

Kansei Engineering Applied to the Design of Rural Primary Education Classrooms: Design-Based Learning Case

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Abstract : The research has funding from the Government of Chile and is focused on defining the design of rural primary classroom that stimulates creativity. The relevance of the study consists of its capacity to define adequate educational spaces for the implementation of the design-based learning (DBL) methodology. This methodology promotes creativity and teamwork, generating a meaningful learning experience for students, based on the appreciation of their environment and the generation of projects that contribute positively to their communities; also, is an inquiry-based form of learning that is based on the integration of design thinking and the design process into the classroom. The main goal of the study is to define the design characteristics of rural primary school classrooms, associated with the implementation of the DBL methodology. Along with the change in learning strategies, it is necessary to change the educational spaces in which they develop. The hypothesis indicates that a change in the space and equipment of the classrooms based on the emotions of the students will motivate better learning results based on the implementation of a new methodology. In this case, the pedagogical dynamics require an important interaction between the participants, as well as an environment favorable to creativity. Methodologies from Kansei engineering are used to know the emotional variables associated with their definition. The study is done to 50 students between 6 and 10 years old (average age of seven years), 48% of men and 52% women. Virtual three-dimensional scale models and semantic differential tables are used. To define the semantic differential, self-applied surveys were carried out. Each survey consists of eight separate questions in two groups: question A to find desirable emotions; question B related to emotions. Both questions have a maximum of three alternatives to answer. Data were tabulated with IBM SPSS Statistics version 19. Terms referred to emotions are grouped into twenty concepts with a higher presence in surveys. To select the values obtained as part of the implementation of Semantic Differential, a number expected of 'chi-square test (x2)' frequency calculated for classroom space is considered lower limit. All terms over the N expected a cut point, are included to prepare tables for surveys to find a relation between emotion and space. Statistic contrast (Chi-Square) represents significance level ≥ 0 , indicator that frequencies appeared are not random. Then, the most representative terms depend on the variable under study: a) definition of textures and color of vertical surfaces is associated with emotions such as tranquility, attention, concentration, creativity; and, b) distribution of the equipment of the rooms, with emotions associated with happiness, distraction, creativity, freedom. The main findings are linked to the generation of classrooms according to diverse DBL team dynamics. Kansei engineering is the appropriate methodology to know the emotions that students want to feel in the classroom space.

Keywords : creativity, design-based learning, education spaces, emotions

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