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主 論 文 要 旨

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主 論 文 題 名 : Design of Narrative Book Collection Combining Computational and Visualization Approach Exploring Japanese Culture Through Keio University's Pre-Modern Japanese Book Collection			
(内容の要旨) The digitization of academically valuable materials such as rare books allows global access and can enhance reading experiences in online environments. Although this potential has been already largely explored and has allowed a broader public to access those works, there is still room to fulfill the gap of proficiency and cultural differences among them. This research proposes the design framework of the Narrative Book Collection: a web-based online interactive interface that allows the audience to follow one main narrative—created and curated from a professional perspective—, and also create their own narratives from their journey throughout a provided content. This interface was conceived initially as a support material for the massive online course (MOOC) Japanese Culture Through Rare Books, on the FutureLearn platform. The goal was to create an interface for learners from a diverse variety of backgrounds to enjoy both text and non-text aspects of Japanese rare book collection introduced in the course. The collection is formed by 148 pre-modern titles published in between the 8th and the 19th centuries, owned by Keio University's library and the Institute of Oriental Classics. Narrative Book Collection combines computational and visualization approaches for learners to interactively experience narratives based on bibliographical knowledge about the collection along the course. In this thesis, I describe the design process, from the pilot research that took place at the end of 2015 until its implementation in late 2017. During this process, I verified the main principles for the implementation that originated the design framework proposed: (a) story formation—establish viewpoints on the narratives—, (b) data generation—generate and store digital data from the main content—, (c) story-driven data analysis—analyze and interpret data to facilitate			

knowledge transfer—, and (d) narrative visualization—offer multiple viewpoints and interactions with the collection. The validation analysis was based on the results of three iterations of a design-based study. The results were examined quantitatively and qualitatively on data generated from learners as well as informal discussions with scholars in bibliography.

This research contributes to the modern scholarship in both digital humanities and user-experience design. Narrative Book Collection provides distant and close reading experiences in conjunction with narratives for learners to engage with vast amounts of books and stories. That allows them to create multiple narrative pathways with an extensive range of interpretation of bibliographical information. Also, the analysis revealed that this interface stimulated exploration and facilitated better engagement with the course. In this way, Narrative Book Collection brings new possibilities to the interaction of human beings with books to a new dimension.