

CROSS-DISCIPLINARY INFORMATION RESEARCH: A CASE IN BIO-ACOUSTICS

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1. ABSTRACT – (INTERACTIVE DISCUSSION PAPER)

Scientists who conduct research in emerging interdisciplinary areas find themselves in increasing need for information from outside their own disciplines. The study of sound reception and sound production is case in point. Bio-Acoustic researchers may approach their studies from the disciplinary perspectives in biology, physics, medicine or engineering. They may also publish their research findings in journals traditionally not considered as belonging to their original academic disciplines. This discussion paper seeks feedback from the Institute of Acoustics Symposium delegates to assist Information and Library Sciences research into these problems.

KEY WORDS: database retrieval; inter-disciplinary research; information theory; library sciences

2. INTRODUCTION

The profound changes in the presentation of scientific thoughts, notably an increase in collaboration and a blurring of the literary boundaries between disciplines, have raised the need for changes in electronic information retrieval systems designed to serve the complex information needs of interdisciplinary scientists.

Researchers in interdisciplinary collaboration must overcome problems such as terminological barriers and communication barriers coming from different professional backgrounds, including different attitudes, values, and problem solving techniques in scholarly information exchange [1]. Their collaborative activities are often further complicated by the organization of literature as presented in both printed and electronic information systems, which are typically divided by disciplinary boundaries. The discipline-based information systems are convenient for traditional researchers. Yet interdisciplinary researchers often do not rely on the databases in their original academic discipline when seeking information for interdisciplinary research [2]. Traditional library classification and subject terms used in discipline-based information are often inappropriate for interdisciplinary researchers, because established academic disciplines don't always represent newer intellectual territories and interdisciplinary associations that constitute the scholarly communication system [3]. As the result, interdisciplinary researchers more often than not rely on personal networks in other disciplines, bibliographies and review articles, and footnote chasing techniques in information seeking [4].

A project was conducted to address this challenge, by studying the information-seeking behaviours of the members of a representative interdisciplinary science organisation, the International Bio-acoustics Council (IBAC), and identifying problems they encounter in using discipline-based information systems. The project was designed to answer two research

questions: (1) What characterises information seeking patterns of bio-acoustic researchers, and (2) how is bio-acoustic literature treated in databases and indexes. Finally the project attempts to suggest design solutions for information systems that are friendly to interdisciplinary researchers.

Members of International Bio-Acoustics Council were invited to provide information about their information seeking habits in a web-based questionnaire survey. Information collected includes the databases used, familiar search engines, platforms preferred, and the researcher's personal successes and difficulties in using information systems.

Preliminary results from the survey provide further understanding of the information seeking habits of interdisciplinary researchers. A large majority of bio-acoustic researchers experience difficulties in finding needed information in databases. They are often dissatisfied with the results which tend to be irrelevant, incomplete or simply lacking. A common complaint among bio-acoustic researchers is the need to frequently switching databases when conducting literature search. To compensate the difficulties they experience in searching traditionally discipline-based information systems, the bio-acoustic researchers rely heavily on two browsing methods. They routinely use the article citations to find related works of the citing and cited authors. Many of them also regularly scan new issues of journals for table-of-contents to keep themselves updated with current development in their research area.

To better serve interdisciplinary researchers such as those in bio-acoustics. Electronic Information systems must have sufficient information in the document surrogates (at least the bibliographic citation and abstract, though more researchers prefer full text electronic document delivery). The system must have simple search query interface and the capacities for searching multiple topics and multiple databases, and allow both focus search and browsing.

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