

Practice of Blending Learning for the Next Generation of Agricultural Human Resource Development Using Wearable Cameras and Drones

The Kyoto College of Graduate Studies for Informatics

CHALLENGES

At The Kyoto College of Graduate Studies for Informatics (KCGI), Japan's first applied IT graduate school, and Green Collar Academy, an association for development of practical knowledge and skills in the field of agriculture, we conducted a study using IT devices on agricultural harvesting and operation techniques using the WAZA learning method. WAZA is a term used in Japanese Martial Arts and commonly means techniques used in practice with a partner. We are interpreting WAZA as a way of developing one's technique through applied practice via expert video application and commentary.

SOLUTIONS

The WAZA learning method combines on the job training video instruction with a dynamic learning environment where students can view and compare their activities with experts. For the off-the job training component, both experts and beginners discuss the working movies back in the classroom. In this way, beginners first perform their farm work using the learning materials as a guide, and then reflect on their work by seeing the recorded movies as active learning.

The process of learning development realized by this method is as follows:

1. First Stage: Learners acquire knowledge and skills by images and information extracted from the workplace.
2. Second Stage: By discussing these learning materials, learners along with instructors and experts learn the acquired knowledge and techniques.
3. Third Stage: The skills and knowledge acquired by each worker are practically applied in the actual work environment, and assimilated into their own environment by means of their own body, senses and feelings.
4. Fourth Stage: By repeating this process, the related knowledge and body skills of individual learners are integrated and developed, as well as knowledge and technology of the entire organization are shared and internalized.

IMPACT

We used the WAZA method with a variety of Agricultural products, such as strawberry, lettuce and rice. The typical time it takes an apprentice to master the agricultural cultivation techniques is 3 years or more. The WAZA method can shorten the period to one year!

OUTCOMES

Supported by the Japanese Ministry of Agriculture, Forestry, and Fisheries, the WAZA method is being used in a number of projects with the Consortium Project for G.A.P. (Good Agricultural Practice). Green Collar Academy together with KCGI have developed the WAZA method to foster human resources, who will create the next generation of agriculture, using information technology. Now, we are extending this method to other fields.