Abstract

The purpose of this research is to develop a service-based theoretical model for managing individual knowledge as collective knowledge. It is made possible by situating the new concept of perceptual signs [Merkmal] in knowledge management research. Specifically, the concept of disaster prevention value of phase-free has been used to elucidate and verify the factors behind the success of local disaster prevention. It has contributed to the disaster prevention education in the City of Naruto, Tokushima Prefecture, where the concept of phase-free has been introduced in school education. Through this experience, the concept of perceptual signs [Merkmal] is positioned in the field of service research, which promotes value co-creation.

Japan is known as a disaster-prone country, the lessons learned from the Great East Japan Earthquake have reaffirmed the importance of school facilities as evacuation centers as well as learning centers in the community. Currently in Japan, disaster education is provided in most of the primary and secondary schools, but the decision of the education is left to each region and each school. For teachers who are not experts in disaster education, there is a wide variety of official portals, guides, supplementary readers and case studies. Numerous studies have shown a certain level of effectiveness in implementing disaster education. On the other hand, a survey of boards of education across Japan has pointed out issues in the related field, such as teachers' low knowledge and awareness of disaster prevention, lack of time for disaster education, and the mannerism of teaching subjects. Against this setting, existing research on disaster education focuses on institutional (static) disaster education based on official curricula and discusses disaster education from the perspective of the creator of the system/framework. However, few papers have addressed the issue of dynamic knowledge creation activities, such as teacher ingenuity in creating disaster education curriculum. This research therefore sheds light on the process of teachers' lesson planning and discusses the implementation of effective disaster education from the perspective of the center of disaster education.

This research investigates knowledge management to improve the quality of disaster education in Naruto City, (Phase Free Education: hereinafter referred to as PFC Education). Later, a question, has been raised, ‘Why was PFC education institutionalized in Naruto City?’ and analyzed the factors that enabled PFC education to be institutionalized through six years of research, focusing on interviews with the administration, school board, teachers, other relevant parties, and teacher training. It has discovered the existence of concepts connecting diverse teacher contexts in the PFC education ecosystem. This research refers to the concept that facilitates the sharing of people's knowledge as perceptual signs [Merkmal]. Perceptual signs are <signs> of rationality accessible to all actors and are the key to increasing resource density in practices of service exchange.

Theoretically, this research has proposed a new theoretical model (Coordination Model of Service Ecosystem) which situates perceptual signs [Merkmal] in the discussion of institutions in service research. Practically, this research has shown that knowledge management by school boards contributes to disaster management education in the community.

Keywords: Merkmal, S-D logic, service ecosystem, knowledge management, disaster education, phase-free