

# **Call for Submissions to the Verbal Data Analysis Workshop: Introducing Geisler's Systematic Coding of Text, Talk, and Other Verbal Data**

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## **Background introduction to interaction analysis**

Educational research has a long tradition of qualitative study, using interviews, reflections, blogs, reports, case studies, and observations to understand phenomena related to teaching and learning. Researchers could hold a belief that qualitative data are associated with “words rather than numbers” (Miles & Huberman, 1994, p.1), and the results of textual analysis tend to be quotes and summaries of utterances. On the contrary, a verbal data analysis method could transform text, talk, and other verbal data into quantities and visualizations, helping researchers explore the text content themes and relationships, and the change patterns over time to contribute to describing and improving teaching and learning.

Geisler's (2004) verbal data analysis method provides a step-by-step guide to master this protocol, which applies to a wide range of verbal data sources. This method could provide educational researchers means to more meaningful results from verbal data, particularly computer-supported collaborative learning (CSCL) where significant amounts of data are automatically logged on a computer or server.

One example of our applications of this method is to explore the youth learners' posting behavior on a social network forum (SNF), *Edmodo*, and its relationship to metacognitive acts. Metacognitive acts are a key to academic learning outcomes (Flavell, 1979). Exploring learners' posting behavior is the first step to understand their relationships with metacognitive acts and metacognition prompting strategies to enhance appropriate behavior and reduce inappropriate behavior later in the practice.

## **Description of transcription methods and useful tools**

To use the verbal data analysis method, all data should have been transcribed in a written text format. This method requires inexpensive software only: Microsoft's *WORD* and *EXCEL*. The text segmentation technique in Microsoft *WORD* and formulas in *EXCEL* can save researchers hundreds of hours of time coding and conducting the analysis.

The data of our study were youth learners' and adult facilitators' posts on an SNF, *Edmodo*, which served as a CSCL platform. We not only want to see the contents of talk, but also the posting behavior and evidence of metacognitive acts to propose means of improvement in later practice. Therefore, we looked at the number of youth who posted, the average number of posts per each youth learner, the average length of each post, the number of initiative posts, the number of reply posts, the average length of initiative posts, the average length of reply posts, the average word counts of minimal meaning units, the contents of students posts, the frequency of the contents, the change pattern of the contents, the contents of facilitators' posts, the strategies of facilitators' posts, and the impact of different strategies of facilitators' posts on learners' posting behavior.

## **Description of the planned structure of the data session (Geisler, 2004)**

The workshop will walk through the twelve steps of the verbal data analysis method.

- Step 1: Anchoring the Literature. By reading foundational and recent work in your field of interest, the investigator becomes familiar with the topic and variables to be analyzed. Anchors include contribution, interest, data, claims, categories, and patterns.
- Step 2: Designing the Analysis. This step involves proposing research questions, deciding the focus of analysis, building a descriptive framework in comparison, and getting representative sample cases.
- Step 3: Segmenting the Data. This step introduces the types of language units, as well as unit type in specific data, such as conversations, interviews, text, and electronic interactions. Then use the techniques in *WORD* to break down the units and transform the data into *EXCEL*.
- Step 4: Coding the Data. This step begins to develop coding dimensions, definitions of each dimension, and examples of each dimension. The units in *EXCEL* are to be coded according to the codebook. The coding process may elicit refinement of the codebook.
- Step 5: Achieving Reliability. This step requires recruiting an objective second coder who is not familiar with the study to code 10% of the data or conduct 1 hour of coding (whichever is less), to calculate the reliability. Revise and redo this step until the simple reliability reaches 0.8 and Kappa value of 0.7.

Step 6: Calculating Frequency. The formulas in *EXCEL* can help calculate the frequency of each coding dimension.

Step 7: Seeing Patterns of Distribution. The frequency tables in step 6 can be transformed to distribution figures.

Interpret the patterns from the figures.

Step 8: Exploring Patterns Across Dimensions. This step allows that the investigator examine how one dimension of data is associated with another dimension.

Step 9: Following Patterns over Time. This step is to examine the change patterns of different aspects of the data across time, across contrast, and across dimension.

Step 10: Evaluating Significance. The variations in patterns across time, contrast, and dimension can be tested with Chi Square tests.

Step 11: Detailing Results. This step is to identify the necessary details of the results and elaborate them in full length.

Step 12: Presenting Results. This step is to create well labeled but concise visual representations of patterns in your data.

## Examples of results

The outcomes of our study included the number of youth who posted, the average number of posts per each youth learner, the average length of each post, the number of initiative posts and reply posts, the average length of initiative posts, the average length of reply posts, the average word count of minimal meaning units, the contents of students posts, the frequency of the contents, the change pattern of the contents, the contents of facilitators' posts, the strategies of facilitators' posts, the impact of different strategies of facilitators posts on learners' posting behaviors. The results of these analyses produced tables of coding dimensions, figure of frequency of the contents, figure of change patterns, figure of comparison of learners' posting behaviors versus facilitators' posting behaviors. Below are some example results figures.

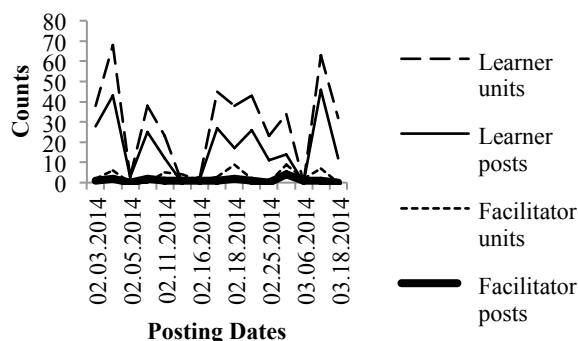


Figure 1. Learner versus facilitator posting count

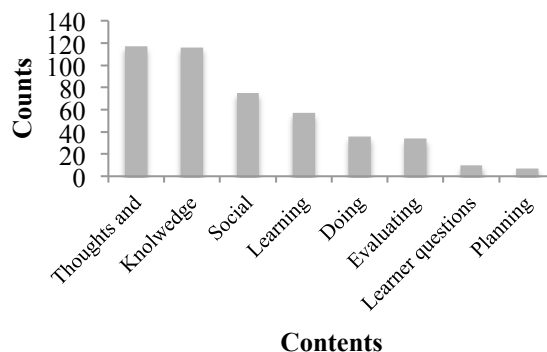


Figure 2. SNF posting content and count

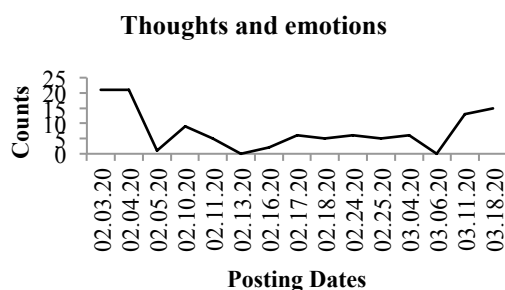


Figure 3. Change pattern of thoughts and emotions

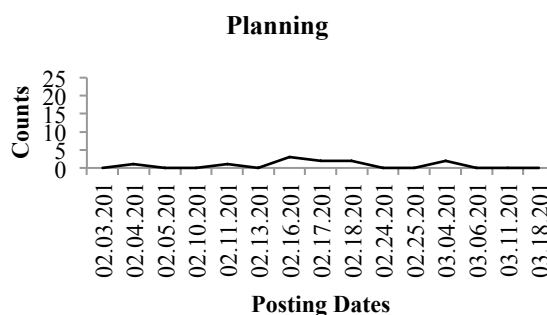


Figure 4. Change pattern of planning

## Notes for participants

The duration of workshop is half a day. The expected number of participants is from 3 to 12. The session will be given in a mixed format of lecture and hands-on exercise. Excel templates will be provided. Participants are encouraged to bring their own laptops to practice the skills. We will provide data for illustration and practice, and participants are welcome to bring their own data to practice if time allows. Participants are encouraged to send in a 2 page paper (in CSCL format) to introduce the research topic you are interested in, what kind of verbal data you have or will collect, research questions you would like to explore, and some preliminary analysis you have conducted or results to be expected. The 2-page paper is due on May 7, 2015. Please send the paper to Lixiao Huang at [lhuan11@ncsu.edu](mailto:lhuan11@ncsu.edu).

## The organizers' experience in facilitating data sessions

Dr. Michael A. Evans is experienced in verbal data analyses (Evans et al., 2011), and organizing workshops and symposia at CSCL. [Michael.a.evans@ncsu.edu](mailto:Michael.a.evans@ncsu.edu), Department of Curriculum, Instruction, & Counselor Education, North Carolina State University, USA

Lixiao Huang has experience in applying the verbal data analysis method to analyze reflection journals on *Tumblr* (Huang et al., 2014) and conversations on *Edmodo* (Huang & Evans, 2015) for educational research. [Lhuan11@ncsu.edu](mailto:Lhuan11@ncsu.edu), doctoral student, Human Factors and Applied Cognition, Department of Psychology, North Carolina State University, USA