Annotated Bibliography
Using Cogenerative Dialogues to Enhance the Understanding of Survey Data

My research work for my second education course focuses on determining the value of the time spent on time-consuming inquiry activities in the classroom. It has been an ongoing struggle for me (as well as my colleagues, and, I have no doubt, all public school science teachers in New Jersey) to balance the use of inquiry activities – which are, in my experience, much more effective at conveying content to students than lecture – with the very demanding content requirements of the state of New Jersey.

I began my research project by surveying science content teachers in my district to collect some data about the time spent on alternative instructional methods and their general impressions on their effectiveness in the classroom. I have used this data to generate a short paper discussing the results of that survey and my plans for taking advantage of what I have learned.

The next step of this research is to arrange and schedule cogenerative dialogues with some of the respondents to the survey and their current (and possibly former) students. The intention of these dialogues is to ascertain some of the details about the time-value of inquiry practices in the classroom, as compared to traditional lecture. I also hope to acquire a sense of the students’ opinions of inquiry and lecture. Ultimately, all of this data will be used to develop a plan to better integrate inquiry into the science classroom.

It is important to note that prior to the MCE program, I had no experience conducting classroom research of any kind. Pursuant to this handicap, I have reviewed and annotated several articles about the use of Likert-scaled surveys and cogenerative dialogues so that I could develop a foundation for conducting my research.

Article annotations:

1. **Likert Scales and Data Analyses**, by I. Elaine Allen and Christopher A. Seaman
   
   This is a brief article that introduces the basics of the Likert scale, its purpose, and some very basic instructions for treatment and analysis of the data collected from the test subjects. Of particular note is the important of approaching the data analysis by examining the ordinal nature of the data, rather than the common sort of parametric analysis (mean, median, and mode, for example). Properly coding the data is a critical aspect of this process.

2. **Likert Scales: How to (Ab)use Them**, by Susan Jamieson
   
   This article, similar to the one above, indicates the important of analyzing data from an ordinal, rather than a parametric, perspective. This article includes discussion about the intervals between values on a given Likert scale. A specific statement caught my eye: “The response categories in Likert scales have a rank order, but the intervals between values cannot be presumed equal” (1217). There is a frequent belief among researchers that the intervals are in fact equivalent, and this presents a new challenge to the Likert survey portion
of my research. If professional, expert researchers have difficulty understanding the intervals, it follows that “inexperienced” students may, as well. It will be important to consider this as my research progresses (or overcome it, if possible).

3. **Learning to Teach Through Coteaching and Teaching Education**, by Kenneth Tobin

A portion of this article is dedicated to the value of using cogenerative dialogues for the purpose of leading “to resolutions for enacting teaching in particular ways, rationale for events and practices, and commitments to practices that emerge and conform to particular values and ethics” (139). He goes on to say that “If those who participate in a dialogue can negotiate a shared commitment to all resolutions then there seems a greater likelihood that the unfolding practices in a classroom will be anticipated, become part of successful interaction chains, and enhance progress toward enacting desired changes” (139). I find that these statements sum up the intentions of my research proposal.

It is worth noting that the first portion of this paper, which discusses the use and implementation of coteaching as a learning and teaching technique, has some relevance to my topic, since it is my expectation that I can receive feedback from other teachers using the materials written for this study, and the possibility of “swapping” classes for the purpose of observing other students using the same materials.

4. **Who Gets to Ask the Questions: The Ethics in/of Cogenerative Dialogue Praxis**, by Ian Stith & Wolff-Michael Roth

This article, while it includes a few relevant bits about technique and approach for cogenerative dialogues, has much greater value as an instruction manual for the implementation of cogenerative dialogues as a research tool. Since students are, for want of a better term, inexperienced in matters of research, and because they are minors, many careful considerations must be made when approaching students for feedback. It is important that the students are coached on the appropriate ways to phrase their responses (since everything they say is “on the record”), but to do so in a way that does not compromise or, worse, bias those responses.

It is human nature to say or discuss what comes to mind, and so students (as well as teachers) have the potential to change the course of a discussion as a sort of natural progression of the discussion (as opposed to intentionally skirting an uncomfortable or undesirable thread of the dialogue). Qualitative research is by its nature bulky, and limiting the amount of data to sort through to a minimum is critical to an efficient analysis of the research activities.

There is a balance to be maintained, however; the whole purpose of a cogenerative dialogue is an opportunity for students to express themselves (and, in the case of my research, something they almost never get a chance to comment on). The discussion needs to be focused, but without making students feel as though points that are important to them are not important to the discussion.
Also, ethical considerations such as the fact that the researcher is a participant, the responsibility to include as diverse a group of participants as possible, and the responsibility of the researcher to equally consider unexpected outcomes are discussed in this article.

5. Learning-Goals-Driven Design Model: Developing Curriculum Materials That Align With National Standards and Incorporate Project-Based Pedagogy, by Krajcik, McNeill, and Reiser

Ongoing efforts to reform science education have resulted in a demand for new instructional models and new learning materials in the science curriculum. Pressures from local, state, and national governing bodies have impressed the need for inquiry in the science classroom upon us all, and the needs of modern industry and technologies are driving the content and skills taught at the college level, which in turn trickles down to the high school science classroom as we prepare our students to attend these very same colleges.

This paper discusses a new model for instruction in the science classroom that makes an effort to address all of these concerns and more. It addresses the tensions between standards, pedagogy, and content. The general idea is taking the classroom in the direction of something called “Learning Goals” rather than content goals, and addresses this concept by approaching it in several stages.

6. The Role of Reading Comprehension in Responses to Positively and Negatively Worded Items on Rating Scales, by Weems, Onwuegbuzie, and Collins

It is no secret that one of the greatest difficulties students have in the classroom (not just in the science classroom) is the ability to decode and properly understand and solve word problems. Recent statistics have shown that SAT scores are greatly impacted by a lack of ability to solve work problems, and that this happens not just in math but in all areas. Ultimately, it seems that reading comprehension is the culprit, and this can create a serious problem for my Likert-scaled feedback questionnaires.

This article discusses how student responses to Likert questions that ask the same thing but are worded differently have a tendency to vary, especially when the difference is a positively worded presentation versus a negatively worded presentation. The paper is very well summed up by this abstract quote from it: “Recent evidence suggests that the use of scales with a mixed format can adversely affect the psychometric properties of scales. In particular, the mean item response to the positively worded items has been found to be statistically and practically significantly different than the corresponding mean item response to the negatively worded items with the same scale. Because positively and negatively worded items may evoke different responses for some individuals, it is likely that reading ability plays an important role in the quality of responses to scales with a mixed format” (Weems, 3). The article goes on to offer a great deal of support for this idea, and requires that I carefully consider the presentation of my Likert items.
7. **Student Ratings: Validity, Utility, and Controversy**, by James A. Kulik

   This article discusses whether or not student ratings (in the context of teacher evaluations) are genuine and useful, and the controversy surrounding them. The obvious goal, Kulik says, is to use student ratings to improve the teacher, the classroom, and the overall learning experience. Kulik is careful to define the context of student ratings very carefully, and goes on to explain how they may or may not aid in achieving their intended goal. Kulik’s approach involves citation of relevant statistics, as well as a decidedly psychological approach to his explanation. Overall, his conclusions are sound, and offer some things to consider when evaluating the feedback I receive from my students during my research effort.

8. **Transforming an academy through the enactment of collective curriculum leadership**, by Ritchie, Tobin, Roth, and Carambo

   The portions of this paper that are of relevance to me are those dealing with cogenerative dialogues. These offer examples of the results of cogenerative dialogues with students, as well as a number of tips and analyses regarding the use of the results of each of those.

9. **Re/Making Identities in the Praxis of Urban Schooling: A Cultural Historical Perspective**, by Roth, Tobin, Elmesky, Carambo, McKnight, and Beers

   This paper also offers some brief sections on the impact of cogenerative dialogues and their effect on the involved students.

10. **A guided inquiry general chemistry course**, by Farrell, Moog, and Spencer

   In this landmark paper, the POGIL style guided inquiry format for general chemistry is first presented (although, interesting, the acronym POGIL does not appear in the paper at all). Since the activities I will use during my research will be POGILs, I have attained this paper as a reference.
Works Cited


