

**RECONSIDERING THE ROLE OF INSTRUCTIONAL
DISCOURSE IN PROBLEM-BASED LEARNING
ENVIRONMENTS: MONOLOGISM, DIALOGISM AND
STUDENTS' KNOWLEDGE CONSTRUCTION**

Stefanie Chye

Centre for Educational Development
Republic Polytechnic, Singapore

KEYWORDS

Problem-Based Learning, Instructional Discourse, Sociocultural Theory, Monologism and Dialogism, Knowledge Construction, Qualitative Research, Discourse Analysis

ABSTRACT

Efforts directed at enhancing the quality of higher education have been accompanied by the ready embrace and recognition of Problem-Based Learning (PBL) as a valuable pedagogical method. While the underlying benefits of PBL are clear, what is equally apparent is that not all PBL learning environments are effectual. A key factor determining the efficacy of PBL is the instructional discourse employed during facilitation. Yet, instructional discourse in PBL is typically neglected. This paper reports on the results of an exploratory pilot study that examines the relationship between the types of instructional discourse employed during PBL facilitation and students' construction of knowledge. A sociocultural perspective is employed as the overarching theoretical framework and the Bakhtinian-derived constructs of monologism and dialogism are used as heuristics to describe the types of instructional discourse that may occur. Multiple qualitative techniques are used to collect the data. These include videotaping and the collection of students' work including their reflective journals and their powerpoint presentations. Results of the study are forthcoming but the findings will be discussed with a view towards improving the quality of instructional discourse in PBL facilitation and students' knowledge construction.

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BACKGROUND TO THE STUDY

Efforts directed at enhancing the quality of higher education have been accompanied by the ready embrace and recognition of Problem-Based Learning (PBL) as a valuable pedagogical method. It is increasingly acknowledged that PBL has much to offer in terms of preparing students for the workforce, developing skills for lifelong learning and in advancing students' construction of meaningful forms of knowledge (Tan, 2004). While the underlying benefits of PBL are clear, what is equally apparent is that not all PBL learning environments are effectual. This attests to a need for insights into how the learning affordances inherent in PBL can be maximized.

A key factor determining the efficacy of PBL is the instructional discourse employed during facilitation. Instructional discourse is the *modus operandi* of PBL (cf., Kusnick, 1997). A substantial body of research on language, learning, and teaching further indicates that the extent and manner of students' cognitive development depends to a considerable degree on the forms of language that they encounter in educational settings. Together, these suggest that certain kinds and features of instructional discourse employed within PBL learning environments are likely to afford more opportunity than others for students to learn and develop. If we are to understand how PBL can be more profitably used, we must look closely at the instructional discourse that occurs. Yet, instructional discourse in PBL is with few exceptions (e.g., Lee & Tan, 2004), typically neglected as a resource of student learning.

As a consequence, the present study seeks to explicitly examine the relationship between the instructional discourse employed during PBL facilitation and students' knowledge construction. A sociocultural perspective is employed as the overarching theoretical framework. Sociocultural theory originates from the ideas of Lev Semenovich Vygotsky and outlines the role of language in learning and development (e.g., Vygotsky, 1978). Although sociocultural theory provides a firm basis for examining the general role of instructional discourse in education (Hicks, 1995; Wells, 1999), it does not specify the types of discourse that may occur. As such, the Bakhtinian-derived constructs of monologism and dialogism are used as heuristics to describe the types of instructional discourse that may occur (e.g., Bakhtin, 1986).

An exploratory pilot study is conducted to examine these issues. The study is situated within the Republic Polytechnic which employs PBL as a sole instructional methodology. The implementation of PBL at the Republic Polytechnic is characterised by the One-Day-One Problem™ approach whereby students work in teams on a given problem for the span of a whole day which lasts approximately eight hours. Each day is structured into three meetings with the facilitator and two segments of time when learning is self-directed. In the first meeting, the students are presented with the problem of the day and they attempt to identify the learning issues. The role of the facilitator is to encourage students' deconstruction of the problem and their problem analysis process. In the second meeting, more discussions take place with the facilitator's role being that of listening and diagnostics. The students present and defend their solution in the third meeting (e.g., Venkatachary, 2004). This structure implies a conversational framework with the action-feedback cycle embedded within it (e.g., Venkatachary, 2004).

RESEARCH DESIGN AND METHODS

The research design takes the form of a collective case study which takes place within the Republic Polytechnic. Case studies focus on the sociocultural analysis of a unit of study or case (Merriam, 1998). This unit of study refers to a bounded system (Smith, 1978) or a bounded context (Miles & Huberman, 1994). In this project, the classrooms to be examined will constitute the units of study or the cases for the case study approach.

Participants include first year polytechnic students enrolled in a compulsory general module on cognitive processes and problem-solving and the facilitators of the classes. The specific research questions to be addressed are: (i) What are the types of instructional discourse employed during PBL facilitation and (ii) How does the nature of the instructional discourse impact on students' knowledge construction.

Multiple qualitative research methods are employed to address these issues. These strategies include the use of video-taping and the analysis of students' work including their reflective journals and their powerpoint presentations. Videotaping provides a rich source of information about classroom dialogue and classroom interaction patterns. The data obtained from the videotapes further enables the identification of the classroom practices and aid in the contextualisation of the transcripts obtained from the classroom talk. The collection of students' work on the other hand, would provide indicators of their learning outcomes. The combination of multiple methods, empirical materials and perspectives in this study,

represents an attempt to secure and add rigour, breadth, and depth to the investigation (cf., Brewer & Hunter, 1989).

The analytic framework employed for examining the video-taped data involves a fusion of ethnographic analysis and the analysis of discourse. Ethnographic analysis allows for the identification of the classroom practices (Goetz & LeCompte, 1984). Discourse analysis has an analytic commitment to studying discourse as talk within social practices within a focus on language as the medium for interaction (Potter, 2004). This combined approach is recognised for its utility in helping the researcher manoeuvre around the complex and continuing nature of life in classrooms and for providing insights into the complex and dynamic relationship among discourse, classroom practices, learning and development (Gee & Green, 1998).

RESULTS AND DISCUSSION

The data is currently undergoing analysis and results from the study are forthcoming. However, implications for PBL facilitation with a view towards improving the quality of instructional discourse and students' knowledge construction will be considered and discussed.

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