

THE DISCURSIVE CONSTRUCTION OF LITERATURE REVIEW: AN EXAMINATION OF CHINESE PHD STUDENTS' INFORMATION BEHAVIOUR

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Abstract

Information behaviour is a pertinent practice throughout students' research work. However, research students, particularly those with English as an additional language, experienced challenges and complications when studying in a western university. Issues relating to their information behaviour during the research process has largely been under-addressed and/or overlooked in both the fields of library and information science (LIS) and higher education. As part of a larger research project, this paper focuses on four Chinese PhD students' information behaviour in literature review practices. Semi-structured interviews were analysed through Foucault's concepts of discourse, knowledge and power. The paper argues that the PhD students' literature review practices, in terms of searching and synthesising relevant articles, are subject to two forms of discursive practices – the problem-based and resource-based practices. This study provides insights for research educators and students in the discourse of research education to weigh the practical consequences of different discursive practices in the construction of researchers' scholarly work.

Introduction

Information behaviour enacts a close relationship with an entire research process from literature review to data collection and analysis. With advances in information and communication technologies, research today involves more work in dealing with voluminous information exchange. Nicholas et al (2009) suggest that electronic journals along with other digital academic resources are widely used by research students at all levels. The present study investigates information behaviour in literature review practices. 'Completing a literature review forms one important context within which people learn to use information effectively, and within this process the need to be able to think critically about the relevance of information is very important' (Bruce, 2001, p. 158). Thus, searching and synthesising relevant literature is pertinent to scholarly work. This study reports preliminary findings on how Chinese PhD students synthesise relevant articles in their literature review practices. In doing so, this research applied Foucault's discourse analysis as the conceptual framework for the enquiry. Interview data from four Chinese PhD students in an Australian university were analysed. This paper argues that the literature review of these PhD students is subject to discursive practices. It has identified two forms of discursive practices (problem-based and resource-based) in the discourse of research education that mutually inform the participants' ways of literature review.

The intellectual context of literature review

There are two major fields of research relevant to literature review: the library and information science (LIS) and education for higher degree research programs (research education). Although the importance of literature review has been acknowledged (Bruce, 2001; Hillocks, 2005; Kwan, Chan, & Lam, 2012), there is a scarcity of empirical research in both fields into how discourse, knowledge and

power influence international research students' information behaviour.

Information search studies in LIS

In general, research in LIS suggests that both university students and researchers may experience challenges throughout their information behaviour. This raises the importance of investigating this issue in the context of research education. For example, Wang (2007) surveyed 315 preservice teachers in a US university to record their information behaviours. Findings concluded controversies were apparent on three aspects of information behaviour: information search, evaluation and citation. The first two aspects have relevance to this present study. First, the majority of students reported their capability in identifying keywords (89%) and narrowing down their searches (90%), while 40% stated they were struggling to identify the extent and scope of the information for accomplishing a task. Second, 80% of the students thought that they were capable of critically evaluating the information on the Web, yet at the same time 32% of them were unfamiliar with standard evaluation guidelines.

Another large-scale survey-based research was undertaken by Rowlands and Nicholas (2006) who reported the behaviour, attitudes, and perceptions of 5,513 senior journal authors on a scholarly communication system. Regarding information seeking and retrieval, they suggested that 'chasing up references in papers remains the most popular method for discovering journal articles of interest' (p. 53) in scholars' information search practices. However, it is not only university students who experience some difficulty in searching for relevant articles, scholars themselves consider it as a challenge. As a consequence of the information explosion, 'most authors felt insecure in the face of the rapid growth of the literature' (Rowlands and Nicholas, 2006, p. 53).

For improving search results in terms of relevance, recent research from LIS has attempted to develop more advanced searching systems. Kavuluru et al (2012) promoted an up-to-date knowledge-based literature search system for bioscience domains. The development of such a system attempted to 'reduce the cognitive load on the users by presenting interesting and latest facts relevant to a specific domain of interest' (Kavuluru, 2012, p. 283). With millions of information sources about bioscience, the system can computationally provide associative keywords and abstracts for researchers. Moreover, in order to better measure the quality of a knowledge base, Kavuluru et al (2012, p. 283) attempted to include 'journal impact factors and confidence scores' into the algorithms of the system. They considered that this improvement could address the accuracy problem when computational systems understand the meaning of natural language. Here, we are concerned about the applicability of the kind of system into the realm of the humanities and social sciences. The semantic meanings in these disciplines can be more complex than the language in disciplines such as bioscience. Foucault (1972, p. 21) refers to the sophistication of these disciplines as '... so unsure of their frontiers, and so vague in content ...'. Likewise, there is an increased awareness of the complexities of information behaviour in LIS. Riedler and Eryaman (2010, p. 90) indicated this as 'the postmodern conceptions of the nature of knowledge in the information age'. Other information researchers also share this notion and appreciate the significance of the social and discursive dimensions in the construction of information and associating behaviours (Frohmann, 1994; Talja, 1999; Olsson, 2010). The knowledge and insights drawn from these information researchers will be discussed further in the section, 'Discourse, Knowledge and Power'.

Literature review studies in higher education

Currently, there are two strands of thought regarding how to conduct a literature review within research education. They respectively focus on the 'means' and 'ends' of a literature review. 'Means' refers to research that theorised knowledge about ways of doing literature reviews, while 'ends' refers to the attributes of a successful review.

Gough's (2007) study on knowledge synthesis and use exemplifies the first type of research. Gough (2007) considers the complex nature of knowledge as with differing ideological and conceptual

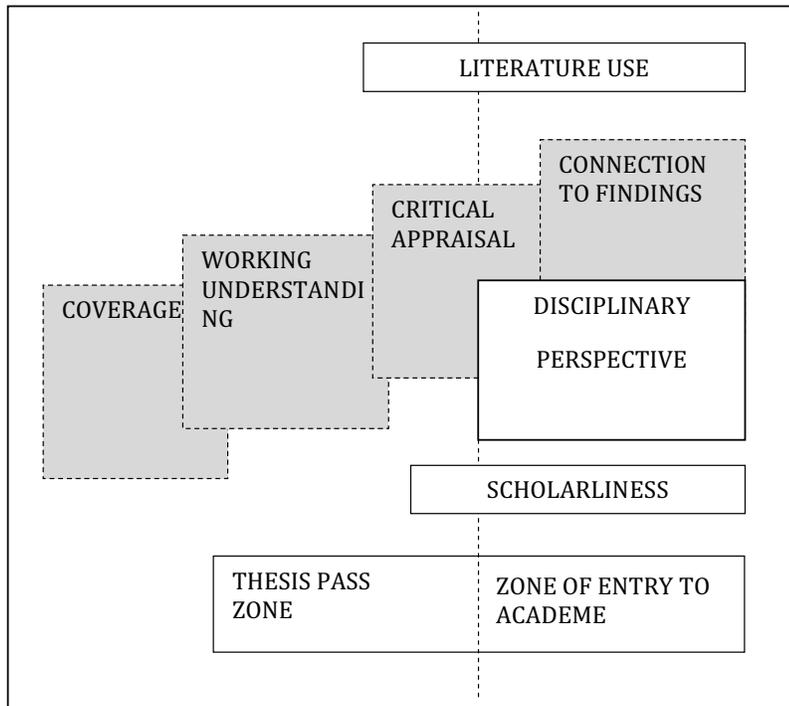
standpoints in terms of its production and different ways of applications. Thus, to address the complexity of appraising the quality and relevance of knowledge, he introduces the Weight of Evidence framework. This framework consists of four elements, they are: 'Generic judgement (Weight of Evidence A), review-specific judgement of the research design (Weight of Evidence B), review-specific judgement of evidence focus (Weight of Evidence C) and an overall judgement (Weight of Evidence D)' (Gough, 2007). In brief, generic judgment refers to evaluating the quality of a research article in its own terms; review-specific judgement of the research design refers to evaluating the relevance of the article with reference to the specific research questions; review-specific judgement of evidence focus refers to evaluating the differences between the article and the present study; and an overall judgement is a holistic evaluation based on the previous three evaluation criteria. Although Gough's work does not directly address the topic of literature review, it provides insights about the ways in which agents synthesise the literature in terms of its relevance. In this particular research context, literature sources in a thesis can be referred to as the units of knowledge. Then, the ways of doing literature reviews are parallel to the ways of synthesising knowledge as Gough's framework suggests.

Differently, Bruce (2001) identified eight aspects of the scope of literature review as derived from the beginning research students' concerns. These included topicality, comprehensiveness, breadth, relevance, currency, exclusion, authority and availability. These concerns were then classified into two distinct groups. One reflected a user-oriented view of the information use and the other, a system-oriented view:

- 1) *The subjective approach to scope.* To this category belong the concerns of breadth, relevance, authority and exclusion. In the subjective approaches, information is interpreted subjectively, from a user-perspective, psychological forms of relevance are preferred and relations are established between users and documents.
- 2) *The objective approach to scope.* To this category belong the concerns of topicality, comprehensiveness, availability and timeliness. In the objective approaches information is interpreted objectively, topical forms of relevance are preferred; essentially relevance is considered as an attribute of the document rather than a relation established by a user. (Bruce, 2001, p.163)

Bruce's work has outlined different approaches to the conduct of a literature review, while each approach specifies some distinct attributes that a literature review needs to embrace. Likewise, Holbrook (2007) explores examiners' comments about the constitution of a "successful" literature review. Figure 1 illustrates the qualities of a literature review that are valued by thesis examiners. In general, examiners highlight five indicators to evaluate research students' use of literature. They are 'coverage', 'working understanding', 'critical appraisal' of the body of literature, 'connection of the literature to findings', and 'disciplinary perspective'.

Figure 1 Examiner expectation about coverage and use of 'the literature' in Ph.D. theses



Source: adapted from Holbrook (2007)

Taking the quality of “disciplinary perspective” for example, it has been regarded as the highest quality in academic work that research students are able to “bring a perspective to the literature deeply grounded in their immersion in the discipline” (Holbrook, 2007, p. 1034). This quality can be considered as a higher level of information sense-making process indicating that the research student has a firm grasp of the literature in the field and is able to build an argument based on appropriate information. These studies have identified some “principles” of a successful literature review and offered a knowledge base for organising information sources. However, in the light of the work of Bruce (2001) and Holbrook (2007), further studies need to investigate how discourse, knowledge and power impact on research students’ processes in conducting a literature review process, specifically how this process is influenced by the available and authoritative knowledge in their fields through their interactions with texts and supervisors.

Discourse, Knowledge and Power

Discourse as an overarching conceptual tool

The study of discourse locates in culturalist textualism (Reckwitz, 2002). Unlike culturalist mentalism that concerns about the internal mental structures and activities, culturalist textualism interprets the social world as constituted by signs and texts. Foucault (1972) used a term ‘statements’ to refer to the totality of all the signs and texts. Then, discourse is a field of discursive practices in which writing, reading and exchanging statements are involved. Foucault (1972) put the idea as ‘this field is made up of the totality of all effective statements (whether spoken or written), in their dispersion as events and

in the occurrence that is proper to them' (p. 27).

There are different interpretations and applications of Foucauldian discourse. For example, Frohmann (1994) referred to discourses as a product manufactured through the process of institutionalized justification. He suggested that Foucauldian discourses are distinguished from everyday conversations, and they are performed by institutionally privileged speakers. Although Frohmann's research is not dedicated to enquiries on literature review, he has provided many examples about using the discursive approach to study the construction of information, its use and its users. For example, he adopted Melvil Dewey's technobureaucratic discourse to account for the transformation of librarianship. Technobureaucratic discourse, as maintained by institutions, promotes professional management through the use of efficient, standardized, mechanized and bureaucratic techniques. It is this validly institutionalized talk with these technologies of power constructs a form of subjection of a librarian's practice.

The interpretation from Frohmann (1994) is further elaborated by another LIS researcher Talja (1999). Different from Frohmann's perspective that seem to have overemphasized on the institutional power of discourse, Talja takes individuals as a starting point to study the discursive practices. Thus, discourse is not exclusively performed by institutionally privileged speakers; it is also a general interpretative practice performed by any person regardless of their roles and positions (Talja, 1999). This assertion has extended the study of discourse beyond the 'formal' institutionalized talk. Talja's view embraces a variety of texts as discursive practices that can affect and are at disposal of an individual subject:

In order to study serious speech acts and institutionalized talk, the speakers of the study need not be institutionally-privileged speakers. For instance, information-seeking narratives, reading narratives, information society narratives, Internet narratives, and library narratives can be studied from a variety of texts. The combination of interviews and written texts, or texts representing different contexts of discussion, enhances the generalizability of research results (Talja, 1999, p. 15).

Hence, the materials that are subject to discourse analysis are no longer limited to institutional texts. Talja (1999) has moved the focal point of discourse to what Foucault (1972, p. 521) termed "'local center" of power-knowledge'. The 'local center' of power-knowledge is, for example, the relations between penitents and confessors (Foucault, 1972). This informs the present study to look at students' interactions with their own textual work or supervisors' talk where certain knowledge and power are at play in restructuring their literature review practices.

The construction of knowledge and power in discursive rules

Foucauldian discourse contends knowledge or truth as mediated by "the ensemble of rules according to which the true and the false are separated and specific effects of power attached to the true" (Foucault, 1980, p. 132). The discursive rules forms a system of dispersion within which objects, types of statement, concepts, and thematic choices are selected, defined, and produced as knowledge or truth (Foucault, 1972). Knowledge or truth is being operated by discursive rules in terms of:

The limits and forms of sayable;
The limits and forms of conservation;
The limits and forms of memory;
The limits and forms of reactivation;
The limits and forms of appropriation (Foucault, 1991, pp. 59-60)

These discursive rules categorise certain utterances and ways of their expressions into different domains so that they can be shared and valued by agents in the particular fields. In a sense, discourse, through the rules of formation, evaluates, validates, and defines knowledge or truth and the conditions

of its existence. Such configuration enables members in a discourse community to share a body of statements as true and exclude else as false or inferiority (Olsson, 2010). The two forms of discursive practices identified in the study are types of knowledge derived from the rules of formation. That is, the problem-based and resource-based practices are validated and shared in the discourse of research education. In turn, these discursive practices also have become the rules of formation that inform the PhD students' conduct of literature reviews. With the rules of the particular discursive practices, the PhD students produce new knowledge by limiting, synthesising and reinterpreting appropriate and relevant literature sources.

Nonetheless, knowledge production cannot be arbitrarily made by the discursive rules. The process is maintained by technologies. Technologies are constituted by specific techniques that individuals use to understand 'the real' and themselves within the symbolic order (Foucault, 1988). Foucault sketches four major types of overlapping technologies:

- (1) technologies of production, which permit us to produce, transform, or manipulate things;
 - (2) technologies of sign systems, which permit us to use signs, meanings, symbols, or signification;
 - (3) technologies of power [domination], which determine the conduct of individuals and submit them to certain ends or domination, an objectivizing of the subject;
 - (4) technologies of the self, which permit individuals to effect by their own means or with the help of others a certain number of operations on their own bodies and souls, thoughts, conduct, and way of being, so as to transform themselves in order to attain a certain state of happiness, purity, wisdom, perfection, or immortality.
- (Foucault, 1988, p. 18)

Foucault's concept of power has particularly focused on the last two technologies – the technologies of domination and self. The meaning of power, from his perspective, is not referring to the dominant objects such as institutions and mechanisms with their assertion on particular rules:

The analysis, made in terms of power, must not assume that the sovereignty of the state, the form of the law, or the over-all unity of a domination are given at the outset; rather, these are only the terminal forms power takes. (Foucault, 1978, p. 92)

By objecting to these notions, he regards that power is permanent, repetitious, inert, and self-reproducing, coming from everywhere while subjecting individuals to a complex strategic situation in the meantime:

...[P]ower must be understood in the first instance as the multiplicity of force relations immanent in the sphere in which they operate and which constitute their own organization; ... as the support which these force relations find in one another, thus forming a chain or a system, or on the contrary, the disjunctions and contradictions which isolate them from one another; ... (Foucault, 1978, pp. 92-93)

Thus, power is not seen as some 'property' that certain agents withhold, it is a relation immanent in discursive practices. That means empowered or disempowered agents are determined by discourses rather than their social status. A prominent example is given by Miller (2008) who explicated doctor's power over the patient. He referred to doctors' power as 'the ways [they] can mobilise the privileged discourse of professional medicine ... in the clinical setting' rather than as out of 'an effect of occupational status per se' (Miller, 2008, p. 269). The research has identified similar power relations as happening in the communication between supervisors and the PhD students. Moreover, power is not merely established, changed or maintained between agents in terms of their force relations. It also can be seen as support which justifies certain ways of doing. The PhD students' rationalisation of their literature review practices manifests this point of view that they break down former chains of literature sources while establish new links for interpretation. Details will be provided in findings and discussions.

Research method

This study was conducted under ethical guidelines in order to gain participants' informed consent. Participants were informed of the purpose of the project; that their participation was voluntary; their anonymity was assured and that their participation would be devoid of any risk or harm.

Three female and one male Chinese PhD students were invited to the study in 2011. They were all in the last year of research candidature. Since the four PhD students are in the same research institution with the researchers, he invited them simply by making an appointment in person. However, the procedure still follows ethical guidelines that formal consent is received. The researchers have conducted four semi-structured interviews with an average of 50 minutes each in length. As the students were bilingual the language of the interview was given over to their choice. Three interviews were conducted in Chinese and one was in English. However, both languages were used by the participants throughout their interviews in varying degrees. During the interviews, participants were asked to recall and narrate their experience in doing literature reviews. The interviews were all transcribed verbatim and translated into English.

In terms of data analysis, the researchers applied some tools of enquiry from Gee (2011) and Talja (1999). Gee (2011) has suggested seven building tasks that a piece of text can enact in the world. For Talja (1999), her own work was to use Foucauldian analysis in examining interview texts. Their techniques to discourse analysis have helped the researchers to analyse the textual materials through the lens of Foucault's discourse, knowledge and power. As a result, the researchers analysed the participants' narration by looking at the significance (one of the seven building tasks) they have attached in their literature review practices (Gee, 2011). Moreover, Talja (1999) suggests embracing a specimen perspective to examine participants' expressions. In contrast with the factist perspective that relies on copious data's accurate reflection of the reality, the specimen perspective focuses on the text per se in constructing different versions of reality: "All forms of talk and texts represent situated speech which provides evidence of the various ways in which a particular phenomenon can be approached. Research data do not describe reality. They are specimens of interpretative practices" (Talja, 1999, p. 13). Thus, interview texts manifest the underlining and implicit discursive practices that capsule the participants' different ways of doing literature reviews (Talja, 1999).

Findings and discussions

Findings indicate that research students' behaviour during literature review is subject to discursive practices. The problem-based and resource-based practices can be identified circulating within the discourse of research education in shaping and reshaping PhD students' literature review. The analysis and discussion concerning these two discursive practices is unfolded in the following two sections.

Relevance of the articles found – the problem-based practice

Identifying the relevance of articles found in literature review is a significant skill required of PhD students. The participants in this study described 'relevance' with words such as 'useful', 'focus' or 'link'. Searching for relevance between literature sources is not limited to specific disciplines. Rather, the participants draw ideas from multi-disciplinary perspectives and interpret their relations to generate relevance.

[Producing a literature review] is to identify the connections among 'irrelevant' articles, which can become your contribution to knowledge. For example, when we talk about the topic 'imagination', there are many different interpretations about imagination. These can be from psychology, education, or sociology. So you need to have the skills to apply these concepts for your own concern. Identifying this missing link is why we are doing research. (Participant C, 24-08-2011)

The meaning of relevance therefore, needs to be distinguished from other terms such as 'topicality'. Topicality, according to Bruce (2001), exclusively includes literature directly related to the topic or subject area of research; but with regards to relevance, it can embrace literature beyond disciplinary boundaries in which the research is positioned. Finding relevant literature sources is grounded in the agent's own research problems/questions. The expression 'for your own concern' in the above excerpt clearly demonstrate the central position of the research question/problem when searching and synthesising relevant literature. Thus, there is a problem-based practice rationalising students' attitudes and ways of undertaking a literature review. This problem-based practice has a parallel to Gough's (2007) second element of his appraisal framework. The second element, review-specific judgement of a research design, aims to directly focus the attention of the researcher towards the relevance of certain evidence in relation to the question to be addressed. The following excerpt demonstrates the ways of how the research participants rationalised their synthesis with the underlining assumption of problem-based practice.

There are too many literature, which you may think they are all relevant to your research. However, when you think about them carefully, they are actually not so relevant. So it's easy to find literature about your research topic. You can find as many as you want, 100 or 200 articles. But I would use neither 100 nor 200. I think they are still too many. I just want to use 30 or 40 in my paper, because I think, 30 or 40 articles are enough to clarify the problem I'm going to research. Sometimes, you will just find that some articles, I didn't mean they are plagiarising or something, their contents are quite similar. So I think I just need some literature, as long as they can demonstrate clearly what my research problem is. (Participant A, 12-08-2011)

The excerpt above suggests that this student's understanding of locating, identifying and synthesising relevant literature is based on his/her understanding of the research question. Thus, the research question or problem acts as a censorial device that determines certain information sources as relevant and discard others as irrelevant or 'useless'. From this point of view, the problem-based practice is performing like what Foucault (1991) has indicated 'the discursive rules' which defines the limits and forms of sayable, conservation, memory, reactivation and appropriation. The research question defines what literature is sayable and appropriate in a particular domain of topic; for those literature sources that are considered as relevant to a research question, they are conserved, memorised and reactivated out of a repertoire of research papers.

Students' values towards the significance of problem-based practice are partly derived from supervisors' instructions. Supervisors suggest that discerning relevance needs to be contextualised within a particular research context.

My reading about transnational knowledge exchange is a general idea that focuses on the sociocultural level. But we [supervisor and the PhD student] need to narrow it down to the educational field. So my supervisor primarily taught me how to understand the text in a more focused way. What insights can we have when contextualising the concept into the educational field? So I tried to elicit the major concepts and to think about their effects on my research topic. (Participant D, 28-08-2011)

Supervisors are able to mobilise legitimate statements in the discourse of research education to assist students' in their information searching. Here, the researchers draw ideas from Miller's (2008) account on doctor's power in the clinical setting. Supervisors, in this sense, are similar to doctors who can mobilise the discourse of professional medicine to define patients' problems. That is, the supervisor's instruction, through the technologies of power, can legitimise the problem-based practice as a significant approach for the conduct of literature review (Foucault, 1988). This in turn, subjectivates the PhD students to objectivise the synthesis of a literature review as based on the problem-centred perspective.

However, PhD students' conduct of literature review cannot be informed exclusively by the problem-

based practice. Rather, the process is contextual and contingent involving constant exchange between research questions and available resources. The remainder of this paper will problematise the problem-based practice in research education through analysing the challenges identified by the PhD students' in synthesising relevant literature. Resource-based practice is introduced, which is often more implicit and less emphasised in the discourse of research education but which is also functional in the construction of a literature review.

Address indeterminate relevance – the interplay of two discursive practices

This study has identified the issue of indeterminacy when the research students attempted to synthesise relevant literature during the initial research stage. The researchers coded the issue as 'indeterminate relevance'. For example:

At the beginning I think when I was not very skilful at searching online, sometimes, there are just too many results, so in those situations I just don't know what to do. So sometimes I just pick a few from them but actually I'm not sure if these are the most relevant ones. ... This is not very easy I would say, because sometimes you just don't know whether it's very useful and sometimes you thought it's useful, actually, it's not. (Participant D, 30-07-2011)

The participant has expressed a sense of indeterminacy when searching for relevant literature. The issue of indeterminacy partly derives from a student's lack of experience and knowledge, particularly the understanding of his/her research questions/problems.

I will use some key words from the articles my supervisor gave me. I will use these key words to search for more articles, scanning them to identify ones I'm interested in, these articles that are relevant to my research question. But actually, at this time, it was a quite general idea, just because I totally didn't know the research problem I'm going to study before completing the Confirmation of Candidature. Thus, at that time my literature reading was quite broad, just to know a bit about the research problems other people are doing, and with what methods. (Participant A, 12-08-2011)

The PhD students at the initial research stage do not have a clear understanding of their research question or problem. The shortage of knowledge on their research questions makes their information behaviour disoriented like a 'safari in the desert'. Thus, this has become the constraining factor to the effectiveness of searching and synthesising relevant literature through the problem-based practice. The problem-based practice under this condition, cannot facilitate the students' information behaviour, but rather produces the sense of complications and indeterminacy. Indeterminate relevance can be partly addressed by another form of practice – the knowledge/resource-based practice. The resource-based practice is a process by which PhD students accumulate a wide range of information and knowledge not only 'on the topic' of their research but also in 'areas of concern' where potential relationships can be discerned (Bruce, 2001, p. 161). By supporting PhD students to more fully understand their research topics, the resource-based practice can move their research forward.

I started my research by first of all, doing the literature review. I think it's very important, because you'll not know what you're going to write if you don't do the literature review. It's like finding gold, the gap, the issue. Although you may know something before doing the research, you'll know more through the literature review. So I think the literature review is very important. (Participant C, 24-08-2011)

Here, the conduct of literature review is a general idea that agents can be well informed through searching and reading a wide range of information sources. This process enables the PhD students to accumulate knowledge and improve their understanding of the research questions/problems. They will consciously look for the key idea of a particular article and identify its 'arguments'. These 'arguments', as accumulated from reading, can stimulate the PhD students to think and refocus their research questions.

I find there's no time for me to do extensive reading, and I also think it not useful to read like this way. There will be a problem when you get many arguments from others but you don't have your own argument. So I decided to just look though their research methods and arguments. (Participant B, 06-08-2011)

As a result, research questions or problems can be constructed and reconstructed from students' interactions with the literature sources they have. In turn, with the emerging research questions or problems, students are more capable to reject irrelevant literature and identify relevant ones.

In the beginning, I actually have read many papers, but few of them can be used. Then you will have an idea in your later search and reading: 'these papers about that aspect are definitely not relevant to your research.' So now many of my notes stored in my computer are not quite useful. ... Although many papers I came up with are not quite useful, I think as long as you got some which helped you open your mind you will know what papers you need. (Participant B, 06-08-2011)

A significant interplay between the problem-based and resource-based practices is noticed here. The two practices form a reciprocal cycle in the process of a literature review. The work of evaluating the relevance of literature sources is time consuming and requires persistence on intellectual thinking. It often involves extensive reading, note taking, and constant comparison between information sources and the research focus. The resource-based practice informs PhD students to engage large volume of literature sources. The increasing knowledge base enables PhD students to discern their research questions more clearly. Then, clearer research questions help PhD students to better distinguish ir/relevant research articles through the problem-based practice. Subsequently, information sources that are regarded as relevant will constitute the overarching structure of their literature review.

In actuality, the practice of undertaking a literature review does not end at a particular point in the research journey. It involves the constant interplay of the two forms of discursive practices which often results in a disconnection of previously established relationships between certain literature sources and a reconnection with newly found articles (Foucault, 1972).

A: I think the first group of literature located for the review is not quite useful. It is useful for the process of Confirmation of Candidature. The literature which finally appears in the thesis is found in the last two years of PhD study. This is because you will involve evidence you presented in each chapter. So at that time you can find more useful or relevant literature.

Q: So how does your supervisor think about the issue? Just reject the previous literature or something else?

A: I think he didn't say that much. Perhaps he thinks that they are all useful. But later, you know, you can't write a literature review too long. If I put all the literature together collected from the first, second, and third year, there will be 60 pages which is impossible. So you have to 'slash'. Then you'll find that the most literature you slashed are those you found in the first year. (Participant A, 12-08-2011)

The excerpt above indicates the transformation that, with the development of the research focus through evidentiary chapters, the PhD student can find more relevant literature while discarding those that were previously considered relevant and significant. This very process involves the dynamism of the PhD students' internal power and knowledge exchange in discursive practices. Power relations in this particular context cannot be seen as traditionally enacted between agents. That is, the PhD students' power evolvment is not derived from their communication with supervisors but is largely relevant to their communication with texts, namely reading a repertoire of literature sources. Through the negotiating process between literature and empirical evidence, the PhD students empowered themselves with more informed knowledge in their particular fields. Hence, they are more likely to be able to harness both the problem-based and resource-based practices for 'locating' more 'needy' literature sources. This procedure of disconnection and relocation through the discursive practices has

mobilised literature sources and their relations beyond previously accepted knowing. Olsson (2010, p. 67) expresses the similar view in considering the fluid nature of knowledge or truth:

The 'weighting' of one text more than another, involves a series of dynamic power relations. Their relations are constantly re-inventing and re-affirming themselves through the process of applying the discursive rules to examine new 'texts' and re-examine existing ones.

Hence, the process of reproducing knowledge is subject to power relations. The PhD students' rationalisation of their literature review practices manifests this point of view that they break down former chains of literature sources while establish new links by adding newly retrieved articles or introducing alternative ways of thinking.

Conclusion

This paper has reported the findings of four Chinese PhD students' discursive practices in conducting literature reviews. Two forms of discursive practices – the problem-based and resource-based practices have been identified as supporting the shaping and reshaping of the PhD students' literature review. Both practices subjectivate the PhD students' ways of searching and synthesising relevant literature. Constructing a 'successful' literature review requires the agents – the PhD students – to recognise and understand the dynamism that both discursive practices are at play in the research discourse. By revealing the two discursive practices, the study may provide insights for both research educators and research students to weigh the practical consequences of the practices in constructing the information behaviour of scholarly work. The paper only reports the findings of data analysis from four participants, while supervisors' perspectives in how research students can be assisted in their literature review practices are yet to be analysed. Hence, future publications will include more comprehensive analysis from the large data set of the project.

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