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Learning to lead: Examining the moderator role in debrief conversations among professional developers

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IN DEBRIEF CONVERSATIONS AMONG PROFESSIONAL DEVELOPERS

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Abstract

This paper reports on a study wherein the author examined her own practice when moderating debrief conversations. The analysis applied a multifaceted theoretical framework from professional learning. The findings suggest that the moderator's role as it was implemented primarily arranged organizing circumstances (Spear and Mocker, 1984) provoked by her own basic psychological needs (Deci and Ryan, 2000), her mental models (Seel, 2001), and her perception of these individual attributes in others. The implications for her future practice as a moderator are discussed.

Three years ago, I became involved with the process of debrief conversations. These were meant to reflect on what we had planned and implemented as a team of educators and to critically discuss what had occurred in that learning environment. These conversations required that the team members remain on site for an hour immediately following the planned learning experiences for the day. Specifically, the team members were professional developers and the learning environment they constructed was a workshop that took place over the course of a week.

Each time I took on the role of moderator I learned something new and unexpected. There were steep learning curves at times in these on-the-job experiences. This past year, I decided that I wanted to examine my practice more analytically in order to determine what might be transferable from my practice (to my future practice, to others in similar situations, to a new leadership position I am taking on, etc.). This paper reports on the action research project that followed that decision.

My perspective on this research is framed by the idea that theory when applied to practice results in the opportunity for research, and that all of this takes place within a context of policy. As I have been shaped by my environment, my encounters with others and my experiences over

the past three years, I toiled first with the domains of research and practice; adding in policy and eventually theory to complicate things further. I leave the enormity of this multiyear thought process for now, and I lovingly represent my conclusions in a simplified equation:

[Theory + Practice → Research] * Policy

Based on this idea, action research is both my conceptual framework and my methodology for this study. As a researcher trained at the academy, my action research is affected by the literature to a greater extent than may be considered typical if one normalizes to the genre rather than to the researcher. I incorporate peer reviewed literature early on in establishing my theoretical framework. I reconcile my findings with this framework rather than with external resources. I include a detailed examination of the analysis that unfolded while applying the theoretical framework to a particular part of the data. In the end, I revise the framework and use it as the basis to suggest how my findings may be useful to others. Along the way, I employ thick descriptions of my methods and analysis.

I begin with an historical perspective of my role over the past three years and the individuals involved with me in my practice. I then present the research question and methods, including the theoretical framework.

My Changing Role in a Professional Development Program

In the summer of 2005, I began working with a grant-funded, four year professional development (PD) program run by an informal science institution (ISI) in the Northeastern United States. Working directly with the Program Manager, my role was to follow up with participants (at that time, about 120 individuals total) after they had attended a one week workshop on inquiry as a way of learning science in formal K-12 educational settings.

In this capacity, I found myself dismayed at how few individuals opted for the follow up experiences. I thus initiated a participatory-oriented evaluation (Fitzpatrick, Sanders, and Worthen, 2004) in which I investigated the barriers and alternatives to requesting support from the ISI after participating in the PD experience. I concluded that participants expected the ISI to primarily offer lesson plans and workshops, after which they looked to their respective principals and districts for ongoing support during the implementation of ideas and for direction on opportunities for how to continue their learning (Harkins, 2007).

My role changed in two distinctive ways based on the result of those findings, the recommendations from our external evaluator and the growing needs of the program. First, my focus on follow-up with PD participants shifted to emphasize email communications and to a "Follow Up Conference" scheduled at the end of each school year (Harkins, David, Juliano, and Meyer, 2009). Second, I began working with the PD staff (who are called "facilitators") who implemented the program.[1] My involvement consisted of three phases: sitting in on and contributing to program planning meetings in the months leading up to the program, observing the implementation of the program, and debriefing with the facilitators at the end of each day. In essence, my role had shifted from following up *with participants* in the PD program to focus on the professional learning of *the facilitators*.

The facilitators

While the PD program is managed by an ISI staff member, about ten public school educators work on a contracted basis with the program during summers and vacations as facilitators. Under the grant-funded program which operated from 2005 – 2008, facilitators worked in teams of 2-4 to implement weeklong professional development experiences for

[1] Hereafter in this paper, I always refer to myself as moderator, the people in the debrief conversations as facilitators, and the attendees in the professional development program as participants. My use of the term participant, then, does not refer to the object of this study.

participants. Each week hosted about 24 participants and typically included teachers, administrators, consultants and informal educators. Approximately 22 weeks of professional development were implemented as a result of the grant-funded program.

The job of a facilitator has been multifaceted and has required the command of knowledge regarding science, science learning and professional development. Most importantly, in order to implement an immersion learning strategy, the facilitators have had to grow comfortable with not answering questions immediately in order to give their participants the chance to learn the ideas through experiences in the workshop week. More details about the program that is administered by this ISI can be found in Appendix A.

During the weeklong workshops which they led, each team of facilitators has spent about an hour debriefing at the end of each day and reconsidering the schedule for the rest of the week. This debrief time has been the most direct way which the ISI has planned for the professional development of its facilitators.

My experience as a moderator

My role during these debriefs has been to guide a reflective conversation among the facilitators in which they determine what their participants' needs are for the next day. Up until the spring of 2008, these sessions were used to focus primarily on the workshop participants rather than on the learning of the facilitators. However, ISI staff realized that the debrief sessions had the greatest potential to be a pivotal learning experience for facilitators. The summer PD season of 2008 offered a chance to reinvent the debrief session and define it in the context of the overall program.

I have always approached each ISI PD session with great anticipation. As I have observed during the course of the day, I have looked forward to and anticipated the conversations

at the end of the afternoon wherein the facilitators debriefed the experience. I cherished the opportunity to consider our profession with each other and to confront all the ideas inherent in leading colleagues in professional learning that defines our practice. I believed there was dignity and empowerment in centering our post-implementation conversation with each other in our formal space together, rather than marginalizing it to the hallways or the passing chat before heading home and leaving the work that we had done together. I also valued that the knowledge created during the debrief session came directly from the facilitators' personal experience with the ideas. The debrief time seemed akin to successful day-trading in the stock market: there was an initial intellectual investment and a burst of activity wherein that investment capitalized. The debrief was a formal time where the withdrawal could be made and the wealth spread around so that all could benefit.

However, I have also noticed a great deal of caution and trepidation in myself when it came to the debrief. When I was first approached with the idea of debriefing facilitators in the spring of 2006, I was intrigued by the concept but had little to go on in terms of how to "debrief" anyone in this capacity. After comprehensive literature searches of the topic, I came to appreciate how debrief practice is fairly unique in the educational world, and how written accounts of it are even more rare.

While seminal texts have suggested that a discussion occur among leaders after they implement PD, these references fail to suggest how to take part in or lead these conversations *in general*, nonspecific terms to the learning strategy that was implemented (c.f. Loucks-Horsley, Love, Stiles, Mundry, and Hewson 2003). This paucity of references and resources was no comfort as I tried to stay more than "one step ahead" of the facilitators. I struggled to understand what was occurring in the debrief, how it functioned in the overall program, and how to

maximize its potential. I consistently tried to "gain ground" on these ideas through documenting, discussing and reflecting upon my own experiences as a moderator. Until this study, however, that effort has lacked organization.

I have had many questions about the debrief experience in general as I have struggled to learn to lead within it (c.f. Harkins, September 2007). At the beginning of the summer of 2008, I felt the most pressing questions were those that dealt with me and my practice as a moderator during these discussions. Specifically, without first examining myself, I felt that I could not begin to examine any conclusions that might be reached in terms of others or in terms of general debrief practice in education. In undertaking this study, therefore, I sought to examine the "lens" through which I saw and experienced the debrief as a moderator in order to learn from my practice and to prepare to make a contribution in the future regarding "how to moderate debrief conversations."

The following study makes the assumption that debriefs (*organized* and *pre-planned* conversations which take place after one leads professional development experiences for others) are a place in which professional learning (by the facilitator) occurs. In order to warrant this idea, and for the purposes in this study, one must also assume that the terms "professional learning" and "professional development" inherently mean the same thing.

Research question

As I prepared to enact the role of moderator within debrief conversations this past summer, I applied theory into my practice. It is impossible to prioritize which theory was most prevalent, indeed, each one became a predominant part of my practice at some point in time during the two weeks in which this study took place. Chronologically, I first applied self determination theory (Deci and Ryan, 2000) and organizational learning theory (Sessa and

London, 2006) into my practice as I conceptualized the team of facilitators as a group in which knowledge is created and transferred. Next, legitimate peripheral participation theory (Lave and Wenger, 1991), and the concept of novices and experts specifically, was put into practice as I made sense of interactions between facilitators with varying lengths of tenure with the ISI. The conception of how beliefs play a role in professional development design (Loucks-Horsley et al, 2003) emerged as useful at the beginning of the second week. Lindeman's five key assumptions found in Knowles, Holton, and Swanson (1998) also would emerge as useful. As each of these theories was employed and more fully realized in my own practice as a moderator, I shared insights with the facilitators and divulged the rationale behind the courses of action I had taken in our discussion.

In essence, I began to sense that the theory applied to my practice precipitated the opportunity for research. Additionally, I felt that this was taking place within a context of policy, the required debrief time each day. From my perspective, there was no other option but to commence a research study into my practice as I entered the summer PD season. So, I initiated a participatory action research study in the midst of applying theory-to-practice in order to investigate the following question: In my role as a moderator of debrief conversations, to what extent do I model or construct the ideal environment for professional learning?

Methods

In order to inform this question, I planned to examine my practice within the context of debrief conversations with facilitators. I relied on Action Research methodology as described in *The Action Research Dissertation* (Herr & Anderson, 2005) and *Educational Research* (Creswell, 2008) to design my study. As a participant in the research setting, I recognized that I

had a stake in the success of the program and in my success as a moderator. I viewed the prospect of doing research as conducive to bringing about these results.

First, I conceptualized my role as a moderator in terms of adult learning and organizational theory (refer back to the previous section).[2] In order to capture the authentic experience of moderating debrief conversations, I decided that I would digitally record what I said and reflect on it afterward during transcription, in analytical memos and in artifacts generated during my work. In order to digitally record my voice, I wore a microphone and used a setting on my digital recorder that would instantly begin recording when I spoke, and would immediately pause afterward.[3]

Then, I informed the facilitators (seven different individuals total) of my study design. I explained that I would record and analyze my speech from our conversations. I took a number of steps to ensure them that I was not examining their performance and to encourage them to have the most natural conversations as possible, as anything less would alter the quality and efficiency of their work together.[4] For instance, I explained that if their utterances were inadvertently recorded, they would not be considered as data in my analysis. I also offered to allow them to view the transcripts I generated, at their request. I did not record either of the Monday conversations in order to give facilitator's a chance to process the idea and follow up with me personally with any questions.

Therefore, recordings were made Tuesday through Friday of each weeklong workshop. A total of 13 debrief moderations were digitally recorded. The first eight of these were transcribed

[2] Notably, these pre-conceptualizations changed.
[3] This method of recording proved highly effective. I was surprised at how sensitive the recorder was to my voice, and my barely audible "a-huhs" while it failed to record the words spoken by others. I attribute this to the sensitivity and quality of the microphone, which was positioned immediately in front of and below my mouth.
[4] My hunch is that the conversations would have been affected to a much greater extent if I set out to record our discussion as a whole.

and analyzed within this research study. These eight took place over the course of two weeks in early July. The same workshop was being implemented during this time with two different teams of facilitators (one person facilitated both weeks). In this regard, the transcripts examined in this research were of debrief conversations which were considering the same workshop and essentially, the same activities. The transcripts left unanalyzed were for two different workshops.

While I had planned to transcribe the recordings each evening after work, I was only able to complete some of the transcripts during this time. Notably, I avoided transcription for several reasons. First, I was distracted by more immediate work that was necessary for my responsibilities in the program (i.e., a planning meeting that occurred). Second, there were several debrief conversations which I wished to avoid until after the week was over. Instead, I choose to go through reflective exercises in order to identify what it was in my practice that could be improved or how I could improve circumstances in the workshop through my role as a moderator. Additionally, the process of transcription induced a reflective state of mind. These reflections invariably led me to the conclusion that some action must be taken, which took the place of transcription during the evenings. For instance, in the middle of a transcript during the first week, I stopped and composed an email to the facilitators of the second week.

All of the eight debrief moderation transcripts were completed in the fall. During transcription, I used bold lettering within the transcribed text to indicate first cut codes, annotations, and as reminders of what I had been thinking at the time the words were spoken. In the second stage of analysis, I applied a modified theoretical framework.

Theoretical Framework

The theoretical framework used in the analysis was based on the Trio Model of Adult Learning (see Figure 1). I had become familiar with this model through a course in Professional

Learning that I had taken with Dr. Barry Sheckley at the University of Connecticut. Containing a wealth of theory, the Trio Model is a general way to visualize how to make professional learning most effective. As a whole, the model illustrates that "professional learning is most effective when it: (1) enhances the complexity of mental models; (2) employs a multifaceted, experience-based process; (3) engages in an environment that supports and challenges learning; and (4) commits to a long-term process" (Sheckley, 2007).

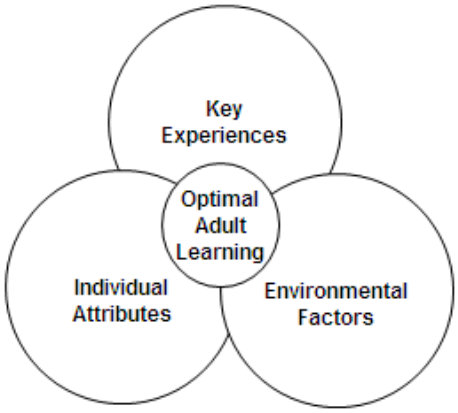

Figure 1. "According to this model, optimal adult learning occurs when the process (1) focuses on key attributes of the learner; (2) engages learners in key experiences that trigger the cognitive processes that enhance learning; and (3) embeds learning in an environment that supports and challenges learners. If any one of the three components is missing, the process is less than optimal" (Sheckley, 2007). Figure reproduced based on Sheckley, Kehrhahn, Bell, and Grenier (2007).

In the process of learning the framework, I modified it in order to specifically examine debrief conversations as a "key experience" in professional learning. Ultimately, I applied the Trio Model as modified and described below.

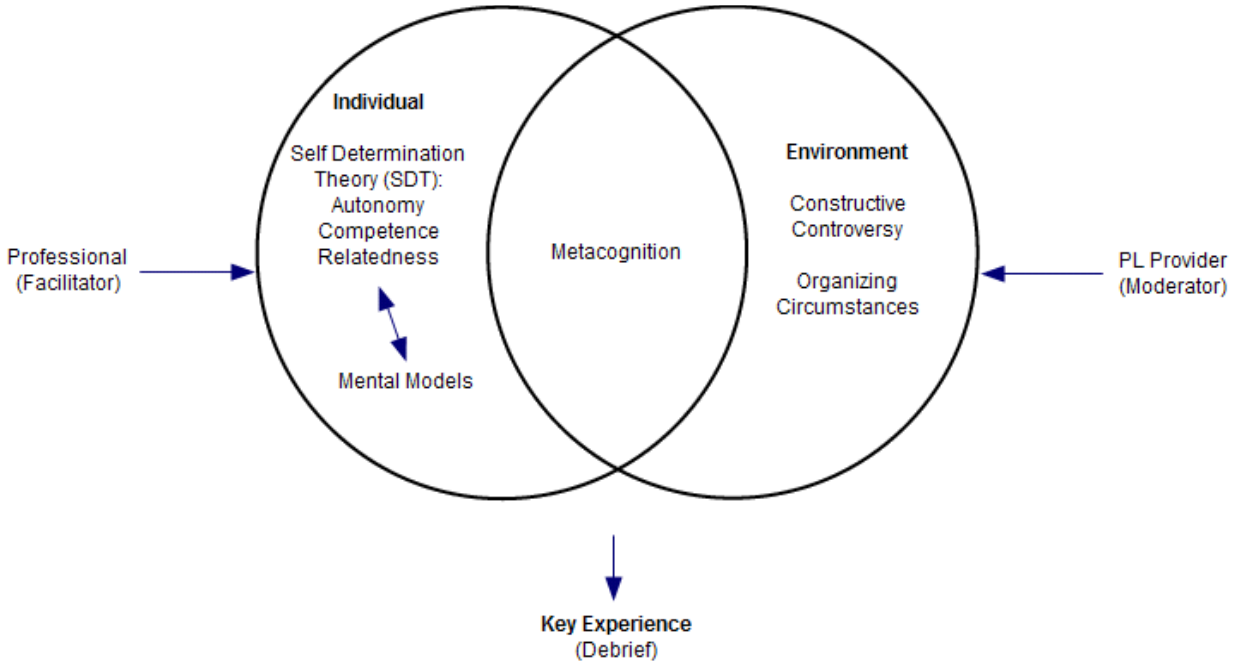

Figure 2. Modified Trio Model for visualizing the debrief as a key professional learning experience for facilitators.

In the modified version (Figure 2), the idea is that the debrief conversation itself serves as a *key* experience in the ongoing professional learning of facilitators. The facilitator enters into the conversation (on the left hand side of the figure) with established mental models and basic psychological needs. The provider, planner or moderator of the debrief approaches the conversation primarily in control of the environmental context of the facilitators. On an ongoing basis, the moderator influences and is influenced by the environment that is continuously being constructed around the facilitators during the course of the conversation. The moderator must be cognizant of individual attributes, specifically the mental models and basic psychological needs (self determination theory), of the facilitators and herself. If environmental factors engage facilitators' individual attributes, it is possible for metacognitive thought to occur (area of overlap in Figure 2). Metacognitive thought can be vocalized by the moderator in order to model the process for facilitators and to engage their mental models within the environment, thus

provoking metacognition by facilitators themselves. Further description of each of the five components of the modified Trio Model is described below.

Mental Models

Seel (2001) defines mental models as "cognitive artifacts, i.e. inventions of the mind that represent, organize and restructure the subject's domain specific knowledge in such a way that even complex phenomena of the (observable or imagined) world become plausible." They are constructed as needed (and persist at varying lengths of time) to give structure to the external world. In essence, mental models are the mind's way of ordering incoming information in relationship to previous experience. These "former experiences represented in mental models 'tell' the individuals what they may perceive" (Seel). Therefore, the process of constructing mental models is limited by those currently in operation (cf. Hofstader, 2001) as well as the situation in the external environment. Mental models (MMs) have a dual purpose in that "they represent human knowledge and they generate subjective plausibility with regard to the external world and its situations" (Seel). In generating plausibility, MMs meet the need for *competence* in relation to external information. In representing knowledge, MMs meet the need for *relatedness*. In allowing individuals to command a situation with a mental explanation which was self-formulated, MMs meet the need for *autonomy*. Therefore, the creation of mental models is one way in which individuals are able to meet three basic psychological needs which are identified in Self Determination Theory (Deci and Ryan).

The implication for professional learning is that when professionals find themselves in a potential learning situation, their mental models play a crucial role in negotiating the incorporation of new knowledge into their worldview. To that end, experiences designed for professional learning must engage individuals' current mental models and create the need for

their transformation. The creation of this need must articulate with and simultaneously meet the individual's need for autonomy, competence, and relatedness.

Endsley (1997) suggests this extensive set of mental models may "circumvent" other limitations that exist for the learner, essentially allowing "for decision making on the basis of incomplete information and … uncertainty." This means that experienced learners can "fill in the blanks" when it comes to situations they have not previously had direct experience with based on their set of mental models. This ability to adapt to a new situation given the mental models in existence is not only limited to those with a wealth of similar mental models from the past, it has also been documented in newcomers who are not constrained by previous experiences under the same conditions (Stark, Gruber, Rankl, and Mandl, 1998). In essence, individuals may employ a mental model from a dissimilar experience in order to understand a situation (i.e., create a metaphor).

Metacognition

Key experiences in one's professional learning might occur casually or informally (Enos and Kehrhahn, 2002), such as during actual job experiences. Regardless of the level of formality or planning, key experiences for learners allow them to focus on their mental models in relationship to extrinsic factors (such as new ideas, feedback, situations, and decisions). If learners use metacognition as a learning strategy during an experience, there is greater likelihood that the increased knowledge will transfer to practice (Ford, Smith, Weissbein, Gully, and Salas, 1998). Metacognition plays a crucial role in transforming the mental models of individuals. Metacognition unifies individual attributes with environmental factors and paves the way for meaningful learning to occur.

Ecological factors

Tangible factors such as space, comfort, colleagues and time create part of the environmental context for the facilitator in debrief conversations. More elusive environmental factors are organizing circumstances (Spear & Mocker, 1984; Sandholtz & Scribner, 2006) such as feedback (Dubner & Levitt, 2006; Ericsson & Charness, 1997), and support (Saylor & Kehrhahn, 2001; Sandholtz & Scribner, 2006). Also elusive are interdependence (Gully, Beaubien, Incalcaterra, & Joshi, 2002) and interpersonal relationships, including team dynamics and constructive controversy (Alper, Tjosvold & Law, 1998). Even though they are somewhat more difficult to identify and assess, these factors create the fabric of the professional "ecology" in which adults operate. The placement of the individual in relation to these elusive and extrinsically created factors plays a crucial role in the professional learning of adults. The extrinsic factors which combine to form the context for adult learners has a significant effect because these factors enhance, nullify, expedite or limit the learning of individuals and teams. Consequently, focus by professional development planners on enhancing the environment and visualizing the professional in context, has the potential to yield a greater impact on individual learning than focusing on the individuals directly (Gully et al., 2002). Two contextual (ecological factors) will be considered in this study: organizing circumstances and constructive controversy.

Organizing Circumstances.

The substantive idea of organizing circumstances if that self-directed learners are presented with a menu of available choices for learning which have been defined by their immediate context. Whether learners are conscious of these circumstances or not, they respond to them in the way that they learn and in the choices that they make. In their articulation of organizing circumstances, Spear and Mocker (1984) propose that:

> …self-directed learners, rather than preplanning their learning projects, tend to select a course from limited alternatives which occur fortuitously within their environment, and which structures their learning projects… choice or free will takes place within an area of circumstances which, at the same time, provides for but also limits alternatives and actions. The circumstances can be said to have an organizing function, and any behavior must be understood within the existing context…Organizing Circumstance, rather than preplanning by the individual, is the directing force behind much, perhaps most, self-directed learning . . . (Spear and Mocker, 1984)

The organizing circumstances concept applies to the debrief sessions in terms of the moderator because I am exercising self-directedness in context based on what I perceive. My dialogue can be analyzed to determine what potential organizing circumstances became part of the environment for the facilitators based on what I said. The possible effect this had on the debrief conversations can be considered.

Constructive Controversy.

In methods parallel to those applied with self-directed participants in Spear and Mocker's study, Alper and his colleagues focused on self-managing teams and the concept of *constructive controversy*. Alper, Tjosvald, and Law (1998) contend that while independent work has the potential to create "disinterest or indifference," interdependence and common goals increase productivity. The most effective way to do this was found to be constructive controversy, which is made possible by "open minded discussion of opposing positions" in teams whose members have like-minded goals (Alper et al.). Consequently, the avoidance of controversy or the lack thereof has the potential to be detrimental to a team's effectiveness.

The analysis in this research study assumes that common goals were in place and that interdependence existed among the facilitators. I also assume that the facilitators are self directed

learners.[5] Therefore, the analysis focused specifically on the constructs of organizing circumstances and constructive controversy.

Analysis

Transcription was done on a computer using Word, Dragon Speaking Naturally dictation software and Express Scribe playback software. An NVivo project was created to house all of the transcript data files and to develop the coding scheme for the analysis. The procedure for coding in NVivo described in Basit (2003) guided the decisions made during the analysis of the debrief transcripts.

The codebook began with nine codes based on the theoretical framework. All codes were treated as "free nodes" in NVivo in order to reflect equivalency and enable maneuverability among codes. Initial codes were based on the five components of the theoretical framework. Not all passages were coded and some passages were coded more than once. As need arose, new codes (NVivo free nodes) were developed during the process of coding.

NVivo allows for the code to include a description. Essentially, the free node window in NVivo was the codebook for the data. There was no need to substitute abbreviations for the actual code and what it meant. For instance, one code was originally "Mental Model- mine." However, this had to be modified to become "Mental Model- mine in use" in order to differentiate it from "Mental Models- My reference to those of participants." In both, I was attending to my mental models, but in the former I was using them directly in my speech (perhaps without realizing it at the time) and in the latter, I was essentially building a mental model based on those that I perceived from participants in the PD. The flexibility of NVivo allowed for continual clarification and explanation as to what the codes meant, and immediately

[5] These assumptions were not made lightly. In regard to their work with the ISI PD program, they spent over 18 hours planning the course of the workshop together and have been known to spend additional time preparing in teams and as individuals each night during the week of the workshop itself.

linked this meaning to the code itself. A later stage of analysis ensured that passages were coded according to the finalized codebook.

The Hourglass Effect: Codebook Expansion, Contraction and Proliferation

According to Miles and Huberman (1994), "Coding is analysis." During the first week, additional codes (i.e., "Highlighting implications identified for future practice")were created to account for data that could not be explained by the characteristics of the existing codes from the theoretical framework. It was assumed that this data would not be analyzed since it fell outside the parameters of the study.

However, as coding began on the data from the second week, and as most passages became coded as organizing circumstances, it became apparent that the definition of that code could explain far more than was originally thought. Looking back at the coded passages from the first week, it was realized that most of these extraneous codes could actually be included within the organizing circumstances construct. As coding continued, the data solidified the concept of organizing circumstances and vice versa.

Therefore, during this stage of analysis, it was necessary to expand one construct of the framework (organizing circumstances). Once the new codes (originally considered extraneous to the process) collapsed into the organizing circumstances construct, it was easier to identify new types of organizing circumstances that presented. Eventually, 37 codes were dedicated to differentiating between aspects of this construct. During a later stage of analysis, some of codes combined into themes (see Figure 3 for a full summary of the pathway of analysis).

Results

The presentation of the analysis below begins with consideration of the two pieces of the theoretical framework that failed to manifest in the debrief conversations: metacognition and

constructive controversy. Then, self determination theory and mental models are considered in terms of organizing circumstances. As a theoretical lens, organizing circumstances proliferated as it was applied to the data set. This component of the theoretical framework yielded the most substantive findings, which are described and presented in a data display. Finally, the modified Trio model is reconsidered in light of these evidences.

Metacognition

The modified Trio model assumes that metacognition is necessary for debrief conversations to be optimal professional learning experiences. However, the practice of moderating the groups' debrief sessions proved to be an elusive way to capture evidence of metacognition. Metacognition proved ambiguous in my speech as a moderator during the debrief discussions, and it was not considered a motivating factor behind most of what I said.

Aside from conveying metacognitive thought, I also hoped to spur the facilitators toward metacognition. However, I failed to code any passages as having this purpose. This raises the following questions: To what extent should metacognitive thoughts be represented in debrief conversation? How does a moderator stimulate metacognitive thought? How does one invite the sharing of metacognitive thought from others? It is hoped that the answers to these questions can be pursued through a literature review and by revisiting this data set in the near future.

Ultimately, the lack of evidence that metacognition played a role in the moderation of the debrief conversations failed to demand further examination. Rather, the prevalence of other aspects of the theoretical framework explain the lack of metacognition. Additionally, one can imagine how tedious, threatening and bothersome it *might be* to have extensive conversation about "why we are thinking what we are thinking" in the midst of work being done.

Finally, while I failed to find evidence of metacognition in my spoken words, I strongly believe that metacognition played a role in how I made decisions about moderating the debrief conversations before and after they took place. Therefore, it is likely that evidence of metacognition on my part occurred external from the debrief conversation itself.

Constructive Controversy

There was minimal evidence of constructive controversy in my speech as a moderator. While it was different each time it arose, I steadied in my practice of it in the second week. Therefore, the data was not consistent within this construct in order to make an overall conclusion. Rather, the volatility of the data construes that I was engaging in a "learning curve" with respect to controversy. The phenomenon of controversy itself was something I was clearly trying to get a handle on within the context of debriefing. Whether or not it was constructive was a secondary consideration.

In the first week, I seemed to avoid controversy entirely or "stick my foot in my mouth" by singling out individuals in respect to behaviors and performance. I believe the main problem was that I initiated *and engaged in* controversial conversation. Once I engaged in the controversy, my role as a moderator was compromised and, in effect, I lost my perspective. For example, toward the end of the week I sought to address the concept of how their language was working to construct the environment for their participants. At one point I said: "The one thing that I wanted to mention about the facilitation was that I noticed, …there were a couple of points where you prefaced, I'm trying to find and example, ... you prefaced the activity (the experience) with what the benefit would be to them, without having them come to an understanding of the benefit themselves."

In saying this, I had meant to instigate a conversation among the team about the role of language, but it didn't take. Instead of backing off, I tried to substantiate my point, and I ended up in an awkward situation, for which I felt the need to apologize to an individual facilitator and the team as a whole the next day.

There is evidence from the second week that I adjusted in terms of moderating constructive controversy. On several occasions during this week, I attempted to initiate controversy within the group. My goal was merely to seed the idea, which may or may not be contentious, and allow the group to take hold of it if they chose. If they did not, I dropped it. If they did, I held my ground as a moderator and did not engage in the conversation except to probe for evidence or to offer substantiating evidence.

In this capacity, I sought to establish myself as a provider of data rather than as judge, and as external to the controversy. For example, in the second week, I said, "I sense that during the period of time, there wasn't a team (leading the workshop). Only one of you was up there…." This precipitated discussion among the facilitators about the reality that they had not discussed what their roles would be during this portion of the workshop. After the group had come to that conclusion, I said, "What I'm hearing is that when you have defined roles in relation to each other, you can respect one another, you can focus on the participants. If you don't have these established roles with each other, I think there might be potential for the team (mentality to deteriorate)." In this second week, I believe it was an effective strategy to stay external to any controversy that unfolded within the debrief sessions.

Finally, and anecdotally, I believe that avoidance of controversy was the norm in our debrief conversations. This could explain the erratic nature of controversy in my own speech. Because the avoidance of controversy is problematic in regard to professional learning (Alper et

al.), there are several questions which further research could explore. First, how do we learn to handle controversial conversations constructively as professionals? Second, specifically, how are educators prepared to engage in constructive controversy? Third, when is constructive controversy best situated within a plan for effective professional learning? Or, is the key to have a professional climate which is open to controversy and conducive to making it constructive and meaningful when it does occur? It is imperative to explore answers to these questions in regard to debrief conversations, especially since contention is a hallmark of debriefing in other fields and in guides to debrief practice (Stepanek et al., 2007).

Perhaps a debrief conversation at the end of an 8 hour work day is actually *not* the optimal place for constructive controversy in order for professional learning to be most effective. I do not suggest this is because people may be uncomfortable with it or naïve about how to go about it. Rather, the group may recognize that time is short and that work to prepare for tomorrow remains. As a team, they may be avoiding controversy "during the game itself" in order to avoid any negative effects on each other and, ultimately, on program participants.

In regard to controversy, there are two implications for my practice as a moderator in future debrief conversations. I originally asked: To what extent do I model or construct the ideals with the modified Trio model? First, the question needs to change to become: How do I allow for professional learning as indicated in the modified Trio model, especially in regard to constructive controversy?

The second implication is that the group should be prepared in advance that controversy may arise as part of our conversation and what my role will be in such controversial discussions (i.e., to invite controversy, to provide data, to ask clarifying or probing questions and not necessarily weigh in on either side of the issue). The ineptitude and unpredictability with which I

initially engaged in controversy as a moderator during 2008 and my eventual semblance of steadiness indicates that my practice would benefit from establishing these things in advance with the facilitators. The lack of moderation of controversy from this study's sample indicates that the facilitators themselves might benefit from knowing the theory behind constructive controversy and how it stands to benefit them as learners. Additionally, if given the chance to establish the parameters of controversy within debrief sessions themselves, the facilitators would gain ownership of the process and perhaps feel more inclined to initiate and engage in constructively controversial conversation. Within that setting, some of the future research questions that I suggested above could be investigated in collaborative action research.

Self Determination Theory

Self Determination Theory (SDT) was coded in terms of autonomy, competence and relatedness. Codes were assigned regardless of whether or not I was referring to these needs in terms of facilitators, myself, or the participants in the professional development. For instance, if I said something based on *my* need for autonomy, it was coded the same way as if I was alluding to the need of PD participants to feel autonomous. This coding scheme was necessary because I was intentionally applying SDT to my practice as a moderator. In theory, if I said anything in regard to a psychological need of others, it was fulfilling this same psychological need that I had as a moderator.

Therefore, even though at times I was speaking with the needs of others in mind, ultimately, I chose to interpret what I said as intertwined with my basic psychological needs. For instance, in the second week, I said:

> "…Before we go there, I want to look at the mission statement because we are getting to the point where we have to start reconciling decisions that we make with this, versus what has been done, what was done, who did what, who thinks

> what. This (the mission statement) is the collective mindset of our team. So, if we can start to think about reconciling decisions with this."

This passage deals with the need for relatedness. I was referring back to the mission statement that had been developed by the entire team of facilitators, to remind them they are related to others through these ideas. However, I was also saying it in order to feel related to the idea myself, to the other facilitators that I had worked with the previous week, to the program as a whole, and related to the process of the debrief. Also, in speaking these words, I was also fulfilling my need for autonomy ("…I *want…"*) as well as my need for competence as a moderator ("…we have to start reconciling decisions we make with this…").

There were times when I referred to SDT by name. I had discussed the theory with the whole team of facilitators back in the spring, so it was not a new concept for them. Referring to it in the debriefs offered a chance to highlight for them how the theory applied in their immediate prior experiences from the work day past. I also referred to the basic psychological needs directly. For instance, in the second week, I said:

> "… (The participant) knew that he knew. We all need that to varying degrees. Each of us as an individual needs to feel competent. This sounds like something for (you as a facilitator) to address with the participant, but for all of us to be cognizant of. … it feels like he has the need to make relationships between ideas in his head… He's looking for relatedness … it goes back to the basic need that we have… So it sounds like you are addressing it on an individual level but it might go back to the whole group (of participants) as well."

This passage exemplifies the intricate nature of how SDT played a role in my capacity as a moderator. All at once I am: noting the needs of a participant, attempting to relate those needs to everyone else (including the facilitators), naming the needs of the participant in order to feel that I am autonomous, related and competent. Furthermore, I identify that the facilitator has autonomy in the situation, I acknowledge her competence, and I offer that she may choose to act one-on-one or on the whole group level, or both. When I spoke to the whole group level, it was

also meant to invite the rest of the facilitators *back into* the conversation and offer them the chance to be autonomous *with* her as they relate to the situation. In conclusion, while some of these ideas are implicit and others are explicit within that passage, the interpretation above demonstrates how the basic psychological needs in self determination are intertwined in executing the role of moderator.

Themes did not emerge from the coding of self determination. The codes became the most-collapsed version of the data. If the coding scheme had been parsed to separate the allusions to the needs of participants, facilitators and the moderator, it would have reduced the complexity of the actual conversation to the point where it no longer reflected the authentic experience. For instance, the above passage would have been chopped into distinct pieces. In theory, the data could have been interpreted solely in terms of the basic psychological needs of the moderator. However, the purpose of the present study was to treat self-determination as an individual attribute of the facilitators. An inadvertent result is the appreciation of irreducible complexities within the debrief conversation.

There were two unexpected results in regard to the role of self determination theory in this study. First, I had not expected to see significant passages of my speech reflecting my own need for autonomy, relatedness or competence. During analysis, I came to realize that much of what I said was other-oriented yet self-serving. In conclusion, self determination came to be seen as an organizing circumstance within the context of the debrief conversations rather than sequestered as an individual attribute. As explained by the coded data, to reduce it would make it non-representational of the actual event.

Mental Models

Initially, there were two codes for mental models: one for my reference to my mental models when I spoke and the other identified passages which included an invitation to use mental models on the part of the facilitators. An invitation typically arose in the form of a question and was usually intended to draw on their prior experiences in classroom settings, such as when I said: "What would you do if this was a student in your class, who wanted to show that they knew something-- to have that feeling of competence?" Here, I also connected back to the basic need of competence. In inviting the use of mental models by facilitators, I was seeking to fulfill their need to relate to ideas and to each other, and my need to relate to them.

Furthermore, it almost goes without saying that in sharing my mental models, I was enacting my need for autonomy. In essence, by sharing how I was seeing the situation, I was fulfilling a personal need. Self determination and mental models took on an irreducible dynamic[6]. The passage below from the second week of debrief conversations illustrates this idea. I perceived that two facilitators were differing in their opinion of where participants were in terms of completion of an activity, and I shared how I conceived of the situation in terms of the "5E model," an instructional strategy with which we were all familiar:

> "…The 5E model is from the perspective of planning. If you know the 5E model you can do a very procedural thing. But when they (the participants) go through this experience (the workshop), they have the conceptual understanding themselves of how to enact the 5E model. It sounds like the side of the room you (a facilitator) were referring to, might be into the Extended phase (of the 5E model) that you're planning for them… I don't know if that is helpful or not. It sounds like they are entering into that (phase of the 5E cycle)."

During the coding process, I realized that I also alluded to the mental models of participants and that I modeled the use of mental models on a couple of occasions. The passages

[6] While this dynamic was foreshadowed in the modified Trio model, it was the intention of this study to separate the two and examine each in turn. This was impossible to do, as the manifestation of mental models was inextricably linked to self determination.

within this construct were frequently coded in terms of SDT or organizing circumstances, as well. Accordingly, it was concluded that mental models had a secondary role in relation to the other constructs.

The minimal use of mental models on my part and the invitations to use them should not imply that mental models weren't engaged. Personally, as a moderator, I can attest that my mental models were constantly involved in the process of taking part in the debrief conversations. However, in my outward practice as a moderator, the evidence suggests there was little opportunity for explicit attention to mental models even though they play a significant role. There are several reasons why this may be a positive and useful finding in my continued practice as a moderator:

1. Lengthy attention to individual mental models would have been a "time out" from the conversations which were focused on the participants and on evidence and implications from the immediate day that had past. Everyone had a stake in finishing the debrief conversations on time in order to move on with planning the following day or in order to get to evening activities. Attention to individual mental models might have construed the debrief conversation as a professional learning exercise independent of the work at hand. Since the goal was to tap into the immediate prior experience of facilitators, there would have been a contradiction. In effect, the debrief conversation became a stimulus with which to complexify mental models rather than a forum within which to do so.
2. Pressing for facilitators to share their mental models would likely have presented as: "Explain yourself" given the context of the debrief conversation. In the future, attention to mental models could be done with facilitators in advance so that we can refer to this much as we referred to SDT.

3. In the context of debrief sessions, mental models manifest in actions rather than in what we say. They become "why" we say verses "what" we say. The sharing of mental models directly with one another suggests a level of intimacy and trust that may not be warranted by our association with each other in a one hour conversation at the end of the day.
4. Mental models may have a more explicit role in constructive controversy during debrief conversations, when individuals may find themselves explaining their viewpoint based on their conceptualization. In the future, direct attention to mental models, may prove useful during constructive controversy.

In conclusion, the use of mental models in my role as moderator could not be viewed independently of self determination theory in this study. The analysis suggests that in actual practice, and perhaps in particular to the professional development situation we were in, mental models play an important "behind the scenes" role. While mental models may have been engaged in the debrief conversations, and hopefully they were, the absence of direct use in my speech as a moderator provides direction for my future practice as a moderator.

Organizing Circumstances

As explained in the beginning of this Analysis section of the paper, organizing circumstances (OC) was the one construct of the theoretical framework which grew to encompass far more than I had originally anticipated. Eventually, most of the coded passages from the transcripts collapsed into the organizing circumstances construct and there was a need to differentiate within this code. Nearly forty different codes for OC were developed by the end of coding, most of this occurring during analysis of the first six transcripts.

Toward the end of coding transcripts from the second week, the OC code had stopped proliferating as the theoretical construct interacted with the existing data sets (the collection of similarly-coded passages in the NVivo free node) and "nothing new" was presenting in terms of organizing circumstances. I observed that new entries into the data sets were becoming redundant. So, there was "nothing new" going into the data sets that wasn't already there. I surmised that data saturation had occurred for a large portion of the codes. The next step naturally became the analysis of the data sets within each OC code. The full pathway of analysis is illustrated in Figure 3.

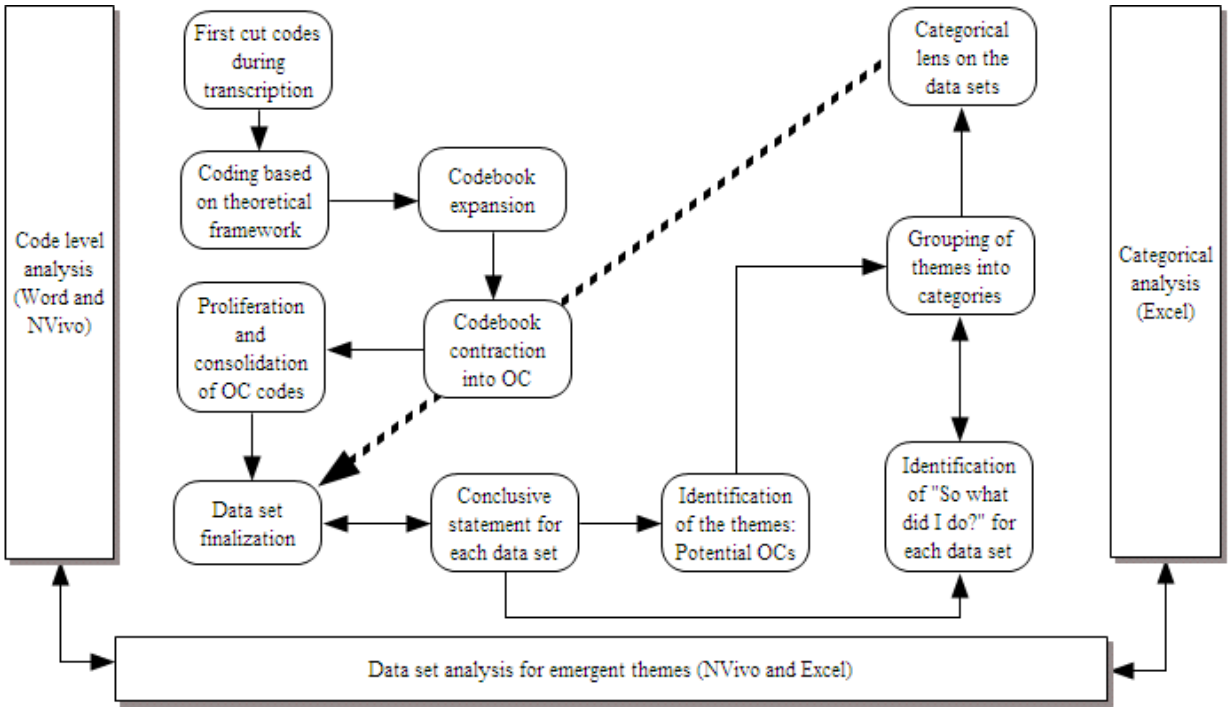

Figure 3. The full pathway of analysis through the data coded within the organizing circumstances construct. The outermost boxes outline the three different levels of analysis, reflected by the diagram within. The inside diagram ultimately arrives at the categorical level of analysis, the steps leading to which essentially offered the opportunity to examine the data sets. Figure 4 depicts the data display from this analysis and Appendices B and C include the data generated during the Thematic and Categorical levels of analysis.

Data Set Analysis

After coding was completed, each data set was reviewed in relation to the final set of codes. Code names were refined. Rarely, a new code was created. After the data sets were reviewed and completed, the code list was exported to a column within an Excel spreadsheet. In the second column, I wrote a conclusive statement regarding the data set (from NVivo) for organizing circumstances. This clarified and distinguished the codes from each other even more as the statement was meant to represent the entire data set for each code. In relation to the plethora of OC codes, the conclusive statements distinguished the codes that represented patterns in the data from those that presented the rare instance.

While I worked on the conclusive statements in Excel, I sorted the codes in NVivo by the number of references they contained. Those codes that contained at least seven passages also spanned at least three transcripts, and so they were analyzed at this level. I rarely proceeded with analysis of codes that had one or two passages. So, from the codes that had not reached saturation, this step sifted out which were essentially unrepresentative of my past and future practices as a moderator in debrief conversations. For instance, "OC- implications directly from participants" was a code with only one passage that was kept because I foresee how gathering direct insights from participants will play a role in future conversations. Another passage (OC- making strong recommendations to the facilitators) was left behind at this level of analysis because its specificity would be useless for my future practice. Because multiple coding of passages had occurred, it was unlikely that this step left behind any raw data from the initial coding.[7]

[7] In hindsight, singular coding of passages would have have theoretically accomplished the same thing, but in a way that was much less representative of and responsive to the data.

The data set analysis ended with a conclusive statement for each code. The statement summarized all of the passages that were coded in the data set. A representative exampled of each data set was included This level of analysis is included in Appendix B and a representative example of each data set is included.

Thematic and Categorical Analysis

Having familiarity with the idea of developing thematic networks (Attride-Stirling, 2001), I employed the tool in order to gain foundational understanding of my role in generating organizing circumstances which I had thus far identified. Once the data set analysis was completed, I transformed the conclusive statements into conceptual statements of what I had said. In a new column, I answered the question: Based on the conclusive statement, what may have become part of the environment around the facilitators as I said these things?

Based on this conceptualization of my role in speaking the words contained in each data set, I then identified what I was doing as a moderator in speaking those words by answering the question: So what did I do? Based on that list, I formed categories. This was the broadest perspective taken in terms of the results.

I found that in general, I was taking one of four actions, each identified as a separate category. I was either: *explicitly defining* my role as a moderator in what I said or referred to, or I was tending to the *logistics* of the conversation by keeping it on track and on topic, or I was attending to the *mechanical processes* of the debrief conversation, or I was being *evaluative* while taking part in and encouraging critical reflection. The full results are in Appendix C.

Additionally, from the broadest perspective of the OC data, I sometimes stepped out of the role of moderator and addressed management issues that arose within the program. For instance, in terms of how a key part of the program went I said, “I was a little concerned about it

yesterday, just thinking about it programmatically. From appearances now it looks okay." Having worked closely with the manager over the years, it sometimes fell on me (or I took it upon myself) to tend to small logistical components of the workshops and ensure that the program was being implemented as conceived and planned, with the utmost attention to quality. While mildly troubling in reality, the duality of my purpose at times was complicating and frustrating to me. A lapse into another role left the moderator one vacant and the conversation untended. A temporary loss occurred in my perspective of the professional learning by the facilitators. This lapse could have inadvertently created a loss of trust or the feeling of safety that structure and defined roles provide to a conversation. In itself, the lapse in my role as moderator was an organizing circumstance non-conducive to the purpose of the debrief.

In the future, I believe my role as moderator needs to be present at all times, as that perspective is pivotal in creating organizing circumstances for the conversation. Any managerial perspectives need to be executed secondarily in the time and space in which debrief conversations occupy.

Data Display

A data display was generated from the results of the analysis for organizing circumstances (see Figure 4). On the right hand side of the diagram, I have illustrated the four main categories of organizing circumstances which I created in my practice as a moderator: (self) definitive, logistical, mechanical and evaluative. These clusters were identified during the categorical level of analysis. The categories point to the themes identified from the examined data sets. For instance, in creating logistical organizing circumstances for facilitators, I situated and oriented them in the conversation, and tethered that conversation to the participants for that week.

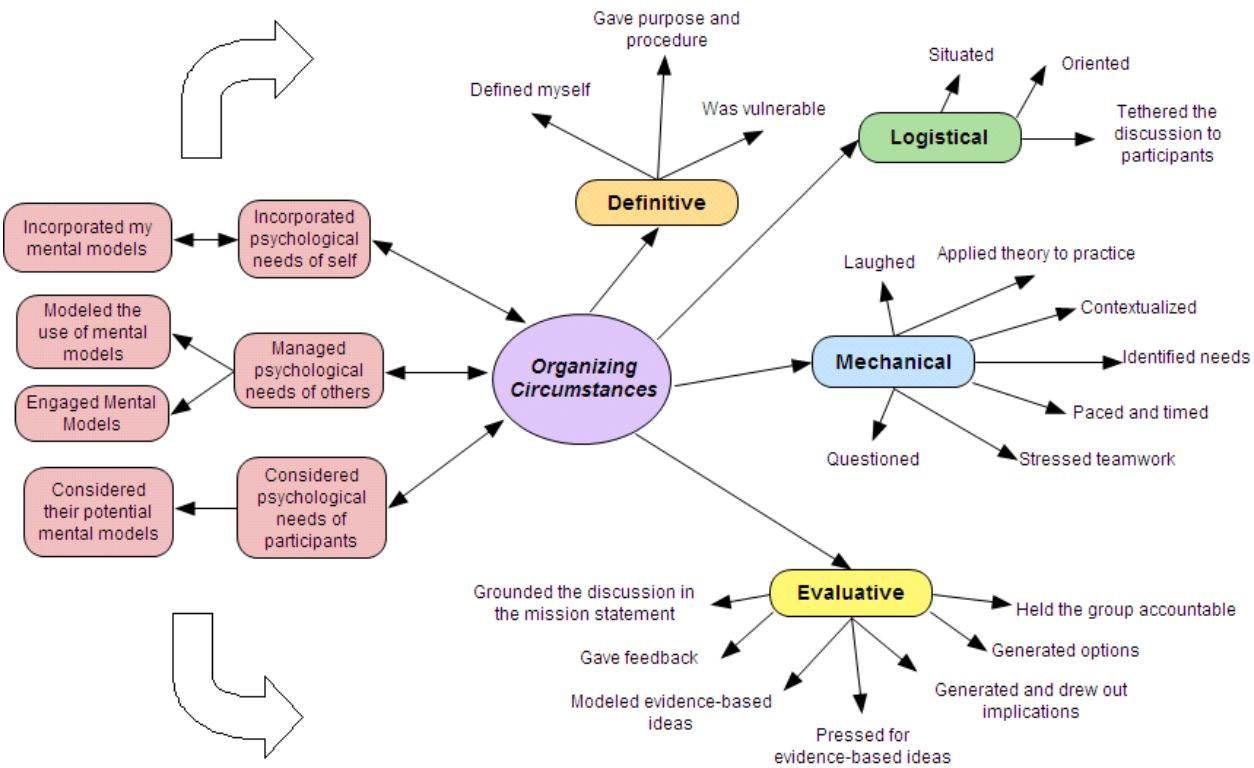

Figure 4. A data display of the analysis.

Reconsidering the original theoretical framework

Besides a data display of the results, Figure 4 represents a re-envisioned theoretical framework as a result of this study. On the left side, SDT and MMs are represented in terms of the moderator, the facilitators and the participants. These "individual attributes" played a role in the debrief conversation, but in this context, they were not observed as separate or discrete. Rather, they manifest in the organizing circumstances they emerged in the themes. Evidence of this is provided in Appendix D in an excerpt from a transcript of my speech during the second week. This coded passage represents how I was employing SDT and mental models and intertwining them into the organizing circumstances that I was creating through my speech for the facilitators. In conclusion, what appeared in terms of individual attributes, ultimately played out in the creation of organizing circumstances within the debrief conversation environment.

Discussion

As a moderator, my psychological needs and my treatment of mental models become organizing circumstances for those around me. I also came to understand how the role of a moderator is fundamental to a debrief conversation. Having someone who is focused on creating and engaging in four general organizing circumstances (definitive, logistical, mechanical and evaluative) assisted in creating an environment for the facilitators in which they could make choices and enact themselves as professionals. Without anyone filling this seat, it seems unlikely that such an environment could have been maintained.

These realizations have fundamentally changed my perspective on debrief conversations and shifted my attention squarely onto the role of the moderator. The next question has become: What organizing circumstances generally exist in moderated small group discussions among leaders after they implement a learning environment for others (i.e., facilitators discussing how their PD program went)? I believe the pursuit of this question will eventually lead to a "How to debrief" paper.

Within my immediate work, there is also much to consider, and many opportunities to explore now that the role of the moderator has been defined. The debrief conversation could be built into a larger plan for professional learning for the facilitators, and they can take a more significant role in defining what it is and how it is part of their work. Additionally, focus can be on giving them the capacities they will need within the context of the debrief conversations to make decisions and to come to conclusions regarding participants in their learning environment. Some of these capacities might include working knowledge about self determination theory and mental models and how those individual attributes are a factor in how we conceptualize meaning as we talk with each other as adult learners. Another capacity is the idea of constructive

controversy and how it is beneficial in professional learning. Other things, such as interdependence can be considered, but that is secondary from the findings of this study.

As part of defining my role as a moderator within debrief conversations, I inevitably arrived at a revised definition of debrief conversations in the context at my ISI. This study complexified my definition of a debrief conversation considerably. The definition is furthered complicated by the reality that individuals need to become accustomed to the idea of having a moderator, someone who is there to focus on their professional learning in the context of their work. So this definition is not a fixed standard by which to enter into debriefing. Rather, it is an ideal to work toward. Additionally, debrief conversations are not a linear process. In the ISI's PD program, I suggest a debrief be considered as:

- A **moderated** conversation among leaders after their implementation of a learning experience,
- that has a **structure** (time, place, space, and scope of coverage) of which all are aware, agreeable to, and responsible.
- The moderator's primarily role is to develop **organizing circumstances** (definitive, logistical, mechanical and evaluative) within this structure.
- Ideally, **mental models** are engaged, individual **psychological needs** are met, and **critical reflection** occurs.
- If these ideals are met, **adaptive expertise** is likely to result
- at the **individual** and **small group** level.
- These individuals and groups are situated within an **organization** which strives to learn as it operates within its changing social environment,
- thus creating **adaptability** within the "system."

There are substantial ideas in this definition. The first three are supported by findings from this research study. The latter half of the definition is supported by theoretical and conceptual pieces of literature, most notably, two papers which appeared in *Educational Researcher* which dealt with the notion of applying ecological frameworks in education: in terms of policy (Weaver-Hightower, 2008) and civic responsibility (Lee, 2008). The full realization of this definition remains to be observed in my practice as a debrief conversation moderator.

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Appendix A. More information on the ISI's PD program.

This section is included to provide more detailed information about the professional development program which the ISI team leads. The overall program began with a weeklong institute called the *Introduction to Inquiry*. The "backbone" of this week is comprised of five workshops which have been produced and revised by the Exploratorium over the past 30 years.

The goal for this initial week of the ISI's program was to have participants understand what inquiry learning is and how inquiry learning experiences in science can be planned for students. In order to do this, facilitators led participants through five workshops about inquiry in the science classroom. The core of the weeklong experience has been several "making meaning" discussions wherein facilitators led small group discussions giving participants the chance to reflect on experiences and make sense of them in light of their prior conceptions. Facilitators also guided participants through the process of planning a classroom lesson that engaged students in inquiry learning.

In *Designing Professional Development for Teachers of Science and Mathematics*, the Exploratorium's Institute for Inquiry and the five workshops it includes is used as an example of an immersion professional development experience and is described as follows:

> "The professional development is deeply rooted in the belief that human beings are natural inquirers and that inquiry is at the heart of all learning. Educators personally experience the process of learning science through inquiry to stimulate thinking about how to create classrooms that are supportive environments for children's inquiry. Scientists and other educators guide teachers through the inquiry process. As teachers engage in investigations, they develop a deeper understanding of science content and the inquiry process. They also work collaboratively with other teachers to explore the application of their new knowledge and skills in the classroom" (Loucks-Horsley, Love, Stiles, Mundry & Hewson, 2003).

It is believed that this introductory week allows each participant to experience conceptual change about inquiry learning. Having them fully participate as learners is viewed as imperative

for this conceptual change to take place. This first weeklong workshop is meant to be complemented by an end-of-year follow up workshop. Together, the summer workshops bracket in-classroom academic year experiences in a model of continuous professional development.

The data in this research was collected from debrief conversations which took place at the end of each day of the *Introduction to Inquiry* workshop over the course of the first two weeks of July in 2008.

Appendix B. Data Set analysis including Conclusive Statements and Examples.

Codebook	Conclusive statement regarding the data set	Example from data set, one thing that I said was:
Org Cir - defining my role	I wrote and shared a purpose statement for the debrief session. I defined what I did physically and verbally with participants. Sometimes I did this to model craftsmanship ideas for the facilitators. I attempted to be critical yet constructive in feedback to the facilitators, and I hoped that it was interpreted as such.	I think what I want to do is kind of model what you can do with each other. And so it's my role to physically be there.
OC- Vulnerability in my role and my work	I made myself vulnerable and expressed that I was a work in progress, that I had made mistakes and that (I did not do this the second week -so my vulnerability was more of an OC in the first week…)	As I reflected last night I felt I was ineffective in the structure that I created yesterday in the debrief and I did not keep the time.
Org Cir - Straight up feedback sometimes transformed into asking questions... essentially making recommendations	Feedback and input on how it went in relation to what they set out to do. I usually explained this in terms of effectiveness. Along these lines, I also recommended courses of action to take.	As I reflected last night I felt I was ineffective in the structure that I created yesterday in the debrief and I did not keep the time.
Org Circum - Pushing for implications	Getting at the "so what?" Sometimes this was as simple as asking, so what does this mean? And sometimes it was sticky and intricate---sometimes only I saw that there was an implication. This is one of my favorite passages…	Looking ahead to tomorrow, where is the implication? Envision that implication for us. …
Org Cir - Highlighting options that facilitators have in their work	I clarified, generated and summarized options that had presented themselves during the course of the conversation. Sometimes, in tandem with this, I explained how the implementation of the ideas might look.	I don't know if you're going to do a formative assessment, if you were going to have everybody write up something you could read so that you could say, "okay, let's move on" or "let's not move on yet." You have options.
Org Cir - mentioning or drawing attention to the Mission Statement	I positioned the mission statement so that all could see and interact with it. I frequently referred to the mission statement and brought the conversation back to it. I tried to convey that the mission statement was acting like a constitution and that we were in the process of interpreting and realizing what it meant in the context of working with the participants.	Before we go there, I want to look at the mission statement because we are getting to the point where we have to start reconciling decisions that we make with this, versus what has been done, what was done, who did what, who thinks what. This is the collective mindset of our team. So, if we can start to think about reconciling decisions with this … Constitution.
Org Cir - Holding them accountable and following up with them	After we set something up, I followed up with it to see that it was done and how it went.	... going forward, I'd like to know that the participants know that they *got* the content, and all the content that was intended, not just part of it. So tomorrow you're going to be doing this with another activity … is it possible to have them do something concrete with all of the content in their notebooks?

Org Cir - Modeling the use of evidence in coming to conclusions	Based on my own interactions with participants, I modeled the use of evidence in substantiating conclusions about participants.	One group's focus was too big, they had four concepts they were going to tackle with one inquiry.
Org Cir - Pushing for evidence to arrive at conclusions	I encouraged the presentation of cognitive and behavioral data. I pushed past affective and attitudinal data.	You mentioned that you worked well as a team, and the affective components of that when you were going around to the different tables and that it felt like you were doing a good job there. What's the evidence from the participants that you were doing a "good job"?
Org Cir - Mechanics of moderating a debrief	I keep the conversation moving along in terms of time. I hold the conversation up in terms of the participants and to fully develop the picture from the previous day. I identify that they are in charge of the time. I acknowledge that it's important for all to be present. I transition the group to the next part of the conversation. I kept the conversation on point even though we tended to veer into other parts (this is important because I later realized it's not a linear process).	We have to move on, but do you feel you have some things to go on?
Org Cir - Grounding the conversation in this week's participants	I steered the conversation back to this week's participants, and grounded the discussion in evidence from this week…	I have to pull us back, I think we are against the fact that we haven't gotten through discussing today and we're trying to develop the schedule for tomorrow.
Org Circum - putting off later discussions for later	I gave a time, a place, and a "face" to conversations that could/should occur at another time. I encouraged the notion that there was a time to discuss this, but it is not now. I acknowledged the idea and gave it a place in another discussion…	I encourage you to stick with the implications for tomorrow for our participants this week, and make note of those ideas for the next workshop.
Org Cir - Defining my role - My application of learning theory with them	I explained what I did in terms of theory-- I referenced my actions in the debrief and "pulled back the curtain" to convey my rationale AND share some learning theory with them.	The conceptual basis for this week was that whole idea of novices and experts and visualizing you as a community of practice, newcomers and old-timers. We're all novices, even old-timers in some way, shape or form.
Org Cir - Theory to practice as professional developers	I illustrated how the experience illustrated a learning and then used that theory as the foundation for a suggested course of action. I differentiated between procedural knowledge and principled knowledge and encouraged facilitators to apply it in their practice	That's that whole idea of self determination theory... That we need to feel competent in our work, autonomous and related... How would you address that with the class if they were creating this negative base for learning?
OC- implications directly from participants	I situated comments and input from participants in the context of the debrief discussion.	That came from one of our participants. … okay. … so, that's a direct statement in terms of what they want to do so it's an implication from their mouths about themselves,
Org Cir - Clarifying needs	I clarified the needs of the facilitators and participants.	So, you want help picking out the sections...

Org Cir - Defining my role - Humor and laughter	Creating fun metaphors, using historical references to each other to provoke feelings of connectedness and fun.	Crisp refers to an experience planned and prepared for our participants that will be encapsulated, clear, and concise in order to allow for conceptualization by participants... it's also a fun, one syllable word to say... Before Jacqueline went up to do that activity, I think, you got a little spray down (with starch).
OC- Planning talk with or without implications	Facilitated the conceptualization of how the implications that were identified during the debrief would play out in the course of action planned for tomorrow and days ahead.	"Implications for tomorrow. It sounds like one thing is to get the morning activity together. And the other (implication) is to map out what that whole reflection/planning and misconceptions piece looks like." AND "I have to pull us back, I think we are against the fact that we haven't gotten through discussing today and we're trying to develop the schedule for tomorrow."
Org Cir - Asking questions	I ask questions for clarification, to reveal underlying rationales, to see if my hunches are the same as the facilitators, and to isolate discussion topics. Additionally, I asked questions about what was planned to ensure that protocols were being followed (however, this was managerial).	It sounds like your struggle with that group is: how do you assess them in terms of what their understanding is at this time?
Org Cir - Defining my role - highlighting interdependence	I facilitated the process of working together, encouraged them toward each other as a resource and team partner. I promoted the concept of teamwork.	I think that you committed to a number of implications together. It's not just that, "now it's on you to do this" ... because it's been brought out in this forum, it's everybody's. I don't know if you need to be there when Amanda addresses the participant. But follow-up. Ask her. If it's okay with you, Amanda?

Appendix C. How Conclusive Statements Ultimately Resulted in Categories.

Conclusive statement regarding the data set	Theme-- What might have become part of the environment based on what I said?	So what did I do?	Category
I wrote and shared a purpose statement for the debrief session. I defined what I did physically and verbally with participants. Sometimes I did this to model craftsmanship ideas for the facilitators. I attempted to be critical yet constructive in feedback to the facilitators, and I hoped that it was interpreted as such.	The role of the moderator will be described and clarified as requested and needed.	Gave purpose and procedure AND Defined myself	Defining my role - explicitly
I made myself vulnerable and expressed that I was a work in progress, that I had made mistakes and that (I did not do this the second week -so my vulnerability was more of an OC in the first week…)	We are vulnerable to each other. Mistakes and calculated risk-taking are okay.	Was vulnerable	Defining my role - explicitly
Feedback and input on how it went in relation to what they set out to do. I usually explained this in terms of effectiveness. Along these lines, I also recommended courses of action to take.	Critical and constructive feedback exist and recommendations are given as is the support to understand the implications for practice.	gave feedback	Evaluative
Getting at the "so what?" Sometimes this was as simple as asking, so what does this mean? And sometimes it was sticky and intricate--- sometimes only I saw that there was an implication. This is one of my favorite passages…	There is pressure to get at the "so what?" and identify what this means (aka, what the implications are) for immediate future work.	generated and drew out implications	Evaluative
I clarified, generated and summarized options that had presented themselves during the course of the conversation. Sometimes, in tandem with this, I explained how the implementation of the ideas might look.	Options that exist for future actions are created, described and summarized.	generated options	Evaluative
I positioned the mission statement so that all could see and interact with it. I frequently referred to the mission statement and brought the conversation back to it. I tried to convey that the mission statement was acting like a constitution and that we were in the process of interpreting and realizing what it meant in the context of working with the participants.	The mission statement is a guiding force and a way to reconcile our ideas, the evidences we discover, and the actions we plan to take.	grounded the discussion in the mission statement	Evaluative
After we set something up, I followed up with it to see that it was done and how it went.	Accountability exists in what we say and plan to do.	held the group accountable	Evaluative

Based on my own interactions with participants, I modeled the use of evidence in substantiating conclusions about participants.	Observations and opinions are valued. Evidence-based conclusions are valued and effective in identifying implications.	modeled evidence-based ideas	Evaluative
I encouraged the presentation of cognitive and behavioral data. I pushed past affective and attitudinal data.	There is pressure to push past anecdotal, affective and attitudinal data in order to identify cognitive and behavioral evidence.	pressed for evidence-based ideas	Evaluative
I keep the conversation moving along in terms of time. I hold the conversation up in terms of the participants and to fully develop the picture from the previous day. I identify that they are in charge of the time. I acknowledge that it's important for all to be present. I transition the group to the next part of the conversation. I kept the conversation on point even though we tended to veer into other parts (this is important because I later realized it's not a linear process.	The conversation can be steered back to course, we may be asked to dwell on an idea for a little longer, or encouraged to move on in order to end on time.	oriented	logistical
I steered the conversation back to this week's participants, and grounded the discussion in evidence from this week…	There is a tether to this week's participants in this conversation. It is about them and how they are learning in light of what we have planned and prepared.	tethered the discussion to participants	logistical
I gave a time, a place, and a "face" to conversations that could/should occur at another time. I encouraged the notion that there was a time to discuss this, but it is not now. I acknowledged the idea and gave it a place in another discussion…	Putting off later conversations for later.	situated	logistical
I explained what I did in terms of theory-- I referenced my actions in the debrief and "pulled back the curtain" to convey my rationale AND share some learning theory with them.	There is a theoretical basis for implementing and moderating debrief conversations.	applied theory to practice	mechanical
I illustrated how the experience illustrated a learning and then used that theory as the foundation for a suggested course of action. I differentiated between procedural knowledge and principled knowledge and encouraged facilitators to apply it in their practice	As professionals, theory helps explain our experiences and position us in our practice.	applied theory to practice	mechanical
I situated comments and input from participants in the context of the debrief discussion.	Direct input from participants can find context within the debrief conversation.	context-ualized	mechanical
I clarified the needs of the facilitators and participants.	Needs of participants and facilitators are identified.	identified needs	mechanical

Creating fun metaphors, using historical references to each other to provoke feelings of connectedness and fun.	Humor plays an important and appropriate role, and it is encouraged in our conversations and relationships with each other.	Laughed	mechanical
Facilitated the conceptualization of how the implications that were identified during the debrief would play out in the course of action planned for tomorrow and days ahead.	Timing is everything and the amount of time for the debrief plays a role in what can be discussed. Data, issues and situations which do not pertain to this week's participants need to be discussed at another time and place. Now is not the time to talk about planning for tomorrow or weeks ahead.	paced and timed	mechanical
I ask questions for clarification, to reveal underlying rationales, to see if my hunches are the same as the facilitators, and to isolate discussion topics. Additionally, I asked questions about what was planned to ensure that protocols were being followed (however, this was managerial).	Questions are asked for many reasons: for clarification, to voice underlying rationale, to isolate what we need to discuss, to check for alignment among ideas.	questioned	mechanical
I facilitated the process of working together, encouraged them toward each other as a resource and team partner. I promoted the concept of teamwork.	Teamwork is essential in implementation. Communication among team members is imperative.	stressed teamwork	mechanical

Appendix D. The Involvement of Individual Attributes with Organizing Circumstances.
Ellipses represent where conversation took place and I was not speaking. The italicized passages represent what was coded and the codes are identified in the right hand column.

Passage	Coded as
… Because sometimes there is a participant issue or circumstance an individual facilitator needs to address, and it's great to bring those ideas to the team, as sometimes it's also a team thing to address.	Interdependence.
… I mean, we've had people with very close relationships with participants facilitating. And that *extra effort* to remove themselves from that participant's proximity has paid off…	My mental model.
And I think that will benefit you as a team.	Interdependence.
… I want to keep us here … To focus on the participant.	Logistics of moderating.
There are attitudinal needs there…	
That's that whole idea of self determination theory... That we need to feel competent in our work, autonomous and related (to each other and ideas).	Theory to practice.
... How would you address this if it was a student in your class,	Inviting Facilitators' mental models.
who wanted to show that they knew something-- To have that feeling of competence? … We all need that to varying degrees. Each of us as an individual needs to feel competent…	Theory to practice.
This sounds like something for Jennifer to address with the participant, but for all of us to be cognizant of.	Interdependence.
…It feels like the participant has the need to make relationships between ideas in his head.	My mental model applied.
He's looking for relatedness and competence. "You know what I know and that I know" it goes back to the basic need that we have.	Participant needs.
So maybe it sounds like you are addressing it on an individual level but it might go back to the whole group as well.	Interdependence. SDT-Relatedness
…"There will be time for that", you will have a chance for that. He may not realize that there will be a time.	Direct input for facilitators' work.
They might think the whole rest of the week is going to look like this. They have no conception of where they're going. That's part of the ramifications of learning things, when you are immersed…	Participant mental model.