Student Talk in Whole-Class Teaching: Findings from a Teacher Professional Development Intervention

Jan Hardman
University of York, United Kingdom

Abstract

Enabling students to become more adept at using language is seen as one of the major goals of education so they can express their thoughts and engage with others in joint intellectual activity. Within classrooms, students can develop their proficiency in the use of spoken language through teacher-student and student-student interactions. This paper focuses on the first of these educational approaches. Drawing on an experimental study of an intervention designed to improve the quality of teacher-student interaction, engagement and learning in the teaching of primary English, mathematics and science in England, it presents the findings from the quantitative and qualitative analysis of a large database of spoken language drawn from video-recorded lessons.

Introduction

The purpose of this paper is to focus on the analysis of student talk in whole class teaching in primary English, mathematics and science which formed part of a process evaluation of a large-scale randomised controlled trial (RCT) to study the impact a professional development intervention on the quality of classroom interaction, student engagement and learning. The RCT study involved 76 schools, 152 Year 5 teachers and approximately 5,000 students (aged 9-10) in schools serving disadvantaged areas of England. The study was designed to test the effectiveness of professional development intervention based on a dialogic teaching approach that included structured print materials, mentoring and video-based peer review (Alexander, Hardman & Hardman, 2017). Using standardised tests, an independent impact evaluation found that after just 20 weeks, the Year 5 students who received the intervention made, on average, two months' more progress in English, mathematics and science than a similar group of students who did not receive the intervention (Jay et al, 2017).

The process evaluation included a large data set of video-recorded lessons. 15 teachers from the intervention group and 11 from the control group agreed to be video recorded twice over 2 terms teaching English, mathematics and science creating a total of 134 lessons (67 in each term). The resulting recordings were subjected to both quantitative and qualitative analysis using computerised systematic observation and analysis of transcribed lessons to investigate student talk by means of a theoretically-grounded discourse analysis framework.

The research questions addressed in this paper are as follows:

1. Did the dialogic teaching intervention improve the quality of student talk?
2. What kinds of student talk moves were cultivated through dialogic teaching?
3. Were there any differences in student talk moves between English, mathematics and science?

Theoretical framework

The study drew on the socio-cultural view of learning which suggested that classroom discourse is not effective unless students play an active part in their learning (Alexander, 2016; Hardman & Hardman, 2017). Such a view questions the value of the linguistic and cognitive demands often placed on students within the traditional teacher-led question-answer recitation. Within this traditional whole class teaching approach, students are mainly expected to be passive and to recall, when asked, what they have learned, usually within the teacher's frame of reference. It has led to the researching of alternative approaches to traditional transmission modes of teaching in whole class teaching. They include, for example, encouraging teachers to ask authentic or open-ended questions and to follow-up answer with a probe to extend the turn with requests for clarification, use of examples, and solicitation of reformulations or reflections to co-construct and guide the development of deduction skills, reasoning, and thinking (Hardman & Hardman, 2016).

For example, recent work in primary science in the USA has also identified a small group of discourse moves that have been identified as academically productive (Michaels & O'Connor, 2012). Such moves prompt students to share and expand upon their ideas (e.g. 'Can you say more about that?'); to listen carefully to one another (e.g. What do you think of what X has just said?'); to help students dig deeper as they provide evidence to support their claims (e.g.' Why do you say that? What's your evidence?'); and, to help students think with the reasoning of others to build on, elaborate, and improve the thinking of the group (e.g. 'Who can add to what X has just said?'). By establishing clear ground rules for class discussion alongside the introduction of the talk moves - e.g. students are expected to listen to one another attentively and respond respectfully - a culture of productive talk is established.

Methods

In order to systematically analyse the 134 video lessons a computerised observation software package known as The Observer XT 12.5 was used to quantify coded acts and exchanges. The coding framework used key verbal indicators of typical classroom talk, both traditional and dialogic: for example, the use of open and closed questions by teacher and moves to probe, extend and follow up student contributions. Coders were trained and inter- and intra-rater reliability was checked

to maximise coding consistency. The coded acts and exchanges were then statistically analysed using SPSS.

In addition to the teacher moves, the frequency and duration of student talk moves were also analysed in terms of brief and extended student contributions. Brief student contributions referred to student responses to teacher questions which contained pre-specified information, expressed in a word, phrase or a simple sentence, without any development. Extended student contributions referred to student responses which contained non-specified information and thinking. The contribution was developed to some extent through explanation, expansion, evaluation, justification, argumentation, speculation and so on.

However, to judge student talk moves merely by their lengths, as in brief or extended, was regarded useful only as a preliminary or general indicator of quality of classroom talk. What mattered more was the form, nature and character of student discourse moves that gave a more nuanced insight into the manner in which students engaged in learning and exhibited levels of explanation, analysis, argumentation, challenge and justification. Following on from the computerised systematic observation of the video lessons and quantification of student discourse moves, transcripts of lesson episodes (totalling 540 audio-minutes) from a sub-sample of 54 lessons were qualitatively analysed to investigate student talk by means of a theoretically-grounded discourse analysis framework. The framework allowed for the identification and in-depth analysis of student discourse moves that were found to be academically productive. In addition, the qualitative analysis gave a more nuanced insight into the types of learning talk engaged in by students and helped in the identification of the types of discourse moves they used when arguing, explaining and justifying their thinking, and building on the contributions of other students.

Results

Overall, the dialogic teaching intervention was found to have a positive impact on student learning in English, mathematics and science. In addition, the findings from the computerised systematic observation of the video-recordings also showed that it had impacted positively on teacher questioning, teacher talk moves for probing student responses, the balance of recitation and discussion/dialogue, and the length and duration of student contributions. The discourse analysis of lesson transcripts also showed that the intervention increased student confidence in participating in the classroom talk by expanding their repertoires of learning talk, beyond recall of information.

Significance

The study makes a significant contribution to research and practice in terms of advancing our understanding of the nature, character and quality of student talk and

how the students engage in learning English, mathematics and science. Other contributions include the collection of a unique and large data set of video-taped lessons encompassing three different subjects, and the development of an analytical tool for analysing student talk. It also points to the important role such findings will play in the development of clearer guidelines for teachers on the types of discourse moves that promote student engagement and learning.

References

Alexander, R. J. (2016). *Towards Dialogic Teaching: Rethinking classroom talk*. York, Dialogos.

Alexander, R.J., Hardman, F. and Hardman, J. with Rajab, T. and Longmore, M. (2017), *Changing Talk, Changing Thinking: interim report from the in-house evaluation of the CPRT/UoY Dialogic Teaching Project*. York, University of York.

Hardman, J., & Hardman, F. (2016). Guided Co-Construction of Classroom Talk. In: S. Wortham, D. Kim & S. May, (Eds.), *Handbook of Language and Education: Discourse and Education***.** The Netherlands, Springer, pp. 1-12.

Hardman, F., & Hardman, J. (2017). Systematic observation: Changes and continuities over time. In: R. Maclean (Ed.), *Handbook on life in schools and classrooms: Past, present and future visions*. Dordrecht, Springer, pp. 123 – 138.

Jay, T., Willis, B., Thomas, P., Taylor, R., Moore, N., Burnett, C., Merchant, G. and Stevens, A. (2017). *Dialogic Teaching: Evaluation Report and Executive Summary*. London, Education Endowment Foundation.

Michaels, S. & O'Connor, C. (2012). *Talk Science Primer*. Boston MA, TERC.