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| Keywords | Natural products chemistry, Food analysis, Science education | | |
| Technical Support Skills | <ul style="list-style-type: none"> • Chemical Analysis • Improvement of high school students' English proficiency through chemistry content and language integrated learning (CLIL) | | |

Research Contents

- 1) Analysis of the effects of preparation and processing methods in the phytochemical profile and bioactivity of coffee leaf tea from locally grown coffee plants in Okinawa

Investigations involving coffee leaves have shown that they contain compounds that are medicinally or nutritionally functional. When the leaves are made into tea, some of these nutraceuticals are transferred to the brew which people drink. As nutraceuticals are largely affected by food processing and preparation methods, an analysis of the method that can retain or increase the amount of these compounds is important to maximize the health benefits that coffee leaf tea can offer. This can help not only the consumers but also the local coffee production industry in Okinawa.



- 2) Improving Japanese students' English proficiency by combining content and language integrated learning (CLIL) and problem-based learning (PBL) in high school chemistry classes

The traditional method of teaching English in Japan which involves grammar and translation have helped many students learn English vocabulary and sentence structures. However, this method does not address the need for students to use what they have learned to actually communicate in English. Coupled with the usual classroom situation where the medium of instruction is Japanese, students have very few opportunities to improve their English communication skills. To address this issue, content and language integrated learning (CLIL) together with problem-based learning (PBL) is implemented in a high school chemistry class. CLIL is a flexible approach that uses a foreign language, such as English, to teach a content subject, such as Chemistry. This allows the students to experience learning in an environment where the medium of instruction and communication is English. Students also learn to use technical words in English as they communicate with each other to solve real-world problems.

Available Facilities and Equipment

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