# A Bibliographic Search System
## with a Focus on
# the User's Knowledge Structure

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## INTRODUCTION

We develop a bibliographic search system regarding expertise as important in searching for subject information, and built two prototype systems.

We aim to improve the access to the books or journals in university libraries and manuscripts of Japanese classical literature in research institutions.

### Before

I want to know about Osaka.

User

KNOWLEDGE

INDEX   INDEX

Bibliographic Search system

Osaka — Laughing — Yoshimoto — NGK — Boke & Tsukkomi — Namba — Gliko — Kani Douraku — Kushi-katsu — Takoyaki — Eating — Okonomi-yaki — Tower of Sun — Taro Okamoto — Osaka Expo — SUITA city — OSAKA University

### After

## IDEA

We focus on the user's knowledge structure to satisfy information requests more efficiently. We do not use the natural language processing approach .

The reason is that the natural language processing is based on processing the terms in literature statistically, and does not consider users' knowledge. However, the act of bibliographic search is a process that satisfies the user's information request, and it is apparent that it has an intimate relationship with the user's knowledge structure.

## METHODOLOGY

This research proposes a bibliographic search method with a focus on the change in the user's knowledge structure.
The basic idea of this method is as follows:
It is namely an idea that change occurs to the user's knowledge structure before and after a bibliographic search and what affects the change is the information the system presents.
And the state of a successful bibliographic search is defined as the state where the user's knowledge structure and the knowledge system contained in the search results are consistent.

## PROTOTYPE SYSTEM

The first system brings the user's knowledge structure close to an expert's knowledge structure by using the knowledge system on which consensus is reached to some extent among experts.
The second system changes the user's knowledge structure according to the classification system by using the library classification for the information the system presents and projecting the set of the search results onto the classification system.
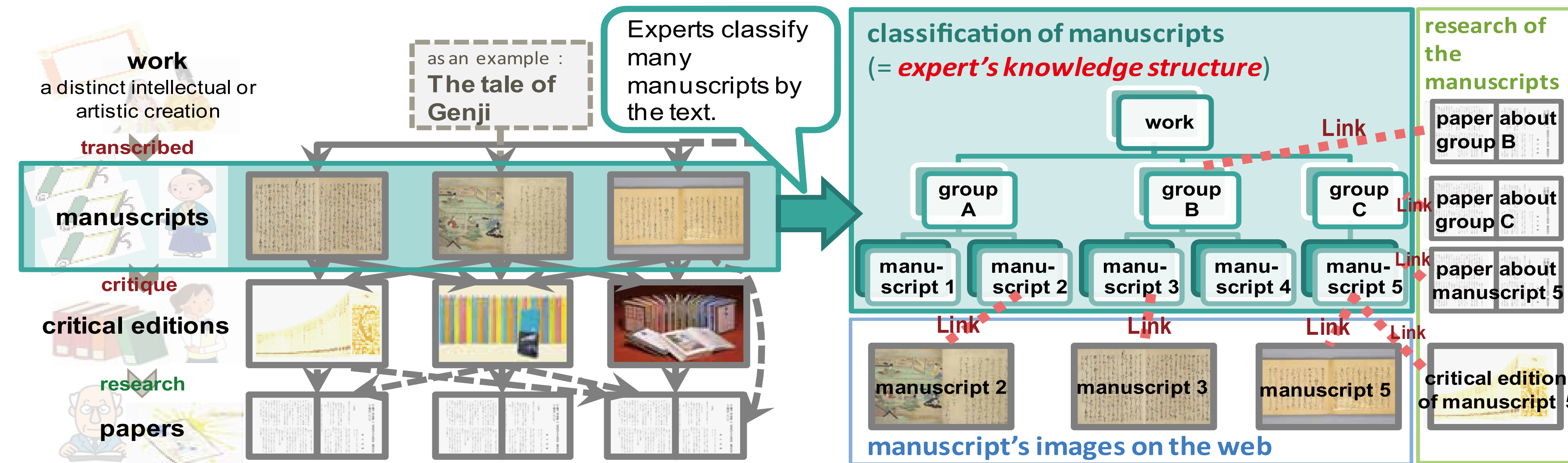
## Access to the manuscripts in research instructions

**1.** We aim to improve the access to the manuscripts of Japanese classical literature, critical editions and papers in research institutions.

**2.** We link classification of the manuscripts with the manuscript's images on the web, papers and critical editions.

work
a distinct intellectual or artistic creation
transcribed
manuscripts
critique
critical editions
research
papers

as an example :
The tale of Genji

Experts classify many manuscripts by the text.

classification of manuscripts
(= *expert's knowledge structure*)

work — group A — group B — group C — manu-script 1 — manu-script 2 — manu-script 3 — manu-script 4 — manu-script 5

research of the manuscripts
paper about group B
paper about group C
paper about manuscript 5
critical edition of manuscript 5

manuscript 2   manuscript 3   manuscript 5
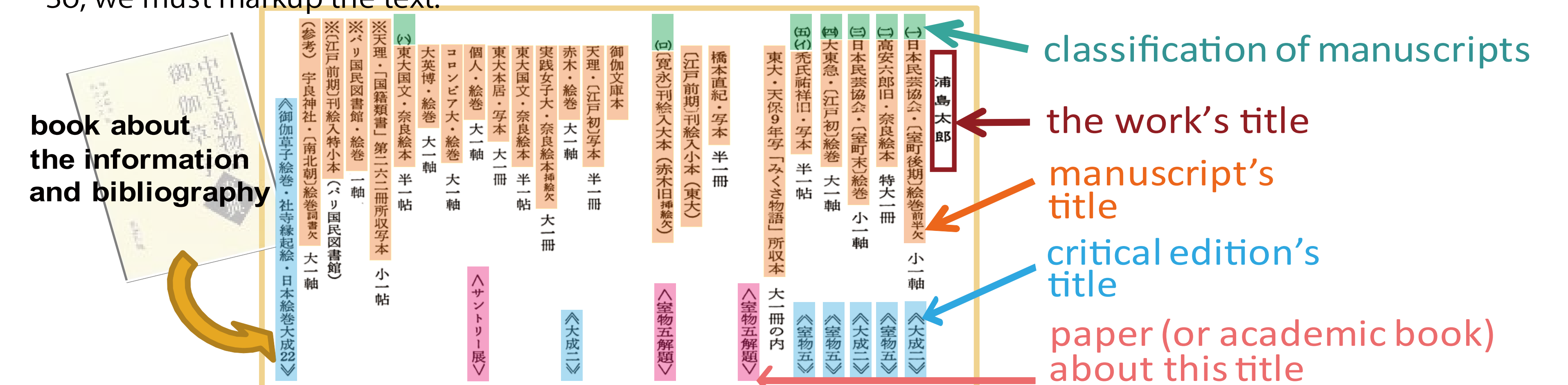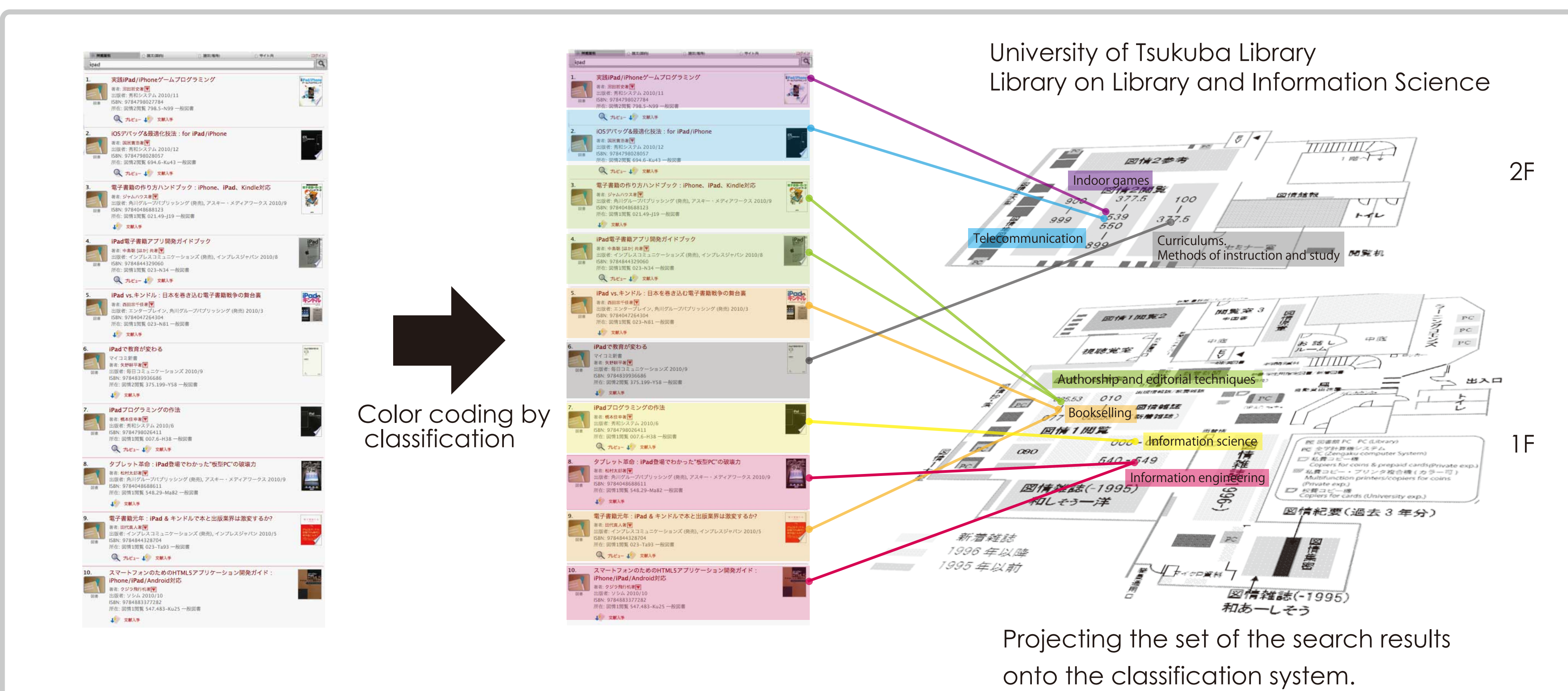manuscript's images on the web

**3.** Currently , many experts(researchers of Japanese literature)   pack information about classification of manuscripts and the bibliography  into a book.
So, we must markup the text.

book about the information and bibliography

**4.** We have just started to study the possibility of  using TEI  to mark up the bibliography .

classification of manuscripts
the work's title
manuscript's title
critical edition's title
paper (or academic book) about this title

## Access to the books or journals in university libraries

University of Tsukuba Library
Library on Library and Information Science

Indoor games
Telecommunication
Curriculums. Methods of instruction and study
Authorship and editorial techniques
Bookselling
Information science
Information engineering

2F

1F

Color coding by classification

Projecting the set of the search results onto the classification system.

### What's Tanabota?

iPad

Tanabota is a mapping system of OPAC searching results onto a libary map. The searching results appear on each shelf in the library, so you can find a group of literatures on each different subjects.

This is an example of a screen appeard as the searching result using" iPad" as a query.
By looking at the screen ,the user easily understands athat the result includes various subjects like "Bookselling" ," Information science", "Information engineering" and so on.