

National Jhuolan Senior High School Brought in Drones to Cultivate Talents for Popular Industries

(Courtesy of I-Chin Sung at the Division of Academic Senior High Education)



In response to the emerging technological trends, the Ministry of Education committed itself to promoting science and technology education. Particularly since the implementation of the new curriculum guidelines, each school has put a great endeavor to strengthening the integration of local resources, as well as the planning of diverse innovative courses to align learning with the current technological development. Located in an area rich in agricultural resources, the National Jhuolan Senior High School has responded to Agriculture 4.0 and launched a pesticide spraying drone technician training program in collaboration with a partner university, to motivate its students to access the field of science and technology during their independent learning time, while training them to be equipped with the ability to control and maintain drones, thereby becoming much sought-after professionals.

Affected by the aging of the rural population and the declining of birthrate, there is a severe shortage of manpower in agriculture, subsequently bringing down agricultural productivity. The National Jhuolan Senior High School decided to develop Agriculture 4.0, actively collaborating with a university, and introduced drone technology that have being widely used in emerging technology industries. With the advantages of low cost, low risk of injury and death, high mobility, great convenience, and Beyond Visual Line of Sight operations, drones have been successfully and widely used in film and television aerial photography, mapping and aerial surveys, high-voltage power line inspections, site exploration, rescue and disaster relief, pesticide spraying, as well as commercial performance, with good potential to gradually replace traditional operating methods.

The National Jhuolan Senior High School has collaborated with the National Taiwan Ocean University to offer a pesticide spraying drone technician training program during the self-directed learning time, to provide students with diverse opportunities for electives. Due to the current shortage of human resources in the drone field, personnel with practical operation and maintenance skills are often highly sought after by employers. Therefore, it is hoped that this program will help to improve production technology and alleviate local fruit farmers' burden

and risks, while reducing labor costs and providing opportunities to young people so that they will stay in their hometowns for career development.

In addition, the National Jhuolan Senior High School will further try to establish a microclimate monitoring system in the future, collect big data on regional microclimate, and develop Jhuolan's local climate forecasting system based on traditional old farmers' weather observation experiences, to help control the impact of weather on production and sales. By integrating existing manufacturing resources, production can be conducted accurately and existing resources assigned in a timely manner based on big data and computer forecasts so as to reduce costs and wastes, while optimizing the supply side.

According to the K-12 Education Administration, Ministry of Education, the collaboration between the National Jhuolan Senior High School and NTOU has guided students with the opportunities to enhance their motivation and interest in cross-field integration. In the future, it will continue to support schools to develop more diversified programs to enable students to continue to deepen their learning contents while taking into account the development of trends.