

Students' understandings of collaborative discourse: A knowledge building approach

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Abstract: The study assessed students' understanding of collaborative discourse and examined the role of knowledge building environment augmented with reflective assessment in fostering more sophisticated views of collaborative discourse among students. One language teacher and 31 high school students in Hong Kong participated in this study. Data were collected from students' pre-post essay writings about "*what is good discussion*". This study identified four patterns of understandings about collaborative discourse ranging from less to more sophisticated, and found that students' understandings of collaborative discourse became more sophisticated after their engagement in knowledge building.

Keywords: Knowledge building; views of collaboration; epistemic cognitions

Introduction

Computer-supported collaborative learning (CSCL) has received much attention in the recent decade. How can we improve students' online participation and enhance the quality of their online discourse is one of the major concerns in this line of research. Among the few studies that address this issue, some study (e.g. [2]) found that students' views of collaboration predict their online participation. The more students' views of collaboration are aligned with knowledge building, the more likely they are going to participate in the Knowledge Forum (a computer supported platform for knowledge building). This study shed light on the importance of examining and influencing students' views of collaboration from a knowledge building perspective. Examining how student understand good collaboration, particularly collaborative discourse, is important also because it reflects a kind of epistemic cognition that focuses on the social aspects of knowledge and knowing. "Epistemic cognitions"(personal epistemology) is an area that studies individual's views about the nature of knowledge and knowing. Its importance has been established by a growing number of literature, as it is constantly reported to be related to students' learning process and outcome [3][5]. With the development of learning theories that became more focused on the social aspect of knowledge and knowing, epistemic cognitions researchers also proposed to take a socio-cognitive and socio-cultural perspective to understand individuals' beliefs about the nature of knowledge and knowing [6]. Some studies responded to this call by addressing the cultural relevance of epistemic cognitions (e.g., [4]). However, the social aspect is still neglected. Therefore, one of the main purposes of this study is to understand the social aspect of individual's epistemic cognitions, in particular, to examine how students understand the collective aspect of knowledge and knowing by looking at how they understand collaborative discourse. Meanwhile, the study also tries to examine the change of these epistemic cognitions in knowledge building environment. Two research questions are addressed in this study: (1) what are middle school students'

understandings of collaborative discourse? (2) Do students' views of collaborative discourse become more sophisticated after engaging in knowledge building?

1. Methodology

One high school language teacher and their Form 6 students (n=31) in Hong Kong participated in this study. The teacher had 7 years Language teaching(Chinese) experience, and had used knowledge building pedagogy in language teaching for 6 years. The intervention lasted for half a year (2010-2011). It was implemented once every week; each time it lasted for about 2 hours. The topics covered in knowledge building discussion included "Chinese culture and literature" and "current issues". The learning environment was designed based on the transformed knowledge building pedagogy[1] aligning with reflective assessment. The teacher adapted this pedagogy for language learning: (1) Nurturing collaborative culture. Students read the learning material and discuss it in the classroom. The ideas are recorded in public places (e.g., papers) and became the objects for inquiry; (2) Developing knowledge building inquiry. Questions of interest were moved to knowledge forum where they made collaborative inquiry into emergent ideas and made constructive use of authoritative information to improve the community knowledge; (3) Deepening the inquiry. Students were encouraged to synthesize their ideas and deepen the collaborative discourse; (4) Portfolio assessment. Portfolio assessment was used to capture and also to scaffold the advancement of the community knowledge. Students identified the best cluster of notes and justified the reason behind their selection according to knowledge building principles. In order to assess the change of students' understanding of collaborative discourse, each student was asked to respond to a question in writing "*what is good discussion*" before and after their engagement in knowledge building.

2. Analyses and Results

2.1 Students' Understandings of collaborative discourse

Both students' pre and post writings about "*what is good discussion*" were examined to identify the patterns of understandings about collaborative discourse. Four levels of understanding were identified and developed into a 4-point scale ranging from simple to more sophisticated views.

Level 1: simple view about discussion. At this level, students have some general ideas about the behavioral features of good discussion, such as listening, responding, communicating, and having good attitude: "*In order to have good discussion....we need good communication, answer other people's question politely, have eye contact, respect each other....*" (pre12)"

Level 2: Students elaborate on ideas such as give examples while you discuss, find some relevant references, and question other's response: "*.....For a good discussion, there must be someone in charge of taking notes and recording the conclusions and questions. Members need to finish the discussion on time, and find some relevant references before the discussion.*" (6bpre09)

Level 3: Students mention multiple unelaborated KB (knowledge building) ideas. They have some limited and fragmented understanding about the importance of "new information", "summary", "clarification", "questioning", "diversity of idea" for good discussion, and did not know how they work together for improving the community knowledge: "*what is a good discussion: (1) use more examples and authoritative information; (2) bring up some small questions to lead classmates to think, deepen the discussion; (3) extend others' response to deepen the discussion; (4) we can do summary in the process to make the discussion clear; (5) point out other' misconception, so that we can have a focus on the discussion....*" (6bpost20)

Level 4: At this level, students not only mention about some KB ideas, but also make connections between them. They have more coherent understanding about the role of "shared goal", "constructive use

of information”, “diversity of ideas”, “rise above”, and “social metacognition (clarifying, questioning, reflection)” in improving the community knowledge. They have more awareness of the collective nature of knowledge and knowledge construction process: “*I think, for a good discussion, there must be a clear theme, even though every one thinks differently, for example, all the group members need to have a shared goal, but they can bring up different methods and ideas. Meanwhile, it entails synthesis of different ideas, and a good conclusion. The discussion does not necessarily need a summary, but it needs to show signs of analyzing and synthesizing other people’s ideas, and then deepening their ideas....*” (6bpost15)

2.2 Changes in Students’ Understandings of collaborative discourse

Students’ pre and post essay about “*what is good discussion*” were analyzed and rated on a 4-point scale as illustrated in session 2.1. A second rater will be employed later for establishing the inter-rater reliability. Paired t- tests showed that students made statistically significant changes towards more sophisticated views of good discussion, $t(30)= 6.875$, $p<0.001$ [pre test: $M=1.74$ $SD=.68$; post test: $M=2.77$ $SD=.61$]. Specifically, most students held simple views of good discussion in the pre test (87.1% are at level 1 and 2), after the knowledge building instruction, most students’ understandings of good discussion were at level 2 and 3 (90.3%).

3. Discussion

The purpose of the study is to provide an initial look at the characterization and development of students’ understandings of collaborative discourse in the knowledge building environment augmented with reflective assessment. Four patterns of understandings of collaborative discourse were identified, ranging from simple to more sophisticated views which are more aligned with knowledge building. Quantitative analysis showed that students did make significant changes in their understanding of good discussion after experiencing knowledge building. More work is needed to examine how the change happens. To conclude, this study is trying to contribute to our understanding about the collective aspect of epistemic cognitions, as students’ views of good discussion reflected how they understand the collective nature of knowledge and knowing. It also shed light on the possibility of influencing students’ epistemic cognitions with knowledge building pedagogy and reflective assessment. Future studies can be conducted to understand whether and how students’ understandings of collaborative discourse predict their online discussion.

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