STUDY OF EDUCATIONAL METHOD BY CONSIDERING SUSTAINABLE URBAN DEVELOPMENT

Akiko Kondo¹, Satoshi Togawa²

¹Department of Media and Information Systems, Shikoku University (JAPAN)
²Education Center for Information Processing, Shikoku University (JAPAN)

Abstract

The aim of the United Nations’ Sustainable Development Goals (SDGs) is to end poverty and to protect the earth in order to realize a peaceful and affluent society for all people, and the United Nations pledges that “no one will be left behind.” In Japan, we are facing serious problems such as declining birth rate, aging population, and depopulation. In this situation, it is necessary to promote sustainable urban development in all regions. When considering urban planning, it is essential to ensure that diverse entities participate. Thus, devising a strategy for independent participation in planning and human resource development is extremely important. The aim of this study was to propose an educational method that considers sustainable urban development. In this method, learners are given an opportunity to tackle a problem by exploiting knowledge obtained through learning as well as from their background and experience. In this study, we found that learners were not aware of problem-solving methods using this framework. The learners proposed a deliberate and effective plan by reflecting these methods. They developed a deeper understanding by repeating the above process. In addition, they became a human resource base that can help to realize a sustainable society for the next generation.

Keywords: SDGs, urban planning, social learning, tourism.

1 INTRODUCTION

We are facing serious problems such as declining birth rate, an aging population, and depopulation in Japan. In addition, local municipalities are losing their vitality because of this situation and the extreme concentration of the population and industries in the Tokyo metropolitan area. Therefore, it is difficult for people to sustain their own municipalities. On the other hand, the United Nations General Assembly adopted “Transforming Our World, the 2030 Agenda for Sustainable Development,” which was included in the SDGs in 2015 [1]. The 17 Sustainable Development Goals and 169 targets were announced at that time. The aim of SDGs is to end poverty and to protect the earth in order to realize a peaceful and affluent society for all people. The goals and targets will stimulate action over 15 years and United Nations pledges that “no one will be left behind.”

It is therefore necessary to promote sustainable urban development in all regions in Japan. This is a new challenge because Japan is facing serious problems related to rapid increase in the aging population and a low birth rate that has never been experienced before all over the world. In addition, it is essential that diverse entities participate in urban planning. Thus, the development of a way to allow independent participation in planning and human resource development is extremely important.

The aim of this study was to propose an educational method that considers sustainable urban development. In this method, learners acquire knowledge that they did not have or never thought about before. The learners are given an opportunity to tackle a problem by exploiting knowledge obtained through learning and from their background and experience. The learners realize that they did not know a process of problem-solving using this framework. They can propose a deliberate and effective plan by reflecting on this process. They gain a deeper understanding by repeating the process. In addition, they become an effective human resource base that can help to realize a sustainable society for the next generation.

2 EXISTING STUDIES AND CHARACTERISTICS OF THIS STUDY

There is a relationship between urban planning, human resources, and learning. For example, Matsumura et al. [2] clarify the relationship between civil service officers’ personal networks and their basic community building abilities. A civil service officer is one of the main sources of urban planning. Taguchi [3] developed an education program for people who are involved in regional revitalization.
Japan, “local-community vitalization aids” are active in rural regions with governmental aid. Herk [4] developed a framework on how to organize a learning and action alliance. Heck’s study was conducted based on three threads, which are: establishing facts, creating images, and setting ambitions. In addition, Shaffer et al. [5] conclude that the impact of using a computer on learning is high. Therefore, we should catch up with new technology in education.

Many existing studies analyzed the relationship between urban planning and human resources. In this study, we focused on human resources, which is an extremely important resource for developing an urban plan. The study has profound significance and novelty in that it proposes an educational method that considers sustainable urban development. The educational framework is useful because it can be applied in other fields.

3 EDUCATIONAL FRAMEWORK OF SUSTAINABLE URBAN DEVELOPMENT

We propose an educational method that considers sustainable urban development. In this study, “Output” is defined as a result of a project execution, while “Outcome” refers to the consequence of, and achievements made on a project, based on the process of the project and its output. In this study, the output is a plan on sustainable urban development, while the outcome is the learners’ realization and becoming a human resource that can contribute to society.

3.1 Contents and method of education

Learners gain experience through the educational process shown in Figure 1. First, they examine and analyze the change in population and national tourism interaction in Japan. Next, they learn about urban planning. After they have examined and analyzed these concepts, they consider an urban plan for sustainable development. When they consider a plan, the “input” and “output” processes are repeated.

In this study, the learners were special students who were working adults and attended university lectures as part-time students.

3.1.1 Current state analysis

Many rural regions in Japan have been losing their vitality. This can be attributed to the falling birthrate and aging population. It is predicted that these phenomena progress rapidly in the long term. No country has never had experienced this situation before. The regional revitalization is pressing concern.

Learners learn and analyze the state of population and tourism interaction. They also consider the effects of them on socio-economic condition. Figure 2 shows change in population and proportion of elderly people aged 65, or over in total population in Japan. This is based on the data of the national census. Changes in the number of people on entry and departure from Japan is shown in Figure 3. This data is provided by Japan Ministry of Justice.

Japan society enters a period of falling birth-rate, population aging and decline. It is predicted that the Japanese population will be 47.71 million (population aging rate: 40.6%) in 2100, the number of populations is 127.84 million (population aging rate: 19.6%) in 2014 [6].
The number of people visiting Japan has increased because of the increase in the number of global overseas tourists and the yen’s low rate. In 2015, the number of people entering Japan finally exceeded the number of outbound people in the past 45 years (since 1970). This situation means that inbound tourists have a huge impact on the Japanese economy and society. In addition, learners become aware of urban planning, including the origins of a city, the law, and national spatial strategies.

As mentioned earlier, the United Nations General Assembly adopted “Transforming Our World: The 2030 Agenda for Sustainable Development,” which was included in the SDGs [1] in 2015. The 17 Sustainable Development Goals and 169 targets were announced at that time. The aim of the SDGs is to end poverty and to protect the earth in order to realize a peaceful and affluent society for all people. The goals and targets will stimulate action over 15 years and the United Nations pledges that “no one will be left behind.” Table 1 shows these goals and their contents.
3.1.2 Consideration of an urban planning

We considered a sustainable urban development plan based on the current status. The mentor presented a specific problem to the learners. The target in this study was a problem concerning a vacant house. When learners stepped forward to find a solution to this problem, they were aware of an important issue: a regional concern needs to be considered in comprehensive way. In this way, we considered a regional problem and an urban plan from a broad viewpoint.

Learners set the examination items necessary and important for the designing of a plan, as shown in Table 2. They acquired much knowledge concerning urban planning and SDGs through the program.

A strategy for urban planning needs to be different from the existing ways in these rapid growth years. This is a new challenge because Japan is facing serious problems related to rapid increase in the aging population and a low birth rate that has never been experienced before all over the world, as mentioned above.

The mentor gave the learners an opportunity to learn about urban planning, socio-economic conditions, and the concept and contents of SDGs. They acquired important awareness of a specific problem that was presented by the mentor, as shown in Figure 4.

![Figure 4. Form of educational result.](image-url)
3.1.3 A proposal of a sustainable urban development plan as a result of several discussions. The plan was summarized so that the residents could easily understand it. Figure 5 shows the sustainable urban development plan designed in this study. Figures in parentheses in the summary indicate the goal items of the SDGs as shown in Table 1.

We proposed a sustainable urban development plan as a result of several discussions. The plan was summarized so that the residents could easily understand it. Figure 5 shows the sustainable urban development plan designed in this study. Figures in parentheses in the summary indicate the goal items of the SDGs as shown in Table 1.

Figure 5. Proposed sustainable urban development plan
4 CONCLUSION

The aim of this study was to propose an educational method that considers sustainable urban development. The learners acquired knowledge that they were previously unaware of and had never thought about before. We gave them an opportunity to tackle a problem by exploiting the knowledge obtained through learning and from their background and experience. The learners realized that they were not aware of a process of problem-solving using this framework. They proposed a deliberate and effective plan by reflecting on the issues. They acquired a deeper understanding by repeating the above process. In addition, they became a human resource base that would help to realize a sustainable society for the next generation.

The learners became aware of many things related to the circumstances surrounding the region; they also planned the formulation method and contents as well as practical examples regarding the SDGs. They said that they wanted to use the SDGs as well as the planning method in their companies and their behavior in the future. The educational framework is useful because it can be applied in other fields.

ACKNOWLEDGEMENTS

This work was supported by JSPS KAKENHI Grant-in Aid for Young scientists (B) Number 17K18293. We appreciate Ishii town to provide valuable data.

REFERENCES


