line shows the guidance elements attached to the scenario-based study materials.)

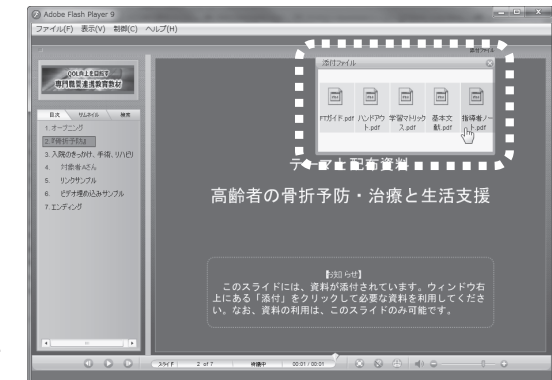


Figure 6-3. Example of scenario-based study materials made into a unit

### 6. Distribution of the modules

In order to use the scenario-based study materials with the Internet in remote locations through on-demand distribution, a distribution system such as a learning management system (LMS) or content management system (CMS) with on-demand distribution functions for scenario-based study materials is necessary as the infrastructure (the base system).

Furthermore, it is necessary for the scenario-based study materials distributed in the distribution system to be in compliance with Sharable Content Object Reference Model (SCORM), the standards and specifications that assure mutual operation. For this reason in CIPES-21 we have introduced and are operating the SCORM-compliant learning management system (LMS) presented in Chapter 9, and when producing the scenario-based study materials we use additional software with the presentation software to ensure compliance with SCORM so that the materials can be distributed with the learning management system.

### 7. Standardization of modules, and issues

In this way, for the standardization of modules a certain degree of standardization of the descriptions at the cases devising stage can be realized as routine procedures or work sequences using prescribed forms, but on the other hand, the thoughts and expression of the people who devise the cases are diverse, there are differences in the level and volume of the description content, and the amount of detail described also differs. These facts give the impression that they hinder standardization, but the appeal, creativity, uniqueness, and characteristics possessed by the cases are manifested when they are made into study mate-



rials, so uniformity at the content level or qualitative standardization faces difficulties in a good sense.

Measures for absorbing the level of the description content and amount of detail described in the creation of study materials that are more specialized or have more a detailed case description can be handled in small steps (segmentalization and simplification to encourage understanding) using the approach from instructional design. The method of slicing (continuously fragmenting) this condition that is continuous in this sense, in order to make slides in which expression is possible is thought to be effective in small steps.

In addition to standardization for production, it is also necessary to consider standardization for the use of the modules. This is standardization of use with a general network infrastructure and general interface. Furthermore, as noted above it is necessary to distribute packages of the study materials and guidance elements made into units, and so through the Internet with the computer's web browser as the interface, we are realizing the distribution of units of modules so that they can be used generally, and CIPES-21 is realizing standardization for use.

These points can be summarized as follows.

- 1) Standardization of scenario elements through descriptions entered in the prescribed forms that were made common to all of the case-based study materials in the devising stage
- 2) Standardization through development and integration of both study material elements and guidance elements for cooperative education
- 3) Standardization of use through distribution of modules through the network

## 8. Advantages of the utilization of the modules in IPE

The objectives of learning through collaboration and cooperation are to meet with the patients face-to-face, know how to understand real information such as their diseases, symptoms, life, and thoughts about their struggle against disease, and master the basic skills as a team member of adopting a patient-centered approach and mutually understanding attitude, etc.

In IPE the presentation of cases occupies an extremely important role. Types of cases include real cases, cases using video, paper-based cases, and modules. Practices carried out face-to-face for real cases have the advantage that a sense of reality is strongly transmitted, but there are many problems that need to be solved, including the personal information management and the problem of the reproducibility of symptoms. However, modules created for use in IPE overcome the problem areas of real cases, so session plans in a variety of formats can be established easily anytime and anywhere.

Advantages of the use of the modules in IPE:

- 1) The modules can be continuously improved while maintaining the quality of

the issues above a certain level.

Unlike in real cases, the patient's condition never improves the following year. Furthermore, modification of the detailed settings is possible.

- 2) The amount of patient's information can be controlled and the complexity can be adjusted.

It is possible to not provide the details as long as no question about it is received, to set certain conditions in advance so that the content of the modules does not become too complex.

- 3) The issues can be approached even from home, so there are few time constraints.

Prior learning is possible, so the modules can also be used as prior exercises for practices in a face-to-face format. Moreover, use of the blended type format or the web format is possible.

- 4) The modules can be utilized by students in all academic years and academic disciplines.

The suitable specialist skills (academic disciplines of the students) for the content of the modules can be designated in advance. Furthermore, modification of the level of the modules based on the courses for academic years is possible.

- 5) \*The students, teachers, and other participants can carry out reviews together.
- 6) \*Effective facilitation and feedback based on the students, the conditions, etc. is possible.
- 7) \*Teachers can clearly say the things that are educationally necessary right on the spot.

\* These advantages are thought to be advantages in common with IPE practices in the face-to-face format in regions.

On the other hand, there are concerns that modules based on virtual case scenarios only (excluding the case in which the modules are used together with the face-to-face format) have the following disadvantages.

Disadvantages of the use of the modules in IPE:

- 1) The student do not directly interview the case, so perhaps communication skills are not developed?

However, opportunities to master skills such as communication and medical interviews are not limited to IPE practices only. There are no doubt many academic disciplines in which the students have already gained experience in the clinical practice, and in some academic disciplines the students must take the Objective Structured Clinical Examination (OSCE) before going out on the practice.

- 2). If the students get too used to virtual case scenarios, perhaps they will start to ignore the case-centered approach?

In particular, we received a comment saying that in the case that the option leading to the result that the patient dies is selected from among the *vpSim™*

nodes, initially the students will probably be shocked, but after a while they will become calm. However, the issues included in our modules does not require a single solution as in *vpSim™*; the students aim to find a solution that is as close to the ideal solution as possible, and to carefully review the support measures in the same way as the real cases.

- 3) Won't the subjects become hackneyed immediately using virtual case scenarios?

On the contrary, it is in the real cases that the patient's condition changes substantially by the next year, and there is the problem of the protection of personal information, making it difficult to handle fresh and individualistic issues constantly. Due to the flexibility discussed in 1), with virtual modules it is possible to maintain a state of renewal constantly.

- 4) Aren't the modules essentially the same as the PBL and CBL study materials?

Even if the flow of the scenario itself is the same, the scenario for the modules is narrated and developed on PowerPoint®, so students can review the subjects at one's own pace, as discussed in section 6-1. Moreover, the modules are superior to the other two approaches in that they can be presented using photographs and video as complementary study materials.

- 5) Are there modules suitable for students in all academic disciplines?

This point is a problem common to all study materials for use in IPE. Conversely, it is doubtful that clinical cases that are applicable to students in all academic disciplines exist. And is this kind of case at home realistically possible? As stated in 4), in the modules it is possible to leave the basic scenario unchanged, and to modify the additional issues in accordance with the occupations of the participating students.

The scenarios of the modules are created based on real patients. Certainly even if we suppose that the face-to-face format is the most ideal and most effective for IPE practices, the modules can incorporate all formats: the face-to-face format, the web format, and the blended type which combines both. Along with the development of image technology, modules are expected to develop further as study materials for the ubiquitous era.

### 9. Utilization of the modules in NUHW (Integrated Learning Seminars)

NUHW has been aiming for the establishment of IPE in healthcare and welfare since it was founded, and has commenced IPE that cultivates fundamental collaborative ability through learning, debates, and presentations by a mixture of students from the various academic disciplines. Case review meetings similar to the clinical and social conference are held in a simulated seminar format. The students do the prior preparation for participating in the case review meeting. They engaged in debates and discussions, formed a consensus about the goals with the other occupations. The methods of practice developed to enable provision of medical and other interventions for the users. As a result of repeated tri-

als, the style of practices in a case-centered format was established. NUHW has worked on both learning that is face-to-face with patients and learning using virtual cases utilizing their respective advantages.

In 2009, the "Co-development and Practice of modules-centered Interprofessional Education to improve Quality of Life" initiative implemented through the collaboration of five universities nationwide led by this university was adopted as a "Support program for strategic university collaborations to enhance university education" under the university reform promotion project of the Ministry of Education, Culture, Sports, Science and Technology, so the modules are being developed. The modules are expressed with illustrations and audio for each scene, including basic information about the case, functional evaluations, family background, and social problems, and all of the scenes can be re-played any number of times. Thirty cases have been registered in the on-demand lecture system to date, covering a wide range of life stages from fetuses and nursing infants to elderly people, a variety of models such as the development support type, health promotion type, and medical type, and a broad range of diseases in the motor system and central nervous system, intractable neurological diseases, psychological diseases, etc. Through utilization of the modules, we have become able to discover new possibilities in the methods of practice that are different from learning in a face-to-face format.

The "Integrated Learning Seminar" arranged in the fourth year are positioned as the culmination of the cooperative education of this university. The "Integrated Learning Seminar" established as an optional subject in 2004, the fourth year for the first group of students, have been held since 2008 as an elective subject with credit certification offering one credit for 15 hours of study in the second half of the fourth year.

The objective of the "Integrated Learning Seminar" is that the students master the basic methods and content for collaborating with other professionals to offer support to patients and users. In the seminars the students apply the specialist skills of the academic disciplines to which they themselves belong while at the same time gaining understanding of the specialist skills and directions in other academic disciplines, and having simulated experiences of team care and team medicine, beginning with evaluation and assessment and including the formulation of support plans.

In 2011 Approximately 200 students attended the seminars (including ten pharmacy faculty students from Niigata University of Pharmacy and Applied Life Sciences, three students from the Nippon Dental University, and two students from Tokyo Metropolitan University), there are 45 teachers (including other universities' teachers), and students from all academic disciplines participated. There are 21 groups, and the case-based study materials used real cases, cases using video, modules, etc. Although the case-centered practice style of progressing from the presentation of cases to collaboration to formulate support measures has not changed from the beginning, the methods and composition are

refined every fiscal year.

From planning to implementation “Integrated Learning Seminar 2011”

January 2011: The “Integrated Learning Seminar” are placed in the third week of September as an elective subject common to all of the faculties in the fiscal year 2011 annual class plans.

March: We explain the composition of the “Integrated Learning Seminar” and the importance of cooperative education, etc. and recommend to the students that they attend the seminars at the time of the new-year orientation (course guidance) for all of the faculties and each individual academic discipline

April: On-campus recruitment aimed at all of the teachers, for the purpose of recruiting the faculty who will be in charge of the cases and the faculty who will cooperate with IPE.

May: Give other universities publicity information about participation in the “Integrated Learning Seminar.”

June: Hold a briefing session for the faculty in charge of the cases, and distribute the teacher guide and the student guide. Confirm the goals to be attained and the schedule, and request preparation of the cases to be used (real cases, modules, etc.).

July: Hold a briefing session for the teaching staff at other universities who wish to participate.

Hold a facilitator training workshop for the faculty in charge of the cases and the faculty cooperating with IPE.

August: Hold a joint orientation for the students and the faculty.

Announce the faculty and student seminar members, and hold a gathering for each group. The cases are released on the remote communications system (web site NOTA) and during the period until classes commence the members introduce themselves and the faculty give instructions about prior learning here.

September: Implement the “Integrated Learning Seminar” (intensive classes over a five-day period). The methods of presenting the cases and the progression of the seminar are delegated to the faculty in charge of each case. The students gather in the classrooms allocated to each group, and lively, face-to-face debates are held whenever necessary. Even during this time, university students in remote locations can exchange information through the web site, have debates using the video conferencing system, and participate in the seminars held at this university whenever appropriate. In the afternoon of the final day a presentation meeting is held for the case supporting plan formulated by all of the participants. There is reflection of the seminar and then the seminar is completed.

Every year the number of students attending the “Integrated Learning Seminar” and the number of cooperating teachers has increased, so the seminars are gaining more recognition as IPE practices. For two years we have been working toward the standardization and utilization of modules, and exchanges with uni-

versities in remote locations utilizing the advantages of the modules are gradually being created.

The characteristics of the “Integrated Learning Seminar” putting the focus on the utilization of modules are as follows.

- 1) IPE can be planned efficiently for many students in many academic disciplines.
- 2) The cases are centered on the modules, and use real cases, cases using video, cases reported in newspapers, etc. Expand examples of use combined use, etc.
- 3) Recommend the participation of other universities. Collaboration with other universities and collaboration with students in academic disciplines which do not exist. There are the reciprocal advantages in the sense that it promotes exchanges and multiprofessional understanding that transcend individual universities.
- 4) Learning using remote communications systems, such as the presentation of modules using the Internet and debates using the video conferencing system, makes participation transcending individual universities possible.
- 5) In order to use the module study materials effectively, we are endeavoring to create and re-edit the complementary study materials such as the bachelor’s student guide, teacher guide, facilitator’s guide and glossary and to train the facilitators.

## 10. Utilization of the modules through interprofessional work (IPW)

Regarding the provision of healthcare and welfare on the ground, a team made up of professional practitioners is formed with the goal of the improvement of the QOL of patients, and regular information exchanges and case conferences are held. At these, support for actual patients is reviewed. Each case is faced with individual problems and follows its own respective course. In that sense the developed modules are doing no more than expressing one case among the cases of many patients. However, the practitioners of a professional team approach are equipped with the disciplined and refined knowledge and technical aptitude needed to constantly collaborate to solve problems no matter what kind of case it might be. The processes of team working from the planning stage to implementation and evaluation can be a model for IPE. As noted above, the modules are utilized by the students and teachers as study materials for the Integrated Learning Seminar, etc., but no currently active practitioners can be seen there. If we get the practitioners to use the modules and use the team approach to develop cases, they will be able use the cases in both IPE and IPW. The most important issue is how to get the people on the ground involved and utilize them in IPE, and it is possible to promote IPW if the practitioners utilize the modules.

One method could be to establish a simulated class for the team approach method using multiprofessional practitioners in the healthcare and welfare sub-

ject group, which is the core curriculum, with the simulated class presenting actual case conferences using the modules to the students. The simulated class would be a good opportunity for the students to learn from the abundant knowledge and proficient implementation ability of the practitioners, including case assessment methods and problem-solving methods, and the students would be able to experience the highly-realistic atmosphere on the ground. Furthermore, for the practitioners too it would be a good opportunity for daily IPW exercises and for reflection.

One more method that is effective is seminar planning in regions by a team comprised of a mixture of different types of professionals. Actually, during the two years of 2009 and 2010, a student seminar on collaboration among universities centered on this university was held with the participation of universities training a variety of healthcare and welfare professionals. The content of that seminar was the schedul shown below.

Student seminar on collaboration among universities  
First day: the lecture forming the basis of IPE is given by an invited overseas lecturer (given by the United Kingdom's Centre for the Advancement of Inter-professional Education (CAIPE) for two consecutive years)  
Ice-breaking and group work (case reviews presented by each facility)  
Second day: separate tours of facilities in Niigata Prefecture by each group (traveling and touring in a chartered bus, some use of JR (Japan Railways) trains)  
Third day: case reviews through group work (revision, etc. of the support measures after the local tours)  
Presentations of the outcomes by group, and comments by invited overseas lecturers  
Reflection  
Conferral of certificates of completion of seminar

A mixed team of people from different universities was formed and the students and teachers visited the diverse facilities and hospitals in the region, reviewed the cases provided by the facilities and hospitals, and actually toured the workplaces. Through reflection they were able to identify the value of the content they experienced, and because they were conferred certificates of completion they were able to gain a sense of satisfaction even though it was a short seminar. It was held across multiple universities, so it was possible for professionals who would not be able to collaborate in a single university to form teams, and at the single-department universities there were many students and teachers who wished to participate. Going forward, continuation of community participation type IPE would be ideal. However, issues were raised, including how to secure cooperating facilities and hospitals and the problem of the personal information of actual patients. Case reviews using the modules are effec-

tive IPE for reducing the burden of the cooperating facilities and hospitals and the patients. Before going on the worksite tours, the participants select modules with subjects close to the users of the facilities and hospitals that they are going to visit, and review them thoroughly as a group. Subsequently when visiting the facilities and hospitals they study the living environment of the patients and listen to what the practitioners have to say, and then through further debates in group work they can work out support that is more suitable and feasible for the objective of improving the QOL of the patients.

The face-to-face format has been adopted at the University of Leicester in the United Kingdom and at Saitama Prefectural University.

The group work is basically carried out in a face-to-face format, but it is important to greatly utilize the ICT environment for liaison among remote universities and communication among group members. The modules can be used at remote locations by the professionals at the cooperating facilities as well as by the students and teachers, through use of the on-demand distribution system. Furthermore, if it seems there is a large burden on the cooperating facilities, the hospitals, and us, it is possible to show the students the workplace with a live broadcast by using the video conferencing system or live lecture system, without the students actual visiting it. Utilization of modules commensurate with the expenses, etc. is also taken into consideration, so diverse patterns are likely to be feasible.

11. Utilization of the modules in other education

The standardized modules were originally created for use in cooperative education in healthcare and welfare so they can be utilized in all specialized education in the fields of healthcare and welfare. In particular, standardized modules can be used among students in a single profession to assess the information of patients, identify problems, and create care plans, because such modules are PBL (problem-based learning) study materials in specialized subject practices for which cases are often used. The team members are not from multiple professions, but during the group work each individual independently learns and gives presentations, and acquires specialized knowledge, problem-solving abilities and communicative abilities. Through the above process, specialized terminology is used unchanged in the modules for cooperative education, so full utilization of a glossary that has been made into a database is required for the specialized terminology in other occupations that is difficult to understand. Furthermore, it is necessary for the tutors to read and apply the aims of the developers of the modules they will use, the perspective of the QOL of the patients, etc. from the digital files such as the mentor notebook, case description, literature library, and learning items table.

In specialized practice wide-ranging use of the modules is possible. Learning using the modules is possible at any time before, during, and after the practice. Firstly, it is possible to use cases similar to those of actual care patients to pre-



pare assessment methods, indentify problems, and formulate care plans, etc. in advance by carrying out simulations as prior learning before visiting the locality. Even if it is not exactly the same case, this is useful in case-based learning with similar set conditions for greatly deepening the understanding of the students in actual practice so that they can learn the information associations and information organization methods.

Furthermore, opportunities for rehearsal for holding case conferences during the practice can be established using the modules. Select modules close to the patients covered by the practice in the practice group, and hold a case conference among the students. Even after the practice, the modules can be put to good use when reflecting on the care plans for the patients for which the students were responsible during the practice. In the practice there are many cases in which the initial plans formulated do not reach implementation or evaluation, or modifications have to be made to the plans, due to constraints on the practice period or changes in the condition of the patients. Re-examination of the care using the modules in order to evaluate the practical utility, validity, etc. of the plans leads to the discovery of outstanding issues as well.

Regarding the methods of using the modules at the practice site, as noted above, use of the on-demand lecture system and community-based system is ideal. If these forms of ICT are utilized then going forward utilization of the modules in the network will be expanded further, and the forums for education of students, teachers and practitioners will expand and develop while at the same time if these groups enhance their team working skills through reciprocal influence IPE and IPW can be expected to lead to a true contribution to improving the QOL of patients.