Chapter XXIII
Dialogue Mapping and Collaborative Learning

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ABSTRACT

This chapter introduces the concepts, principles, and application of dialogue mapping. Dialogue mapping is a visual thinking tool for facilitating group meetings using a shared display. Experience of using dialogue mapping as well as other types of shared display in small-group discussion are discussed. The results, benefits, and limitations of using different kinds of shared display in small-group discussion are compared and examined. Dialogue mapping produces better collaboration and shared understanding among students during discussion than using other shared displays. The impact of dialogue mapping on collaborative learning is explored. Factors influencing the effectiveness of group meetings in problem-based learning are also discussed.

INTRODUCTION

Dialogue mapping is a visual thinking tool with a shared display for recording questions and ideas, as well as the connections between them, in a discussion meeting. It is developed to assist a group to solve ill-structured problems in a commercial setting where various stakeholders are involved. It can also be used in facilitating group meetings in educational settings where student-centered problem-based learning is employed.

In student-centered problem-based learning, students are usually arranged in small groups to tackle a problem scenario. A problem scenario is an open-ended and ill-structured problem in an authentic context. It allows students to explore the problem from different viewpoints, different pathways, with different learning styles, and to arrive at different solutions. The pathways are complex enough for a variety of investigations with different ability levels. The student learning group works through the problem scenario

in a collaborative manner to achieve the desired learning objectives. Group meetings are essential elements of student-centered problem-based learning. Learning as a group to discuss and explore various issues is an essential element of collaborative learning. Although face-to-face meeting is the usual form of group meetings, the effectiveness of the group discussion and collaboration varies.

Over the years, the author has facilitated student learning groups with different approaches. This chapter generalizes the author's experience and observations regarding small-group discussion in a problem-based learning environment. The main objectives are:

- To explore the impact of dialogue mapping in facilitating group discussion and collaborative learning
- To discuss the factors influencing the effectiveness of group meetings in a problem-based learning environment

Concepts and techniques of dialogue mapping are presented. The potential and effectiveness of using dialogue mapping to facilitate group discussion and collaborative learning are evaluated and illustrated by means of cases and examples. Benefits achieved and problems involved in the impleme

BACKGROUND

Dialogue mapping is a tool to create a shared map representing the questions and ideas discussed in a group meeting. Collaborative learning takes place within a group through meaningful conversation and dialogue. Dialogue occurs naturally between people. The term "dialogue" comes from the Greek word *dia,* which means "through" or, "with each other." The goal of dialogue is to establish a field for inquiry. In a group setting, members become more aware of the context surrounding a particular experience and the process of thought and feeling that created that experience.

Although knowledge sharing and collaborative learning occur during a group meeting, they are not necessarily conducted in the most effective manner. The problem is that humans have a limited capacity for short-term memory. People have limited memories, and because they are concerned that their ideas might not be heard and are not taken seriously, they often repeat the same thing over and over again during a meeting. Based on observations in facilitating meetings, this repetition cycle makes it extremely difficult to move forward and make progress.

Recording ideas on a shared display, as they are actually being proposed, is one way to address this problem. Simply writing down the idea so that everyone can see it is a significant improvement. The shared display works as a group memory. Schrage (1990) writes extensively about this idea of shared display. One technique that Schrage suggests is to have a transcriber take minutes of a meeting and display the minutes on a projected screen. Hence, every participant can follow the minutes as they are being created. Doing so reassures participants that their ideas are being heard and that the transcriber understands those ideas. If the transcriber interprets an idea incorrectly, the participants can correct the minutes instantaneously. Taking live minutes also allows the contents of a meeting to be distributed immediately after the meeting.

Shared display is a critical component of the dialogue mapping system. Dialogue mapping is a technique to create a shared map representing the meeting discussion. However, one key difference between dialogue mapping and other live transcription techniques is that the former uses a specific technique from issue-based information systems (IBIS) (Kunz & Rittel, 1970; Rittel & Noble, 1989). IBIS consists of three simple constructs: ideas (questions), issues (possible solutions), and arguments for or against those issues. Ideas respond to issues, and arguments respond to ideas. These constructs are enough to map any

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