

The Characteristics of Earth System Thinking of Science Gifted Students in relation to Climate Changes

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Abstract : This study aimed to investigate the perception of earth system thinking of science gifted students in future problem solving (FPS) in relation to climate changes. In order to this study, the research problem associated with climate changes was developed through a literature review. The thirty seven science gifted students participated in lessons. The ideas in problem solving process of science gifted students were analyzed using the semantic network analysis method. The results are as follows. In the problem solving processes, science gifted students are “changes of the sunlight by water layer”, “changes of the Earth’s temperature”, “changes of the air pressure”, “change of the wind and weather” were represented in order. On other hand, regard to earth system thinking for climate changes, while science gifted students were used sub components related to atmospheres frequently, they were used sub components related to biosphere, geosphere, and hydrosphere a little. But, the analytical results of the structural relationship between the sub components related to earth system, they were recognised that biosphere, geosphere, and hydrosphere used very important in network structures. In conclusion, science gifted students were understood well that components of the earth system are influencing each other.

Keywords : Science gifted students, Future problem solving, Climate change, Earth system thinking