Teaching for Learning Network

Video Analysis of Small Group Teaching

Rationale

Prior research and evaluation has identified that there are differences in how teachers approach the teaching of specific topics, particularly those identified as being conceptually demanding, to small groups. Interviews demonstrated that while some teachers characterised small group teaching as an opportunity to extend lecture content, others conceptualised it in terms of coverage of core content and remedial teaching of areas where students had misconceptions and difficulties. It was expected that small group teaching would be found to involve a combination of teaching and learning activities, and that they might fulfil several pedagogical roles; this necessitated the adoption of a flexible research approach sensitive to the variations between and within small group teaching settings, and also capable of reflecting disciplinary norms.

Procedure

We have experimented with a number of technological solutions and have found that in terms of cost-effectiveness, a single, good quality digital video camera with a ceiling-mounted microphone permanently mounted in an office has provided adequate quality video with only minimal interference in the small group teaching environment.

The issue of consent needs to be clearly related to potential applications of video data (and other data for that matter). Consent to the use of data for 'research purposes' needs to be clear: for example, does consent extend beyond the initial research team to other, later researchers; to other members of the research community (for example in teaching, seminars or conference presentations)? Data collected for research purposes will almost certainly need further consent if it is subsequently incorporated into training materials (for new supervisors, for example) or for orientation materials for new and prospective students.

Data Collection and Analysis

The focus of data collection was the collection of high-quality video of small group teaching conducted in departments or colleges; these were supported by subsequent face-to-face interviews or online feedback. The videos were transcribed and then underwent qualitative analysis using Atlas/Ti. This allows a wide range of reports to be produced, ranging from listings of the content and context of interactions coded in a particular way across the coding schemes to more complex co-occurrence and concordance reports. We developed a coding

scheme based on the review of 'best practices' compiled by the ETL project (Entwistle, 2003) although our initial trial codings involved refining this to make it more appropriate for small group teaching situations.

One of the affordances of video data is its availability for analysis using different analytical frameworks or theoretical 'lenses', either as part of an iterative analytical process, or in the course of subsequent, secondary analysis. In addition to qualitative analysis, we have been able to use transcripts and videos to explore:

- Textual Analysis (Basic Measures): we investigated Mean Length of Utterance (MLU); Mean Length of Turn (MLT); and Utterances per Turn. These provided insights into the division of the supervision 'talk' between supervisors and students, and were indicative of the domination of supervisions. On the whole, students tended to make fewer contributions which were shorter in length, and tended to make a single 'utterance' per 'turn' rather than engaging in extended talk.

- Textual Analysis (Lexical Variety Measures): Lexical variety (the 'richness' of language) is sometimes regarded as a proxy for conceptual understanding. We calculated Segmented Type-Token Rations and 'D' values for supervisors and students; this revealed some notable results - in some supervisions these values were similar, while in others there was a wide variation between values obtained for supervisors and students.

- Textual Analysis (LIWC Cognitive Mechanism Analysis): The LIWC (Linguistic Inquiry and Word Count) analysis system groups over 2300 words and word stems according to a multi-dimensional category system. We used a custom piece of software (written in Perl 5.8) to parse and stem words in the transcripts before looking for matches for terms within the 'cognitive mechanism' families: 'cause', 'insight', 'discrepancy', 'inhibition', 'tentativity' and 'certainty'.

These approaches represent possible approaches which could be used to:

- illuminate further patterns identified in the course of qualitative analysis

- suggest hypotheses and questions for further investigation through qualitative analysis

- provide measures of change in small-group practices, such as different levels of student engagement or different patterns of teacher-student and student-student interaction

Impact, Engagement and Application

This analysis has proved useful in a number of ways:

- It provides insights into the range of teaching and learning strategies employed by teachers in small-group teaching and learning environments

- It can be used in association with interviews and focus groups (with both teachers and students) to help understand how concepts and commitments are operationalised in practice

- Video and selected analyses can be used as the focus of subsequent interviews, discussions and reflexive activities with original participants

- Video and selected analyses can be used as the focus of training activities for other teachers