Class Practiced by Knowledge Constructive Jigsaw Method Including Experiments at an Elementary School for Improving Pupils' Scientific Comprehension in Housing Learning of Home Economics: Activities Connecting Fundamental Principles and Pupils' Experience Concerning Indoor Environment

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Abstract

The purpose of this study is to clarify increase of knowledge, its qualitative changes and the improvement of pupils' scientific comprehension in each process of three kinds of activities of the Knowledge Constructive Jigsaw Method including experiments by connecting fundamental principles of indoor environments and pupils' daily experiences. A class comprising 34 fifth-year pupils in a public elementary school in 2018 was selected for the study. The materials that show fundamental principles of thermal, luminous, and airflow environments were read, and the experiments of their environments were conducted with pupils' physical and visual perceptions and measurement by using tablets that show images of experimental methods' procedures through Expert Activity. The following results were obtained: (1) The accurate scientific knowledge of one kind of environment was increased by reading materials and the conduction of experiments through Expert Activity. (2) A lot of concrete knowledge of some kinds of environments and the ways of living were comprehended through Jigsaw Activity including collaborative activities. (3) Many ways of living were presented from each group in the class through Crosstalk Activity. The scientific comprehension was improved. Some multiple ways of living interrelated with several knowledge of various environments were shown from some pupils.

Key words; indoor environment, scientific comprehension, Knowledge Constructive Jigsaw Method, using ICT