

Practice of environmental study utilizing local high-definition topographic data

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The class of “the Period of Integrated Study” in Japan is required to solve various problems that are occurring in a local area. To proceed the Integrated Study, basic learning materials regarding local environment are necessary. HDT (High-definition topographic) data derived from SfM (Structure-from-Motion) and TLS (Terrestrial Laser Scanning) can readily be acquired and used as such learning materials. This study explores the effective use of HDT data for regional study. We conducted classes in a local elementary school to lead the students to recognize the significance of local cultural heritage and physical environment around their hometown. Through the handicraft of a large three-dimensional landform model, the students became aware of the three-dimensional structure of the local landscape. Also, they discussed with professors, graduate students, and local people using the landform model they created. Through the discussion with researchers having diverse academic backgrounds and local residents living in the area for a long time, students were stimulated and deepened their learning by the contents they explore.

Keywords: Regional Study, High-definition surface data, the Period of Integrated Study, Collaboration between elementary school and university, Exploration learning