

2105A

Title of Research Subject	Solving Transportation Problems and Measuring Educational Effects for High School Commuters in A Mountainous Area
Background and Objective	<p>Osaka Prefectural Toyonaka High School, Nose Branch is located in a mountainous area, but has been designated as a Super Global High School (SGH) by the Ministry of Education, Culture, Sports, Science, and Technology, and is engaged in various educational activities from a global perspective. Many students in the region are interested in going to the school. However, one of the challenges the school faces is the commuting issue, and in recent years, the number of applicants has been decreasing, and the school has fewer applicants for entrance exams than its quota, as applicants have given up on enrolling in the school due to commuting. Currently, there are several ways to commute to school, such as walking, taking a bus, or picked up and dropped off by car, but other than that, commuting by bicycle is the final means. However, commuting to school by bicycle poses several safety issues unique to mountainous areas. By providing high school students with a new means of transportation such as e-bikes, we aim to improve their problem-solving ability by supporting their learning about transportation and also developing solutions to regional issues as a whole.</p>
Expected results	<p>By conducting a survey on traffic issues and measuring the educational effects, it is expected that measures to solve traffic issues will be presented. In addition, the high school student-centered efforts will lead to increased awareness of the problems among local residents, such as the "Nose High School Supporters' Association," which will raise awareness of traffic safety and enable the development of a model that can be applied in other regions.</p> <p>○Under the engineering approach, the following issues</p>

	<p>will be investigated with high school students to see what solutions can be expected.</p> <ul style="list-style-type: none"><li>• Most of the routes to school are not equipped with street lights.</li><li>• Driving in tunnels (dangerous when passing cars in mountainous areas with many tunnels)</li><li>• Lack of road surface maintenance (uneven road surface hinders safe driving)</li><li>• Encounters with wild animals (concerns about possible accidents involving contact with deer, wild boar, etc.)</li><li>• Responding to natural disasters (In the past, schools have been closed due to landslides, snow, and icy conditions that have disrupted bus service.)</li></ul> <p>○ Measurement of Educational Effectiveness</p> <ul style="list-style-type: none"><li>• Verify and measure the educational effects of experience and learning, such as e-bike lending and awareness based on it (evaluate the transformation of "knowledge," "skills," and "values, attitudes, and awareness" before and after the project through questionnaires, etc.).</li><li>• Use an action research approach to examine the effects of Education for Sustainable Development (ESD) on the development of citizenship.</li></ul>
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