Learning Through Dialogic Teaching and Instructional Conversations in Higher Education: A

Multiple Case Study

A Dissertation Submitted to the Graduate Division of the University of Hawai'i in Partial

Fulfillment of the Requirements for the degree of

Doctor of Philosophy

in

Educational Psychology

December 2021

By

Grant S. Agawa

Dissertation Committee:

Lois Yamauchi, Chairperson

Katherine Ratliffe

Tasha Wyatt

Brook Chapman de Sousa

Kathleen Kane

Abstract

Educators have applied the Center for Research on Education, Diversity, and Excellence (CREDE) standards to classrooms of children and youth for over 30 years. However, few studies have focused on applying the strategies in higher education. Therefore, this multiple-case study investigated one of those standards, Instructional Conversations, with adult students. Instructional Conversations are small group discussions between an instructor and students that promote students' conceptual understandings. Participants included four higher-education instructors and their students, who were studying for associate, undergraduate, and graduate degrees. Instruction took place one year into COVID-19 pandemic and used online formats. Discourse Analysis revealed how ideas were co-constructed, as well as speech acts by four participant instructors with varying understanding and experience in use of Instructional Conversations. Results indicated that instructors who applied Instructional Conversation used specific speech actions in comparison to other instructors who used alternative methods of class instruction. The two instructors with experience in Instructional Conversation assisted students to clarify their thoughts and reframe thinking. Further, they paraphrased student comments, co-created ideas with learners, and created opportunities for students to share their lived experiences.

Table of Contents

List of Tables

Learning Through Instructional Conversations in Higher Education

The Center for Research on Education and Diversity and Excellence (CREDE) Standards enact sociocultural theory in both teaching and learning with children and youth. With both young and adolescent learners, multiple studies have investigated a wide range of features related to the CREDE principles over the past 30 years (e.g., Doherty et al., 2003; Yamauchi et al., 2013; Chapman de Sousa, 2017). Considering Vygotsky's (1978) theory of child development, such a focus on elementary and secondary school environments is understandable. More recently, Engles et al. (2019) explained that active learning as advocated by the CREDE Standards can be administered in large classroom formats, but they found little use of CREDE Standards by instructors in large university lecture classrooms. However, implementation of the CREDE model in university settings is possible as demonstrated by Yamauchi, Taira, and Trevorrrow's (2016) study of how they applied the CREDE Standards in three university settings. Thus, in the current study, I investigated instructors with varying knowledge of and experience with the CREDE Standards to understand specific social actions, or speech acts, involved in one of the five CREDE Standards, Instructional Conversations (IC), on which I provide background in the subsequent section.

Instructional Conversations

An IC is a "planned, goal-directed conversation between a teacher and a small group of students" (Doherty et al., 2002). Within these discussions, participants co-construct meaning socially (Goh et al., 2002). To do so, instructors perform speech acts such as forms of questioning students. Specifically, Doherty, Hilberg, Pinal, and Tharp (2003) deconstructed IC as

"questioning students on their views, judgments, and rationales, as well as their experience, attitudes, values, and beliefs in relation to academic concepts" (pp. 6-7). What results from such questioning is that students' background knowledge connects to content and is a form of learning (Doherty et al., 2003). Instructors encourage students to voice their thoughts and build on student statements in a responsive way, as opposed to asking for answers to questions that the instructor already knows (Goldenberg, 1991).

Much of the research on IC has concentrated on elementary school learners (e.g., Saunders & Goldenberg 1999; Dougherty et al., 2002; Haneda, 2008), and the Department of Education's What Works Clearinghouse highlighted the strategy as an evidence-based practice for elementary school students. On the topic of adult learning, Knowles (1975) did not discuss IC. However, he did differentiate the teaching of adults (andragogy) from the teaching of children (pedagogy), suggesting the need for alternative teaching considerations such as discussion, problem solving and simulations when working with adults. Much of what Knowles (1975) called for is consistent in an environment with IC. Also related to adult learning, Yamauchi, Taira, and Trevorrow (2016) described how ICss can be successful in university classrooms, and my current study continued this line of work.

There is a great potential for IC in university courses. Sociocultural theorists maintain that the mind is created through dialogue, and that it is through discourse that humans co-construct ideas (Bakhtin, 1981; Estrada, 2005, Rogoff, 1990; Vygotsky, 1978; Wertsch, 1985). For example, in such university courses, a professor might dialogue with students to advance higher-order thinking or understanding of concepts. In addition to use in the humanities, dialogic

8

teaching can be used with the teaching of math and science (Zack & Graves, 2002; Galbraith &
Jones, 2006; Haneda, 2008). However, as previously mentioned, Engles et al. (2019) found little
use of active learning strategies such as IC in both STEM and non-STEM courses in large
university classrooms. As previously mentioned, Engles et al. (2019) contended that active
learning such as the CREDE Standards could indeed be used in large classroom format; however,
that was not demonstrated in their research. In other words, the process of teaching and learning
through IC among adults has not been explored to a deep enough extent; hence, the inspiration
for this current dissertation research.

Similarities and Differences in Child and Adult Learning

Similarities

There are a number of similarities between the learning of children and adults. Similar to
children learning through the observation of others and self-regulation (Bandura, 1977, 2001),
adults also learn in such ways. For instance, researchers documented the social learning of nurses
(Akers, 1989; Braungart et al., Kane-urrabazo, 2006; Stiles, 2005), mental health professionals
(Waynor et al., 2005), and among adults in extension education (Williams, 2017).

The environment affects both learning and development for children and adults. For
example, Piaget and Vygotsky affirmed that the environment affects development and vice versa.
Regarding non-traditional adult students, Kenner and Weinerman (2011) suggested the
importance of creating environments that foster awareness of new learning strategies, framing
strategies to make purposes clear, and enabling competition of new learning strategies with older
ones. That is, from a sociocultural perspective, the environment, including culture, influences

how learning happens. Be that as it may, while some contexts focus on transmission teaching, others may be more dialogic and experience-based.

Differences

At the same time, there are variations in the process of child and adult learning as a result of human development. Piaget saw learning as being limited by development, and that restraint held an impact on learning for youth. For instance, Miller (2016) pointed out that information in the mind of youth is biased until later developmental stages. She wrote:

> Experience is always filtered through the child's current ways of understanding. A child's mind is not a camera that takes faithful pictures of reality. However, as the mind develops, it becomes more in tune with reality. (p. 31)

In a similar way, humans above the age of 18 continue to develop intellectually (Perry, 1999), morally (e.g., Kohlberg, 1981), and regarding their identities (e.g., Erikson, 1968). Consequently, adult learning can be biased due to distinct areas of development. One example of this is cognitive development, reflected in biases that affect the accuracy of and way in which something is learned. There are several of these cognitive biases including anchoring, framing, availability (Kahneman & Tversky, 1972; Kahneman, 2011). The key point, however, is that development may bias learning for those at younger ages, which raises the question of how development impacts college students who themselves continue on developmental pathways.

Cognition is affected by aging. Cattell (1941) brought to light the concepts of *fluid* and *crystalized* intelligence. Charles and Carstensen (2009) elaborated that the prefrontal cortex continues to develop until 25 years of age or so. This is related to quick learning and decision

making or fluid intelligence. Downturns in fluid intelligence begin at around age 30, and for many people, reasoning reaches its heights before the age of 30 (Salthouse, 2012). Older individuals may rely more on crystalized knowledge to solve problems, as capacity for novel problem solving (fluid intelligence) tends to decline with age. This is consistent with research indicating that adult learners experience decreased myelination and plasticity (Miller, 2016). Salthouse (2012) pointed out that mathematics experts reach the peak of their abilities at roughly 26.5 years of age, while experts in history (relying more on crystalized intelligence) peak at age 38.5. Learning may be more challenging for those above 30 years of age; however, older adults also have experience, motivation, and mindsets that may compensate for cognitive decline.

Transformative Learning

The theory of Transformative Learning (Mezirow, 1978) specifically addresses adult learning, and cognitive development, which impacts learning, is an outcome of transformational learning (Hoare, 2006). Mezirow (1997) outlined transformative learning as "the process of effecting change in a frame of reference" towards perspectives and conceptualizations (p. 5). In other words, the experiences adults have had over the years influence how they see the world, and transformative learning aims to revise these viewpoints. For such transformation, the role of dialogue is crucial (Mezirow, 1978).

In transformative learning, discussions with others who hold differing points of view can result in changes in levels of autonomy. Autonomy in this theory refers to humans' abilities to "become critically reflective of one's own assumptions" (Mezirow, 1997, p. 9). Children first gain foundations for autonomy, and teens then may learn to be more reflective through

11

experiences and discourse with others. An example of growth in complexity for teens is greater thought in terms of hypothetical situations. Adults then gain more awareness of the thoughts and perspectives of others (Mezirow, 1990). I believe the CREDE Standards are related to Mezirow's (1997) theory of transformative learning in that the environment can promote changes in "frames of reference" and understanding of a concept (p. 5). Through dialogue, adult students can become critically reflective. For example, analysis of interactions may reveal biases students have that the instructor or a peer works to overcome. In CREDE learning environments, instances of adult students' self-directedness may also become evident. Related to the CREDE model, Doherty and Hilberg (2007) stated that "it is through joint activity and the accompanying discourse that individuals develop the habits of mind necessary for self-directed learning" (p. 25).

Andragogy

Distinguishing adult learning from child learning is Knowles' (1980) concept of andragogy, which I previously highlighted and now explain in further detail. Knowles et al. (1998) defined andragogy as "the art and science of helping adults learn, in contrast to pedagogy as the art and science of teaching children" (p. 43). Knowles et al. (1998) stated that the

> emphasis in adult education is on experiential techniques-techniques that tap into the experience of the learners such as group discussion, simulation exercises, problem-solving activities, case method, and laboratory methods instead of transmittal techniques. Also, greater emphasis is placed on peer-helping activities. (p. 66)

Further, Knowles et al. (1998) explained andragogy as "a cooperative venture in non-authoritarian, informal learning, the chief purpose of which is to discover the meaning of experience; a quest of the mind which digs down to the roots of the preconceptions which formulate our conduct" (p. 39). The six features of andragogy are (a) purpose or a need, (b) self-conceptualization, (c) past experiences, (d) readiness point for learning, (e) orientation towards learning, and (f) motivation. In contrast, children may be required to study content that is not related to their current lives, may not have fully formed identities, will not have as many life experiences compared to adults, may not be ready to learn a concept, and may not be motivated to learn.

The CREDE pedagogical guidelines promote conditions that match andragogy's call for discussion focused environments. For example, Wyatt et al. (2012) pointed out that in CREDE educational settings, "teachers provide the structure and space for students to engage in deep, conceptual discussions on academic topics," and metacognition and original ideas result (p. 66). Again, it is genuine dialogue with others that initiates this active awareness of one's thoughts. For example, misconceptions about how a concept works or what a concept truly means can be made evident. Then changes in one's perception about the world (transformative learning) can be made.

Specifically on the topic of CREDE principles with adult learners, Yamauchi, Taira, and Trevorrow (2016) reported on their own use of joint productive activities, language literacy development, contextualization, complex thinking, metacognitive skills, and instructional conversation with the college students. Teemant, Wink, and Tyra (2011) found that use of

CREDE in instructional coaching led to teachers' own development and transfer of CREDE

teaching skills. This current dissertation research aims to add to that line of knowledge.

Theoretical Framework

IC creates the environment and opportunity for learning where interaction and dialogue

occur. Ideally, the instructor meaningfully connects the discussion to students' prior experiences

and knowledge. This occurs within what Vygotsky (1978) termed the learners' Zone of Proximal

Development (ZPD). The ZPD is the difference between what learners can do on their own and

what they can do with assistance. According to Vygotsky, learning occurs best when novices

collaborate and converse with more experienced and more knowledgeable others on a shared

task (e.g., joint productive activity). Gallimore and Tharp (1992) contended that the most

effective learning is dialogic between teacher and student. This is dialogue that links new

information to past knowledge and experiences in the context of an activity. Last, this dialogue

occurs within a ZPD (Gallimore & Tharp, 1992). It is in dialogue that elaboration occurs, as does

learning--the association of new information to old memories (Baddley, 1990).

Within IC, *elaboration* develops. Craik and Tulving (1975) expressed elaboration as the

linking of new and already known information. For Craik and Tulving (1975), elaboration is

more effective for learning than surface recall and practice. In CREDE research, Doherty,

Hilberg, Pinal, and Tharp (2003) considered elaboration as "processing that involves elaborative

strategies focusing on conceptual characteristics of the new material" (p. 4). Along that vein,

Baddley (1990) clarified that such deeper connections between novel and prior knowledge

increases chances for remembering. Modern thoughts on cognition support Baddley's notion

14

(Radvansky & Ashcraft, 2018). Elaboration for learning is key, however, how students assist one another in such elaboration of their ideas in adult learning environments needs further demonstration.

A Vygotskian Approach to Studying IC

For studies on Vygotskian approaches, Miller (2016) called for the engagement of a microgenetic approach, revealing sequences of development over time through qualitative analysis of human behavior and learning in a classroom environment. A microgenetic approach is the study of precise points in interaction between participants (Luwel, 2012). In terms of a microgenetic approach, conversation analysis is well-suited. Miller (2016) called for five elements in such investigations into Vygotskian studies. For this type of research, the interaction between a child and adult is suggested, however, in the context of my current study, all participants were adults. Be that as it may, the instructors were considered more-skilled-others who guided the adult students towards greater understanding. According to Miller (2016) such studies should first look at the shared understanding between the two participants. This connects to the concept of levels of intersubjectivity and is detailed in my analysis. Second, there should be an assessment of what the less skilled individual can do alone and what that person can do with the help of another. This second point is likewise addressed in the study. Third, researchers should analyze the shift over time of responsibility during a session. In the case of my study, I look at a moment-by-moment shift over time in interaction between participants as it is not a longitudinal study. My research is similar to Wertsch's (1984) Vygotskian *task analysis*. Tasks analysis involves a microgenetic approach to understanding events at specific and distinct points

15

during interaction between participants. Fourth, the study should reveal the way in which the more-skilled-other pulls the learning of the less skilled individual towards higher levels of cognition. The concept of *semiotic mediation* reveals specific instructor speech acts that accomplish such actions. Finally, Miller suggested that Vygotskian researchers should study the interplay between culture and history on the interaction between participants.

Discourse Analysis and Conversation Analysis

This study applied discourse analysis and some aspects of conversation analysis (CA) to understand IC. They enacted a microgenetic approach, which is the study of moment-by-moment changes in cognitive development at a detailed and definite level of analysis. Discourse analysis is the study of language in terms of actions and situatedness, with a constructive nature (Potter, 2004). That is, I analyzed actions by teachers regarding co-creation of ideas and understandings about what the conversations accomplished. I looked at what was said as well as how it was interpreted in context as suggested by Gill (2000). In classroom discourse analysis, Tsui (2012) explained that "researchers gain insights into the complex and dynamic relationship between discourse, social practices, and learning" (p. 383). On the topic of discourse analysis for classroom research, Flanders (1970) highlighted specific teacher actions during a lesson, Cazden (1988) investigated story sharing in classrooms, and Mehan (1979) investigated teacher questioning. The situated nature of discourse analysis signifies that there are "sequence of interactions" that are connected to a particular setting (Potter, 2004, p. 609). This construction is step-by-step, and language becomes an "analysable feature" (Potter, 2004, p. 610). Presented below is Excerpt 2 from Wells and Haneda's (2005) discourse analysis of an IC about plants.

Excerpt 2
```
1 T:    What do roots do for a plant?
2 Ss:   Water
3 S2:   They absorb the water.
4 S3:   They drink water.
5 S4:   And they- they help the plant to grow
6 S5:   They do something to xxx
7 T:    They help the plant get the water.
```

There are various methods of discourse analysis. The *Routledge Handbook of Discourse Analysis* lists critical discourse analysis, systemic functional linguistics, and narrative analysis, as well as conversation analysis (CA). I chose to use aspects of CA to supplement my data analysis, making my research CA-informed as I explain in the subsequent section.

Conversation Analysis

CA stems from the field of sociology and has spread over time to other fields (Stivers & Sidnell, 2013). Stivers and Sidnell (2013) asserted that CA is "the dominant approach to the study of human social interaction across the disciplines of Sociology, Linguistics and Communication" (p. 23). Early CA research began with Schegloff (1992). Sacks, Schegloff, and Jefferson's (1974) seminal study investigating recordings of calls to a suicide line. These researchers developed CA and detailed it as the study of spoken interaction at a technical level. CA is the investigation of social action, which is also referred to as talk in interaction (Drew & Heritage, 1992). Relating this to sociocultural theory, Werstch (1991) pointed out that "a fundamental assumption of a sociocultural approach to mind is that what is to be described and explained is human action" (p. 8). In CA, researchers select excerpts focusing on a problem and

17

transcribe the ways in which statements were said. The method concentrates on problems that can arise during natural conversations such as how people avoid answering questions. Below is an example of CA that Church and Bateman (2019) conducted on an interaction between three children arguing about a marble.

```
40      Clarissa:    stop it!

41      Ginny:       my marbles (.) ah:.((falls over))

42      Ollie:       no (only) it was [mine: ((to Ginny))

43      Clarissa:                      [stop it]((to Ollie, standing close

44                   together both holding object but not pulling))

45                   (1.0)

46      Clarissa:    STO:P!

47      Ollie:       it's mine. it's mine. (0.3) °you taked it off me::.°
```

Conversation analysis is the "close examination of language in interaction" (Stivers & Sidnell, 2013, pp. 1-2). It enables the understanding of natural interaction between individuals in formal or informal settings (Clayman & Gill, 2012; ten Have, 2007). This interaction is spontaneous as opposed to something that might arise in laboratory settings (Stivers & Sidnell, 2013). Although the current study used discourse analysis, it is CA-informed. That is, to a certain extent, I applied Jeffersonian transcription used in CA, but the study of language features was not the focus of this study. This fact distinguishes my CA-informed study from pure CA research. Therefore, CA-informed data analysis strengthened my discourse analysis study, which focused on interaction in small group settings from a sociocultural perspective.

Researchers clarified that CA cannot fully reveal human learning (e.g., Gardner, 2012). However, Gardener (2012) conveyed that "CA, with its tools for analyzing and comparing sequences of interaction at different points of time, can be a powerful lens on engagement and participation, knowledge states and understating" (p. 609). CA accomplishes that through the "constant displays of how sequences of actions are understood by the participants" (p. 609). This is also known as the recipient's uptake of what was said by another individual. Analysis of this interactional spoken data is "organizational and procedural" (p. 9). In other words, Mondada (2013) noted that CA studies "the details of action as they are temporally and sequentially arranged, moment-by-moment" in context (p. 32). To understand these actions, Schegloff (2007) defined two key terms: *action formation* and *action recognition.* Action formation refers to how specific actions such as "requesting, inviting, granting" and so forth are engendered as a result of various factors such as the environment and not only language. Action recognition is the not only understanding of the actions of others but also the misunderstandings and misinterpretations that arise.

A clear understanding of the role of interaction in CA is key. Drew (2013) represented interaction in CA as "the contingently connected sequences of turns in which we each 'act', and in which the other's- our recipients'- response to our turn relies upon, and embodies, his/her understanding of what we were doing and what we meant to convey in our (prior) turn" (p. 131). For example, an investigation of interaction between two speakers could examine how one statement was interpreted by another individual and how that second individual's social activity was influenced by the first speaker. For the current study, I focused not only on what was

19

happening, but also the way in which actions were generated. In discourse analysis, the meaning of a sentence can be analyzed in terms of its communication, action, or meaning (Gee & Handford, 2012). In other words, certain types of discourse analysis may analyze what is said as opposed to CA, which can reveal why something was said (O'Reilly et al., 2016). Elements of CA and the addition of the CA perspective of interaction were, thus, helpful additions to my discourse analysis. I aimed to reveal participant responses to teachers that could show how they understood stated comments. Hammersely (2003) pointed out that CA "succeeds in documenting important features of human social interaction that had hitherto been overlooked" (p. 770).

Contrasting CA from other forms of discourse analysis, it is important to note that CA is not about understanding messages in interactions, but how social activity forms. The study of social actions are at the core of CA, differentiating this method from linguistic's focus on language (Seedhouse, 2004). For example, Toerien (2014) expressed that CA centers on understanding social activity through language. To understand such social actions within dialogue, Toerien (2014) characterized the ways in which humans "accept or decline invitations, agree or disagree with assessments, argue and find subtle ways to shift blame away from ourselves we tease, exaggerate and so on" (p. 329). That is, CA makes visible shared-understanding (e.g., situation definition) and guiding of learning through IC. In fact, how speakers reach intersubjectivity through interaction is a key goal of CA (Seedhouse, 2004).

Other IC researchers have applied similar discourse analysis of speech towards understanding meaning of statements made by teachers and students (Estrada 2005; Goldenberg, 1991; McIntyre et al., 2006; Rueda, Goldenberg, & Gallimore, 1992; Saunders & Goldenberg,

2007; Wells & Arauz 2006; Wells & Haneda, 2008). However, those studies did not employ CA with its technical features to reveal how interaction generated specific social actions. I found only one study that applied CA to understand classroom social actions through IC (Chapman de Sousa, 2017). Whereas Chapman de Sousa (2017) studied interaction with children, I investigated IC in higher education settings. Two major dimensions for my analysis were social action (e.g., action formation and recognition, see Schegloff, 2007) and the working towards intersubjectivity. These dimensions match the aims of my research goal to analyze the social actions of instructors who use dialogue as an approach to instruction.

Findings Related to a Sociocultural Perspective

A number of studies related to CREDE have applied what can be characterized as a discourse analysis approach. For example, Wells and Haneda (2005) used transcriptions in their analysis of ICs, but did not apply the technical features and principles of CA. Use of conversation transcriptions to demonstrate aspects of CREDE were also shown in Tharp and Gallimore (1988); however, Tharp and Gallimore's (1988) transcriptions were not as finely detailed as transcriptions in CA. For example, they did not note intonations, pauses, and pitch in their transcriptions.

More recently, Chapman de Sousa's (2017) used CA-informed analysis to analyze teacher interaction with young learners. The aim was to understand interaction between teachers and preschoolers, focusing on ICs. The technical analysis in her study assisted in understanding the interactions at a deeper level with the added information about the interaction, facilitating new discoveries in the data. In a similar way, I aimed to support my discourse analysis, with

21

CA-informed data, showing not only what happened during interaction, but also how students'
thinking may have changed.

Research Questions

For the current study, there were two research questions. First, considering social actions,
how did instructors co-construct ideas with students through IC and other discourse strategies?
Second, were there any differences between instructors who had more experience with IC and
those who did not?

<div align="center">

Method

</div>

Study Design and Context

This research was a multi-case study. Multiple case studies, according to Simons (2014),
are a "major methodology for complex educational and social programs" (p. 456). That is, the
analysis of multiple cases increases the power over single case study designs in terms of cross
examination (Chmiliar, 2010). The question of the necessary number of cases may arise. For
example, Lofthouse and Thomas (2015) used 10 cases in their multiple case study. However, for
multiple case studies, no formula exists to determine the number of cases needed (Small, 2009). I
selected a multi-case study design to make comparisons between instructors who knew about and
used IC and those who did not. I strived to clarify how various approaches to interaction with
students in small group settings differed and were similar in specific ways. The goal was to make
visible to the reader what IC with college students may look like.

This study involved instructors at universities and colleges in the Mid-Pacific region.
Data collection occurred in the spring semester of 2021, which was a year after the sudden shift

to online formats due to the COVID-19 pandemic. In the courses involved in this study, the instructors used the Zoom online platform. The Zoom platform included a feature entitled "breakout rooms" that allowed the instructor to separate students in different "rooms" for students to have small group discussions with the instructor and with peers. The teacher had the ability to move to different virtual rooms to speak to different groups of individuals.

Participants

Two male university professors, one female professor, and one male community college instructor along with their students were the participants in this study. I initially attempted to recruit instructors who were known for their use of discussion in their classes, and asked faculty members in the Office of Faculty Development and the College of Education for nominations. One of my participants was identified in this manner. However, due to the COVID-19 pandemic, faculty at the university taught online, and many taught asynchronously. I then asked other people I knew for suggestions of instructors who were teaching synchronously on Zoom and recruited participants from these nominations, if the instructors were using small group discussions in their classes.

Table 1 below summarizes participating instructors' demographic backgrounds and information on their institutions and courses that were the focus of the study. Participants also included a total of 29 students in the small group sessions that were recorded during the instructors' lessons. There were 23 female and 6 male students, and the number of students in the small groups ranged from two to five. All of the participants signed informed consent forms.

Table 1

Instructor Background Information

Name	Type of institution, Depart.	Student level of study	Subject	Instructor's education and field	Level of awareness/use of CREDE
Michael	Community College, Math	Associate's degree	Mathematical Reasoning	MA in education	Not aware of CREDE
Billie	Public 4-year, Ed Admin	Graduate level	College Student Development	PhD in Education	Aware of CREDE but did not intentionally apply it
Tom	Private, Counselling	Graduate level	Counselling Theory course	PhD in Clinical Psychology	Knowledgeable of CREDE and IC
Alice	Public 4-year, Education	Undergraduate	Pre-Service practicum for elementary and special education	PhD in Education	Knowledge of CREDE principles and intentionally applied them on the days of recording

Procedures

The four instructors recorded two small group discussions on the ZOOM online meeting platform. The purpose of two recordings was to see if there were changes from one lesson to the next. The instructors chose which discussions they video recorded, and I requested that they choose lessons that represented dialogic teaching. There were five days between Michael's two videos, and eight weeks between Billie's, four weeks between Tom's, and 1.5 weeks between Alice's. As previously mentioned, this is a microgenetic study of interactions. Thus, I reasoned

that even one video held the potential to provide evidence of psychological change, moment-by-moment in a shorter time frame than one would see in a longitudinal study. .

The length of the recordings varied, ranging from approximately 2 minutes in the case of Michael to 43 minutes in length in the case of Tom. Once I received signed consent forms from participants, I gave a list of names to each instructor. For days of instructional recording, the instructors then organized those students into Zoom breakout room groups and had students who had not signed the forms in separate breakout rooms. The instructors recorded their conversations only with the groups that had signed the consent forms and then sent those videos to me.

Data Analysis

I used the software application Otter.ai to create initial transcripts of the video recordings. I then uploaded the transcriptions and the video recordings into the Atlas.ti software platform for analysis. On the Atlas.ti platform, I checked the accuracy of Otter.ai's transcriptions through multiple viewings of the video recordings. In this way, I *familiarized myself* with the data prior to the discourse analysis and CA (Lester & O'Reilly, 2019) and noted key social actions on the transcriptions of all video recordings. I analyzed the video content in the order that I received it from the teacher participants over the semester. However, I organized my findings in the Results section by the level of instructors' understanding and use of IC. Although the instructors had told me the extent to which they were familiar with IC and CREDE, I confirmed their use of the practices in the video recorded discussions through my data analysis.

I began the analysis by first applying *unmotivated looking* over the data, or reviewing data with an open mind without the use of specific *a priori* targets for study (Sacks, 1992). However, Wong and Waring (2010) rationalized that unmotivated looking "does not exclude having a general area of interest" (p. 6). In my case, I was broadly interested in how ideas were co-constructed. During this stage of unmotivated looking, I repeatedly viewed and listened to data searching for interactions between instructors and students that caught my attention. This is how I selected the extracts that I further analyzed, applying Schegloff and Sacks' (1973) critical question: "Why this now?" (p. 299). In other words, why did the instructors react in this particular way, following a student statement? I then applied technical CA transcription through multiple listenings and transcribing of those sections. See Table 2 for a list of common symbols and their meanings, used in Jeffersonian transcriptions.

Once I had selected the extracts, I applied Drew's (2015) framework for CA. This involved eight steps: (a) review data for social actions, (b) investigating sequences of turn-taking (e.g., speaking between two individuals), (c) inspection of details, (d) study of responses between speakers, (e) pinpointing elements of language used between speakers, (f) gathering of multiple cases of observed phenomena, (g) depicting emergent patterns, and (h) writing up the results.

Table 2

Jeffersonian Transcriptions Symbols used in the Conversation Analysis

Symbol	Meaning	Example
< >	slow down in speech	I <think> it was a bird.
> <	speed up in speech	I am >certain it was a bird<.
↑	raised pitch	I ↑think it was a bird
↓	lowered pitch	I am ↓not sure
.	downward intonation	I know.
?	upward intonation	Maybe it was a bird?
–	abrupt halt in speech Glottal stop	I thi- I think it was a bird
[]	Simultaneous speech	Alice: I think it was [a bird] Billie: [bird]
:::	elongation of utterance	I think u::m it was a bird
__	emphasis	I know it was a bird
.hh	Intake of breath	I know it was a .hhh bird
(2)	two second gap in speech	I think (2) it was a bird
(.3)	3 microsecond pause	I think it was a (.3) bird
$	smiley voice	it was $so funny

Role of the Researcher

In this section, I detail my positionality, disclose potential biases for data collection and analysis, and clarify what I did to guard against those possible biases. A conceivable bias was my

27

perception of IC as effective for student learning. I had previously studied about IC and believed that it was impactful for students in terms of contextualizing course content. I had used elements of what I had learned about it in my own teaching. Thus, it was key for me to be accepting of situations where IC was not effective and to be aware of the social context for all instructors and students. I was careful to be aware of negative or overly positive thoughts about the data. Further, I focused on what teachers were doing as opposed to measuring student learning.

Regarding my positionality, teaching English as a second language has been my professional concentration since 2001, and for most of this time, I have been working with adult students. This includes instruction at three different universities with students from a variety of countries. My teaching experiences with adult learners assisted me in noticing what was happening during analysis of video recorded lessons for online classroom interaction. On the other hand, I was careful not to accept that teachers using questioning meant socratic teaching or that using genuine questions was better than using questions for which the teacher already knew the answer.

Regarding the participating instructors, I had no prior contact with Michael or his campus. I did, however, know Billie prior to data collection. I took the same course that Billie was using for his video recordings one-year prior, although the course I took from Bille was in-person, rather than online. My experiences in Billie's class helped me to understand the context of the group discussions on his recordings. Conducting this study was my first opportunity to meet with Tom, but I was aware that he had been a part of previous publications related to CREDE. It was important that I did not assume that Tom was using IC and I kept this

in mind, as I analyzed his data. Last, in regard to Alice, I had not met her prior to the study, however she was a professor in the same college of which I was a part. I knew that she was knowledgeable of and skilled in CREDE standards prior to meeting her. As I did with I guarded against biases of assuming that she was applying IC during the recorded sessions by focusing on what she did and how those actions did or did not reflect criteria for IC.

Concerning the use of discourse analysis, I have worked on CA projects in past graduate courses. To further my understanding, I participated in a CA data analysis group. An extract was reviewed by the CA data analysis group in a two-hour session, which gave me a model for the analysis of other extracts. Regarding initial interviews with instructors prior to data collection, I am experienced in the use of semi-structured interviews from a number of previous graduate course projects. For example, my master's scholarly paper in 2015 made use of semi-structured interviews. From those projects, I gained awareness of interview question design and the process of interview question review. Examples of this are reflective and interrogative processes for qualitative question review as spelled out by Agee (2009). These measures strengthened the effectiveness of my pre-data collection interview sessions.

Results

In this section, I present the individual case studies prior to a cross case analysis. The subsequent cross case analysis presents themes that cut across all of the instructors' social actions. In presenting the results, I have added a certain degree of Jeffersonian transcriptions (see Table 2), making this research CA-informed. That is, due to my purpose of showing interaction in longer extracts and with a high number of 14 extracts in this study, my use of Jeffersonian

transcription did not focus on aspects such as intake of breath or micro pauses by participants. In other words, use of Jeffersonian transcription was supplementary to my discourse analysis.

Individual Case Studies

In the ensuing sections, I present the individual case studies. For each instructor, I describe (a) their background, (b) key social activities in the extracts I analyzed, and (c) my closing comments about the instructors' lessons.

Case 1: Michael

Background information. Michael held a master's degree in education and was a community college math course instructor. Michael's course centered on the development of mathematical reasoning. For this study, he recorded seven different Zoom breakout room sessions over two separate lessons. Michael led the recorded breakout sessions, which involved 2-3 students in each group. These small group sessions followed individual work by students. Thus, the focus of the small group sessions was for Michael to check students' understanding of already solved problems and to afford each student space to voice their mathematical reasoning, rather than for collaboration to solve a particular mathematical item. Over his years of teaching, Michael came to focus on the use of dialogue with students in his approach to instruction of mathematics. Michael was not, however, aware of the CREDE standards or IC prior to this study. His methods of teaching through dialogue were self-developed through his teaching experiences in combination with his past studies in a College of Education program. In terms of historical and cultural influences, I noted that adult learners in Michael's class were community college

students. While some were in their early 20s, others were middle-aged, and one participant was of retirement age.

Key social activity. Analysis of student and teacher interaction revealed a clear pattern of questioning students and providing feedback in terms of student accuracy of response as shown in Extract 1. Extract 1 involved Michael and two students, John and Mia. While John was in his 20s, Mia was of retirement age. In each extract of this study, I represented teacher statements in bold font in order to bring attention to the social actions they represented. In Michael's case, the standard practice in all of his videos was for students to complete practice items individually and then come together in small group Zoom breakout rooms to discuss their answers.

A specific pattern of questioning. In Extract 1 below, Michael's conversation targeted one student at a time. Michael used a pattern of questioning to check students' states of understanding and mathematical reasoning. Extract 1 presented how Michael initiated a response from students with a question about a mathematical function, the way in which the student answered, and the means by which Michael evaluated the students' answer.

Extract 1 *(Michael Session 1)*

```
01   Michael:   so tell me either any of you (looking at computer screen)

02   Michael:   tell me how you got N to the ninth.(.8)

03   John:      You add th- the five N to the five (looking at computer
                screen)

04   John:      power plus M to the fourth

05   John:      power these- [uh   powers]

06   Michael:               [good
```

31

```
07    Michael:      ↑okay Mia Mia how come how

08    Michael:      come we added those Mia?

09    Mia:          Why did we add them. uh (.9) when  (looking at computer

                    screen)

10    Mia:          you multiply (.8) uh (1) uh (.9) you just add the

11    Mia:          exponents to [the- uh

12    Michael:                   [very good perfect so how come you didn't

13    Michael:      add the negative two also.]
```

In Lines 1 and 2, Michael invited either John or Mia to recount the process of solving the mathematical equation. John took the initiative to respond to the teacher's elicitation, and explained the procedure of solving the equation (Lines 3-5). Recognizing a correct response, Michael interrupted John's explanation in line 6. We see the simultaneous talk as John attempts to finish his sentence but stops due to the teacher taking the floor in line 6. In other words, Michael displayed acceptance of John's answer with the statement "good" (Line 6) at the same time as John was speaking. Line 6 served as evidence that the initial question (Lines 1-2) was a *known-answer* question that had been posed by the instructor.

From Line 07, another set of questioning emerged. First, Michael elicited a question directly to the student Mia (Line 7). Michael asked, "how come how come we added those?" In this case, Michael's initiation was a follow-up question, requesting more information on how to solve the mathematical problem that was originally referred to in Lines 1-2. Mia restated the instructor's question, clarifying the focus of the question in her mind (Line 9). Mia explained a mathematical procedure (Lines 9-11), which answered the instructor's elicitation. There was

simultaneous talk as Michael recognized a correct response by Mia and interrupted her explanation. That is, Mia did not complete her sentence once the teacher said, "very good" with falling intonation. The instructor showed that the student's response was correct and then praised her saying "perfect." That particular response testified to Michael's question in Line 6 as being another *known-answer* question. It is important to note that Lines 7-13 demonstrated another pattern of questioning, similar to Lines 1-6 with the student John.

Leading students through questioning and explanation. Extract 2 included three participants: Michael, Sophia, and Jen. Sophia was in her 20s and Jen was a middle-aged student. In addition to the successive patterns of questioning in Extract 1, other types of questioning surfaced. For example, in Michael's second recorded small group session, he guided Sophia through a series of questions during the session as seen in Extract 2.

Extract 2 *(Michael Session 2)*

```
01   Michael:   whudda we do. (looking at computer screen)

02   Michael:   remember we're using the square root

03   Michael:   property. Whhudda we do to

04   Michael:   both sides in order to ↓solve

05   Michael:   for number one?.

06   Sophia:    Um:::    (blows lips like a motor boat)

07   Michael:   look at your <previous> problems

08   Michael:   that we did. What did we

09   Michael:   do to both sides.

10   Sophia:    we::: divided. Did we divide?
```

```
11    Michael:    that what we did up here?

12    Michael:    we divided? (.3) we divided?

13    Sophia:     That ʼlooks like a [divide]=

14    Jen:                          [square root].

15    Jen:        find the square root

16    Michael:    Okay so what do we do both sides.

17    Jen:        [square root]

18    Sophia:     [we find the square root] yeah

19    Michael:    square root both sides. good.
```

At the start of Extract 2, Michael elicited and invited the two students to speak with the question, "What do we do?" His next statement offered guidance on solving that problem in terms of explanation of a focus of the lesson (Lines 2-5). Therefore, his initial question was another known-answer question. The question and elaboration by Michael induced Sophia to utter an elongated "um," (Line 6) which signified her searching for an answer about to answer Michael's question. Noticing the elongated "um" by Sophia, Michael then provided more teacher guidance (Lines 7-9). That is, Michael suggested that Sophia "look" or think back to previously solved problems of a related nature. Michael's suggestion evoked Sophia's response to the original teacher prompt with a hesitant answer "we:::: divided" followed by student *self-initiated repair* of that answer. A self-initiated repair is the correction of trouble in speech by the same speaker (Schegloff et al, 1977). Sophia rephrased her original answer in the form of the question, and asked, "Did we divide?" In response to Sophia's answer and repair, Michael encouraged Sophia to reconsider her response with a *reversed polarity question* (see Koshik, 2002). Reversed

34

polarity questions are the use of questions of a yes/no nature to indicate there is a problem in what another speaker has expressed (Koshik, 2002). In Extract 2, the reversed polarity question was the teacher's repetition of the question, "We divided?" Sophia recognized the repeated reverse polarity question by Michael as feedback indicating that she had given an incorrect answer. Sophia subsequently performed an *other-initiated self-repair* of her previous answer. This is a restatement of the previous answer by Sophia, initiated by Michael's reverse polarity question (Schegloff et al., 1977). Sophia stated, "that ꜛlooks like a divide" (Line 13), expressing uncertainty with heightened pitch on the word "looks" as in the phrase "it seems" to be a divide. The other student, Jen, recognized from the interaction between Michael and Sophia that Sophia's answer was incorrect. That prompted Jen to voice an alternative answer of "square root" (Line 14). Sophia knew that she did not have the correct answer because of the recent interaction with Michael, and so Sophia echoed Jen's answer of "square root" (Line 15). To assist students, Michael then posed another known-answer (answer known to the teacher) question asking what students should do to both sides of the equation (Line 16). Sophia and Jen restated the answer of "square root" simultaneously (Lines 17 and 18), which is what they had previously said in Lines 14 and 15. Michael echoed the answers given by Sophia and Jen, indicating that "square root" was indeed the correct answer and gave confirmation and praise to the students.

Closing comments. The key social action performed by Michael during these sessions was the questioning of students. Some questions were focused on recall. Instances of those were his questions of "What did you get for number 4" and "What do we do to both sides?" However,

35

many of the teacher generated questions elicited a great deal of reasoning in students. For example, students voiced their reasoning for mathematical steps taken. In one case, Michael asked, "How come we added those" and in another, he asked "Why do we square root both sides?"

A third use of questioning by Michael was the application of known-answer questions to guide students towards new understanding or reframing their conceptualization of mathematical reasoning. For example, in Extract 2, when the instructor asked "what do we do to both sides in order to solve for number one?" The student searched for an answer, uttering, "Um::::::" which prompted Michael to give guidance by stating, "look at your <previous> problems that we did." Michael then used the known-answer question "What did we do to both sides?" This particular question was an instance of guidance for the student. Although the next response by the student was incorrect, this type of questioning eventually did lead to the student understanding of the correct method of solving the mathematical problem towards the end of the interchange in Extract 2.

On the whole, there was a great deal of dialogue in this mathematics course. For example, the ratio of student and teacher talk time was balanced due to the high number of questions that the teacher asked during each small group Zoom breakout room session. The pace of the student-teacher dialogues was quick with continuous questioning by the instructor. In one instance, following an intense cluster of questions, a student exclaimed a sigh of relief. It was a challenging, but supportive, environment as Michael led the students to solve problems through his questioning techniques.

The instructor clearly controlled the flow of the discussions during these activities. For example, in none of the recorded small group sessions did a student ask the instructor a *content question,* or a question about a concept. Students also did not ask the teacher to explain his reasoning during these small group sessions. Further, students in the group did not ask other students content questions. The students had learned a role of answering questions posed by Michael during these Zoom breakout room sessions.

Case 2: Billie

Background information. Billie held a PhD in Educational Administration and was an assistant professor in the College of Education. For this study, Billie recorded a graduate-level course focused on developmental theories, and data collection included two recorded lessons with students. In both sessions, Billie presented a case study scenario for the graduate students to read and analyze. The subjects of the case studies revolved around college student life and potential problems in either dormitories or on campus. Graduate students taking this course held positions related to college advising and in student service departments. After introducing the case study scenario in the main Zoom room, Billie separated students into smaller breakout rooms. The purpose appeared to be the creation of small group discussions in which students could reflect on course readings and discuss theories and approaches to deal with the presented case studies. Billie spent time visiting each Zoom breakout room during the lesson.

Key social activity.

Teacher comments on student-to-student discussions. Extract 3, below, involved Billie and five students: Emma, Audrey, Judy, Bob, and Leah. Following students individually reading

the case studies, they asked each other questions and expressed their thoughts about ways to

address the posed scenario. In the first recorded session, the characters in the case study were

having difficulty in their dorm room. As a means to address the circumstances, Billie's student,

Emma, a woman in her 20s, proposed the Hawaiian restorative justice approach *ho'opono pono*

(a process of discussion and remediation) to the group. Extract 3 showed how Billie guided

students during the discussion session. Following Billie's statements, the student Audrey, in her

30s, added information about the concept which caused the student Judy, also in her 30s, to

generate an insightful point. Extract 3 demonstrated how that insightful point developed through

small group interaction. I made limited use of Jeffersonian transcription in Lines 35-56 due to

extended turns at talk between participants.

Extract 3 *(Billie Session 1).*

```
05:22

01    Emma:       Hooponopono .hhh in a way forms with validation? (.9)

02    Emma:       student- um the identity <theories?> (3) connected into

03    Emma:       theories because we're um validating them just by

04    Emma:       communicating(1.5)and showing that um she's being ↑heard

05    Billie:     (1) Yeah thanks Emma and forgive me for  (looking at
                  computer screen)

06    Billie:     hopping in and out uhh But uh I was just

07    Billie:     gonna uh -check in to see have you

08    Billie:     shifted into that second realm

09    Billie:     of thinking about the series of frames-
```

```
10    Billie:    you've done a nice job and kind of

11    Billie:    capturing those immediacy moment things

12    Billie:    for sure (2.5) thanks for getting us rolling into-and

13    Billie:    feel free=

14    Audrey:              =by the way

…                (some off topic discussion about technical difficulties)

06:45

35    Audrey:    Emma I like how you um brought in the Ho'oponopono theory?

36    Audrey:    I meant we've definitely done that on our campus before

37    Audrey:    Um and ↑not exactly sure on how the results worked out.

38    Audrey:    but hah but first we got permission Someone-someone

39    Audrey:    shared with me that there was an issue going o::n.

40    Audrey:    and then got permission from two students if they were open

41    Audrey:    and willing to-to talk about the issue. And then they both

42    Audrey:    <were> and then just creating that safe environment

43    Audrey:    to have an open conversation? and to be respectful? of

44    Audrey:    what one another has to say?  and while one person is

45    Audrey:    speaking the other is not and whatever So I think that's

46    Audrey:    a good uh (2) theory to bring in. yeah

47    Judy:      And I think also we have to be careful

48    Judy:      that we're not applying (1.8) culturally relevant things

49    Judy:      that aren't relevant to them? - to how they identify?

50    Judy:      you know like their ethnic identity? So like- hoponopono

51    Judy:      is- is a Hawaiian thing. Right? So like- if the student
```

39

```
52    Judy:        is the Chamorro I think you have to just be aware of that

53    Judy:        too- of not expecting them to follow something because

54    Judy:        you follow it? I think just have to be

55    Judy:        really careful about that.

56    Audrey:      Yeah <definitely>.
```

Billie entered the Zoom breakout room amid student-to-student discussion at 3:21. He

listened to the discussion between Leah, Audrey, Bob, and Emma. At the start of the Extract 3, at

5:22, Emma connected her background knowledge with Hawaiian culture to the case study issue

and discussion. Specifically, Emma suggested the concept of "ho'opono pono" (Line 1-4), a

system of restorative justice. After listening to 2 minutes and 27 seconds of the students'

discussion, Billie then entered into the conversation by showing appreciation for one the

students' solutions (Line 5). He then offered guidance to the group with the statement "check in

to see have you shifted into that second realm of thinking about the series of frames" (Lines 7-9).

In other words, Billie's guidance was in the form of reminding students that another stage of the

discussion should incorporate frameworks of college student development that they had been

studying. Billie subsequently gave praise of the group's progress with the statement "you've done

a nice job" (Line 10) and provided an example of what was good about their discussion by

pointing out that the students captured "those immediacy moment(s) for sure" (Line 12). Billie

then displayed another show of appreciation, stating "thanks for getting us rolling [into the

discussion]" (Line 12). This was the second form of encouragement in the form of a show of

appreciation in Extract 3 and Billie's one turn-at-talk. Billie then gave autonomy to students to

take the discussion where they wanted it to lead, stating "feel free" (Line 13). In other words, we see multiple actions by Billie in one turn-at-talk.

After some off-topic discussion about technical difficulties, the students' discussion progressed to a deeper degree of understanding. First, Audrey took agency and guided the conversation back to Emma's sharing of the concept of hoʻopono pono. That is, Audrey recalled her campus's use of the concept generally, but did not describe a particular example. This explanation of the Hawaiian concept prompted another student, Judy, to then share her opinion about the application of hoʻoponopono in the multicultural environment of Hawaiʻi. In particular, Judy expressed a need to be sensitive when applying one cultural concept to another ethnic group. Audrey then displayed her agreement with Judy's point.

Teacher encouragement leading to student empowerment. Extract 4, below shows the means by which Billie encouraged students during the small group discussion about a case study scenario involving conflict between two students. In the case study, two students were having a conflict related to dorm life. One of the case study students had come to an advisor for help. VBillie's encouragement led the student Bob, in his 20s, to take agency and control the group conversation.

Extract 4. *(Billie Session 1)*

```
08:21

01   Bob:      I was thinking like- how much of a capacity?

              (looking at computer)

02   Bob:      we have to like get <involved?> Cuz you know like

.             (8:29, extended turn at talk)
```

10	Bob:	(8:52)I <u>mean-</u> like trying to bring it to <u>their</u> staff
11	Bob:	as well So. oh can <u>you</u> help <u>me</u> as well. like those
12	Bob:	kinds of strategies
13	Bob:	(3) If that makes sense hah hah
14	Billie:	**It does Bob.**
15	Billie:	**I'll hop in <u>real</u> quickly and then hop out**
16	Billie:	but **I think that (3.2) for the purposes of our session**
17	Billie:	**and as we talk as a cla::ss you're welcome to**
18	Billie:	**exte::nd the case in a direction that makes**
19	Billie:	**sense for <u>yo</u>u as a team? uh**
20	Billie:	**and you can add details**
21	Billie:	**that would allow you to (2) move down a path where you**
22	Billie:	**want to offer advice and be more specific. So**
23	Billie:	**you could specify an office in this case**
24	Billie:	**if you wish or you could uh <u>limit</u> an office if**
25	Billie:	**you wish**
26	Billie:	**Uh But <u>yeah</u> I think it's a well**
27	Billie:	**stated thing**
28	Billie:	**And (1) often these case studies will give**
29	Billie:	you (2.5) **a <u>little</u> bi** information and you'll have
30	Billie:	**a whole <u>lot</u> of questions haha about- uh (.8) so**
31	Billie:	**yeah that's a <u>gr</u>eat point (7.5)**
32	Bob:	Did we kind of like want to $create that like-

42

33   Bob: are we allowed to bring both of them in?

In Lines 1-12, Bob expressed his thoughts regarding the case study the group was analyzing. Bob invoked the voice of one of the case study characters (Line 11). Following his turn at talk, there was a gap of silence with no response from group members. That caused Bob to add, "if that makes sense" followed by his own laughter (Line 13). Billie's response' to Bob's statement and laughter was to reassure Bob by stating that the student did make sense (Line 14). The teacher then provided guidance to the group in terms of discussing the case study (Lines 16-25). Billie closed his turn-at-talk with another praise of Bob's point (Lines 26-27). Billie then shared his opinion about these types of case studies and gave another statement of praise to Bob (Line 31). To recap, this extract of one turn at talk by Billie demonstrated three different instances of encouragement of Bob. The encouragement led Bob to then take agency and steer the conversation into a new direction with a suggestion of what the group could do to solve the case study problem (Lines 32-33).

Another video clip showed similar social activity of Billie allowing students to discuss the case study amongst themselves and then providing feedback after an extended period of time. For example, in the second recorded lesson, Billie listened to students from minutes 1:43 through 11:21 as they discussed among themselves, and then he provided feedback.

Student-student interaction and teacher assurance and guidance. Extract 5 was a continuation of the conversation from Extract 3. Similar to Extract 4, Billie's guidance and praise were evident, but Extract 5 highlights Billie's extended periods of listening to students' talk,

followed by a long speech turn. Extract 5 began with two students, Audrey and Leah, continuing

their discussion of case study characters.

Extract 5.*(Billie Session 1)*

(11:42)

```
01   Audrey:   she maybe? she tried to make an effort?

02   Audrey:   to- um to speak with her roommate? And and

03   Audrey:   now this is a struggle because maybe

04   Audrey:   the talking didn't help.

05   Audrey:   Or like (.)she just doesn't get it.

06   Leah:     That's true. and then she's like-

07   Leah:     >I need a room change< today

08   Leah:     So it shows like that urgency?=

09   Leah:     =urgency Yeah.

10   Billie:   (6.5) Yeah. as I hear your talk as a grou::p

11   Billie:   i::t sort of reinforces what we talked

12   Billie:   about the (.7) the self in the crisis moments?

13   Billie:   as additions to think about

14   Billie:    ↑Can we $ have  these conversations now?

15   Audrey:   yeah

16   Billie:   or and again freedom of extension for you

17   Billie:   folks for how you want to have the case

18   Billie:   roll out (6) ↑Good work I'll be back
```

Audrey shared her analysis of the case study participants (Lines 1-5). At the end of her turn-at-talk, Audrey suggested that a character didn't "get it" (understand). That statement prompted another student, Leah, to agree and respond, "that's true" (Line 6). Leah then supported Audrey's analysis by referencing a statement from the case study (Lines 6-8). That is, Leah invoked the voice of a character in the case study (Line 7) to support Audrey's contention that the character was confused. Leah then analyzed a character as being in a state of "urgency." Audrey agreed with Leah's statement and echoed Leah's statement of "urgency" (Line 9). Audrey and Leah have collaboratively co-created knowledge about the state of mind of the character and that initiated a response from Billie who agreed, portraying acceptance of S3's and S4's responses (Line 10). In other words, there was intersubjectivity or shared understanding (Heritage, 1997) between Audrey, Leah, and Billie. Billie had been listening for 2 minutes and 23 seconds to the students' discussion (Minutes 9:56-12:19). Billie then stated (Lines 10-13) what he had noticed while listening to the recent set of turns between Audrey and Leah. That appeared to motivate Audrey to display *uptake* (Line 15) with a "yeah" statement. Next, Billie posed a hypothetical question that could lead to further discussion (Lines 14). Billie did not pursue the question he posed to be answered by students. Rather, he signaled to students that they had the freedom (autonomy) to take the discussion where they wanted it to go (Line 16-18). Billie praised students' efforts in the discussion and then signaled the ending of his turn-at-talk and for students to resume student-to-student dialogue with the expression "I'll be back" (Line 18). Billie then switched to another room.

Closing comments. Three main social actions emerged from analysis of Billie's social actions over two lessons. The first was the frequent encouragement of students. For example, in Extract 4, Billie's three instances of encouragement for the student Bob, led Bob to take agency in leading the student-to-student discussion in his turn at talk, immediately following Billie's statements. The second emergent social action was Billie's guidance of students. Third, Billie empowered students, by giving them autonomy to take the discussion where they wanted to go, as in Extract 3. He additionally took a step back in the discussion, attentively listening. That facilitated the student-to-student dialogue and greater participation by the students.

Overall, the goal for students appeared to be to discuss how to deal with the problem posed in the case study reading. Accordingly, there was more student talk time than teacher talk. The teacher did provide guidance. However, the turn-taking specifically between the professor and the students was at a lower rate than the student-to-student interactions, which was by Billie's design. Billie did not question students' statements or rephrase what students said.

Case 3: Tom

Background information. Tom was a professor of psychology who held a PhD in clinical psychology. His course focused on counselling theories and was part of a graduate-level counselling program. Tom recorded two Zoom breakout room sessions during two separate class sessions. He specified that he was aware of the CREDE Standards and IC.

Key social activity.

Multiple actions in one turn: Empathy, analysis, and stating of opinions. The following extract presents Tom's social actions such as showing empathy, analysis of students' statements,

46

and voicing of opinions. Prior to the start of Extract 6, Chloe, a student in her 20s, requested

clarification on Cognitive Behavioral Therapy (CBT). Extract 6 started off with Chloe describing

her current state of understanding. Although Extract 6 displays only two turns, my analysis

unpacked multiple actions by Tom in one turn-at-talk. Tom's response modeled complexity of

thought in response to student statements.

Extract 6. *(Tom Session 1)*

(2:44)

```
01    Chloe: so we provide them with some kind of-

02    Chloe: you know- context? with like the CBT::?

03    Chloe: but we're also incorporating the ʹperson

04    Chloe: centered approach? by like letting them

05    Chloe: explore their (.8) like thou::ghts?

06    Tom:   Mm hmmm

07    Chloe: so:: yeah I guess I'm a little bit confused

08    Chloe: on tha::t.

09    Tom:   right. right. Now I think you're (.7) Chloe

10    Tom:   I think you a::re identifying that

11    Tom:   there is a lot of overlap with this

12    Tom:   and that existential sort of frameworks

13    Tom:   and issues are- are part of what a person

14    Tom:   centered counselor would be mindful of

15    Tom:   as we::ll. especially cuz I mean a big part

16    Tom:   of an existential approach is to (.3) acknowledge
```

```
17    Tom:    the person's experience in their- and get a sense

18    Tom:    of what it's like to be them. And and so in

19    Tom:    some ways I think it's a really good observation

20    Tom:    is that we don't have these discrete boundaries

21    Tom:    between one kind of counseling format (.6) and another

22    Tom:    so many of them sort of overlap
```

In Lines 1-2, Chloe clarified what she had learned in the course and displayed her confusion. There was prefacing of the next statement with the word "but" and Chloe's statement hinted at her confusion (Lines 3-5). Chloe then explicitly announced that she was indeed confused (Line 7). That brought Tom to display acknowledgement of Chloe's situation, with the utterance "mm hmm" (Line 6) within Chloe's turn of speaking. Chloe concluded her point, prefacing that with the discourse marker "so." (This prompted clarification from Tom. Chloe prefaced her concluding turn-at-talk with the discourse marker "I guess." This particular discourse marker is sometimes used to represent an individual making a discovery, realization, or conclusion (Kärkkäinen, 2007). Following the discourse marker "so," Chloe voiced her state of confusion regarding the counselling theory. Tom once again showed understanding and empathy of the students' confusion in the next turn with the repetition of the phrase "right" (Line 8). Tom then analyzed Chloe's current state of confusion with the content of the course (Lines 9-15). To accomplish that, Tom detailed why the content can be confusing (Lines 15-17). Tom began the closure of his turn-at-talk by prefacing a statement of opinion with the expression "and so." Tom then conveyed his opinion (Lines 19-22), which was built up to by previous statements.

Guiding students towards new understandings. The following extract is a continuation of the discussion of counselling theories in Extract 6. In Extract 7, Tom guided two students, Zoey, a middle-aged woman, and Chloe, navigating them through states of confusion about the course content. Through the dialogue, Chloe's understanding became clear regarding what she had been doing prior to this conversation with the theories they had been studying.

Extract 7. (*Tom Session 1*)

```
26    Zoey:  Chloe you make a really good point because

             they are- they seem uh very similar to me too.

27    Chloe: Mmmhmmm

28    Tom:    (3)so you guys both see then that is a lot of um there's

29    Tom:    a lot of appreciating that the client's

30    Tom:    phenomenology their cognitive process (2) and so

31    Tom:    maybe cognitive behavioral ↑might be a little bit more of

32    Tom:    what focused?   ↑perhaps an existential

33    Tom:    approach per se?

34    Tom:    it might be identifying more the specific

35    Tom:    errors?

36    Tom:    that a person might be making. those judgments

37    Tom:    you know have more cognitive approach. um

38    Tom:    whereas I think an existential standpoint would

39    Tom:    be not looking at cognition as errors but as

40    Tom:    just appreciating what their- their larger concerns are.

41    Tom:    You know=
```

```
42     Chloe: =right yeah I guess I'm kind of like merging

43     Chloe: Becks like like studies on depression and how

44     Chloe: he dealt with tha:::t?
```

Zoey praised a previous point made by Chloe (Line 26). It was a form of validation and

reassurement that Chloe had not been the only one having challenges with the theories being

discussed. Chloe acknowledged the praise given to her by Zoey with an "mmhmm" (Line 28).

This was a demonstration of the type of student-to-student interaction in Tom's session. This

adjacency pair by Zoey (Line 26) and agreement by Chloe (Line 27) then induced Tom to speak.

Similar to actions in the previous excerpt, Tom once again gave an analysis (Lines 28 -33) of

student-to-student interaction in Lines 26 and 27. This analysis was prefaced by the discourse

marker "so." Tom then expressed his opinion regarding student statements (Lines 34-37). He

ended his term with another statement of his opinion (Lines 38-41). The final statement in Tom's

turn was the discourse marker "you know" which has been considered as an invitation to

listeners to make inferences to what has been said (Jucker & Ziv, 1998). At the same time, Tom's

use of "you know" invoked *alignment* in terms of understanding and affiliation (Clayman &

Raymond, 2021) as evidenced by Chloe then agreeing in the next turn. Chloe stated "right yeah"

(Line 42). In other words, Chloe demonstrated uptake of Tom's statements and intersubjectivity

and alignment (Line 42) (see Drew, 2013, p. 132). A key point is that Chloe then announced her

revised understanding of how she was processing the theories they were learning (Lines 42-44).

Chloe prefaced that new understanding with an "I guess statement" (Line 37). Again, "I guess"

statements have been found to convey discoveries, realizations, or conclusions (Kärkkäinen,

2007). In other words, Chloe's framework of understanding had now been altered. In sum, the dialogue with a peer and the instructor promoted Chloe's self-stated and re-clarified understanding of concepts.

   Analysis, interpretation, and working towards intersubjectivity. I uncovered a number of different social actions within one turn of Tom's speaking in Extract 8. Extract 8 was a continuation of the discussions in Extracts 6 and 7. In Extract 8, a student in her late 20s, Riley , compared psychoanalysis with CBT. Tom's interpretation of Riley's statements revealed instances of reaching intersubjectivity following instances of complications in understanding.

Extract 8. *(Tom Session 1)*

```
(6:38)

01   Riley: It ↑seems less <structured> and having

02   Riley: less technique um than CBT for instance.

03   Tom:   (2)Even psychodynamic kind of perspective

04   Tom:   had technique with it right?

05   Riley: Mhmmm

06   Tom:   Oh yeah. So there's not a lot of guidance.

07   Tom:   So what you're saying Riley is not

08   Tom:   a lot of <specific guidance> to to to have

09   Tom:   counselors adopted approach to say do

10   Tom:   this or do that

11   Riley: right right  (nodding)
```

```
12    Tom:    Yeah  that makes sense to others too?

            (other students nodding)

13    Tom:    (2) Yeah. yeah.
```

Lines 1-10 present an interchange that led to signs of intersubjectivity in Lines 11-12. Riley, reported what she had noticed about a counseling theory (Line 1-2). Tom reacted by adding more information to S2's statement (Lines 3-4). That brought Riley to agree with Tom, working towards alignment in thought (Line 5). That led to another show of agreement and interpretation of Riley's point by Tom (Line 6), which was prefaced by the discourse marker "so." There was further interpretation by Tom prefaced the phrase "so what you are saying is" (Line 7). That touched off Riley's agreement again with Tom's interpretation (Line 11). In this case of agreement, Riley said, "right right." That combined with other students nodding, caused Tom to utter the discourse marker "yeah" and repeat it (Line 14).

Managing conversations and maintaining a speaking balance. Extract 9 is another section of the discussion about counselling theories. This excerpt demonstrates Tom's strategy of intentionally managing the conversational balance between group members. In Extract 9, Chloe is discussing helping youth deal with a death in the family.

Extract 9. *(Tom Session 1)*

(10:01)

```
01    Chloe: Letting them know that their (looking at computer screen)

02    Chloe: loved ones or maybe in <heaven> or you know >whatever

03    Chloe: it is that they believe< just like help
```

```
04    Chloe: them you know cope with what they're going through.

05    Tom:    interesting Chloe (.)

06    Tom:    so you'd you'd kind of be comfortable

07    Tom:    with bringing in a sort of a- a religious framework

08    Tom:    almost to that- try to explain with a child like

09    Tom:    in Riley's example um of what <may be> happening.

10    Tom:    Um and and Zoey can you think of any concern? you

11    Tom:    might have about bringing in a religious framework to

12    Tom:    that? Or you have feedback for Chloe on that?

13    Zoey:  um I don't know necessarily about (1.2) <spiritual> religious

14    Zoey:  aspects
```

Extract 9 showed the intentional inclusion of three students into the discussion by Tom. First, Chloe shared an opinion about how to help students understand a crisis in the home (Lines 1-4). Chloe used the discourse marker "you know," twice in lines 1-4, which as previously mentioned, could invoke "alignment" in terms of understanding and affiliation (Clayman & Raymond, 2021). However, key to note was a repair by S1 following the first use of "you know." Clark (1994) demonstrated that "you know" could serve as a signal for future repair. After the first case of "you know" in Extract 9, Chloe rephrased her point, stating "whatever it is that they believe just like help them . . . ." Chloe's second use of "you know" followed Clayman and Raymond's concept of understanding and alignment. In response, Tom showed interest in Chloe's statement (Line 5). This was a form of encouragement. Tom then analyzed Chloe's

statement (Lines 5- 8). Tom subsequently made a connection (Lines 8-9) between that analysis and a different student's (Riley's) previous statements. Tom then posed two different questions directly to Zoey, inviting Zoey to join the conversation topic at that moment (Lines 10-11). The first question was in regard to concerns that Zoey might have had, and the second question was in regard to feedback Zoey might have offered to Chloe.

Requesting the sharing of lived experiences.

In a different recorded lesson, Tom invited students to share their lived experiences. Lived experiences are individuals' understandings that emerge through one's own involvement or participation. These experiences impact an individuals' understanding of the world and their self-awareness (Boylorn, 2008). Tom's second lesson was structured in such a way as to provide students with multiple opportunities to tell personal stories that related to the course content and discussion topics. In Extract 10, Tom led a discussion of concepts to consider when counselling individuals. The concepts to keep in mind when dealing with patients were to consider who was a scapegoat and what alliances there were in a situation. They also took into account a structure they learned to improve situations. The students in Tom's class shared lived experiences, touching on those counselling concepts. Extract 10 starts with Maya, a middle-aged woman going into detail about her parents' methods of dealing with their children.

Extract 10. *(Tom Session 2)*

```
(2:10)

01   Maya:  and so hhh $she would let us get away

02   Maya:  $ with a lot. And that's when my dad would

03   Maya:  get furious and be like come on man.
```

```
04     Maya:  This is ridiculous.

05     Tom:   (3) So there's th-th the issue of our boundaries

06     Tom:   I guess comes up then. Because =

07     Maya:  =Big time

08     Tom:   Yea::h in some ways you were pretty good.

09     Tom:   You and your brother is sort of figuring

10     Tom:   out how to (.5) dodge boundaries um and limits=

11     Maya:  =big time

12     Tom:   uh but your dad would have none of it.

13     Tom:   If it got too- if the temperature got

14     Tom:   too- too hot in the room You. You'd

15     Tom:   certainly hear from him.

16     Tom:   It's like the final version of authority.=

17     Maya:  =he had common [sense]

17     Tom:                  [Does ]this sound familiar to any of you guys?

               (Riley nodding head)

18     Tom:   (3.2) Riley you're nodding

19     Tom:   your head. Yeah.

20     Riley: Oh yeah. my mom- we would play my mom sometimes
```

Maya shared a lived experience with the group. The extract began with the ending

portion of a personal and detailed storytelling turn by Maya of life with her parents. Tom

responded to the lived experience by sharing his analysis of Maya's story. Tom connected the

story to theory, highlighting a key issue (Lines 5-6). In Tom's analysis, the concept of

"boundaries" surfaced, which was not stated previously by Maya. Maya's declaration of the phrase "big time" (Line 7) demonstrated intersubjectivity and agreement and acceptance of Tom's analysis. In other words, the concept of "boundaries" was co-constructed by Maya and Tom through dialogue. Maya's agreement and acceptance of the analysis led Tom to continue his analysis (Lines 8-15) with intermittent agreement by Maya with another utterance of the phrase "big time." Tom concluded his turn by posing a question to the group, inviting other members to share a related lived experience (Line 17). Riley nodded her head, conveying an affirmative response to Tom's question of "Does this sound familiar to any of you guys?" Tom then mentioned his observation of Riley's nonverbal action in the video. Tom stated, "Riley you're nodding your head" (Line 18-19). Specifically called upon by Tom, Riley then began to speak about her own related lived experience.

Closing comments. Four relevant social actions by Tom stood out in the extracts selected for this study. First was the intentional working towards intersubjectivity by the instructor. For example, Extract 7 demonstrated the process of working towards intersubjectivity through conversation. What made that possible was the second key social action by Tom: Frequent interpretation and analysis of student statements. This was evidenced by such phrases as "So what you are saying is" by Tom. His efforts towards alignment in thought, or intersubjectivity, were clear. The third social action was Tom's enabling students to share their related and lived experiences and create deeper connection to and meaning of learned content. The fourth action was his intentional balancing of speakers during the discussion. For instance, Extract 9 demonstrated Tom referencing three students in different ways in one turn at talk.

Tom had a clear outcome that was different in the two lessons, and his dialogic teaching approach displayed contiguity, or immediate responses by Tom to student statements. Although Tom led the direction of the discussions, he gave autonomy to students to voice any confusion and work through by means of dialogue not only with the instructor but also other group members who may have also had questions about the content.

Case 4: Alice

Background Information. Alice, held a PhD in Education and was an associate professor of teacher education. Alice had been a high school instructor prior to becoming a professor in a college of education. The class that was included in this study was a part of a pre-service undergraduate program preparing students to become teachers. Thus, these students were a part of a cohort and had known each other for four semesters. Five students agreed to be video recorded during small group discussions. For these recordings, Alice said that she intentionally used IC. Alice had instructed these students on using the CREDE framework in their own classroom instruction and modeled its use with the students in this teacher preparation course.

Key social activity.

Teacher interpretations of student statements. Alice facilitated a discussion with the undergraduate students on the topic of ethics in schooling. The small group of preservice teachers talked about the concept of a gray zone between what might be considered right or wrong. The following extract exhibited the way in which Alice's interpreted a point by Josie, a

student in herearly 20s.. Extract 11 additionally presents dialogue as a medium through which

unexpected ideas and perspectives can emerge.

Extract 11. *(Alice Session 1)*

(3:18)

```
01    Alice: we're going to focus on what are the

02    Alice: factors that determined how you decided

03    Alice: what was ethical. or unethical.

04    Alice: >What do you think.<

          (3.0)

05    Josie: I thought about safety?

          (some confusion to who is speaking on Zoom)

06    Alice: okay so $Shannon what about safety

07    Josie: u:::m I thought about if that would put the- the

08    Josie: students? Sa- or students safety in <jeopardy?>

09    Josie: like mentally or <physically?> =

10    Josie: And then also my o::wn?

11    Alice: (.7) ↑Okay

12    Josie: =like job safety? if it was like a…=

13    Alice: =ohhh

14    Josie: =questionable  (1.2) Oh…okay.

15    Alice: job safety.

16    Alice: so if you feel like it would put

17    Alice: your job at risk.
```

```
18    Alice: ↑Okay

19    Alice: other factors.
```

In Extract 11, Alice illustrated the focus of the next portion of the discussion (Line 1-3).

She then initiated a response from any group member (Line 2) by asking "what do you think"

with downward intonation. The instructor's question triggered Josie's participation and the

sharing of a thought (Line 5). However, when Josie did not provide details, Alice posed a

follow-up question requesting that Josie elaborate (Line 6). That is, Alice replied, "What about

safety?" with downward intonation. As a result, Josie responded by explaining her thoughts

further with an example (Lines 7-10). Josie's example was followed by acceptance of an answer

by Alice (Line 11) by means of a higher pitched "okay" In this case, Alice's use of okay

exhibited acceptance of Josie's answer. That show of acceptance led Josie to specify her

response with the words "job safety" (Line 12) and then give another example. The concept of

"job safety" by Alice triggered an "oh" surprise token (Line 13) by Alice. In other words, Josie's

example of "job safety" was unexpected to Alice, as demonstrated by her use of a surprise token

(see Wilkison & Kitzinger, 2006) and Demonstration of a "change-of-state" (Heritage, 1984).

Josie extended her example with the word "questionable," (Line 14) as in "if it was a

questionable situation," but did not complete her statement with the word "situation" (Line 13).

Josie paused after the word "questionable" for 1.2 seconds, word searching. Josie ended her

explanation, stating "oh . . . okay," which encouraged Alice to assist Josie by interpreting Josie's

half-explanation with Alice's statement of "job safety" (Line 15).

I note that the exact phrase of "job safety" had not been previously mentioned, indicating the teacher's interpretation of student statements. In other words, through the teacher's assistance, the key concept of "job safety" was co-created with the student through dialogue. Alice used the discourse marker "so" (see Bolden, 2009), and she continued her interpretation of Josie's point in the form of posing an example situation that matched what Alice was saying (Line 16-17). Alice then closed this interaction with Josie by showing acceptance of Josie's answer with another higher pitched "okay" (Line 18). Alice's use of "okay" signaled closure with Josie (Schegloff & Sacks, 1973), and this closure was clarified by Alice's next statement which was the call for answers from other students. Alice teacher stated, "other factors" (Line 19) with downward intonation to the group, seeking other answers from other group members.

   Philosophical questioning and active engagement. Extract 12 was a continuation of the discussion of right, wrong, and the gray zone of ethics in education. I identified how Alice encouraged a student in her early 20s, Lily, to elaborate on specific points during the interaction, by posing philosophical questions and interpreting a student's point.

Extract 12. *(Alice Session 1)*

```
(4:18)

19    Alice: other factors.

20    Lily:  I said if I would feel guilty or not

21    Alice: a::h.

22    Alice: what is guilt.

23    Alice: =what is guilt.

24    Lily:  I mean- I guess-
```

```
25    Lily:  that just depends on the person.

26    Lily:  but like- (1) I dunno- if you feel bad for for

27    Lily:  doing it or like- you regret doing it or you have to

28    Lily:  think about what you did  ha::

29    Alice: (3.4) okay

30    Alice: if it comes back to haunt you

31    Lily:  yeah ha:

32    Alice: ha:: Okay.
```

At the start of Extract 12, Alice invited other group members to answer her prompt for

other factors regarding how someone might determine what is or is not ethical (Line 19). A

student, Lily, *self-selected,* or volunteered, and replied to Alice with an answer (Line 20). This

caused Alice to utter a surprise token of "ah," exhibiting surprise at a new thought (Line 21). The

teacher then encouraged Lily to elaborate on the concept of guilt, which was proposed by Lily,

and then posed a philosophical question about "guilt" (Line 23) with downward intonation of the

philosophical question and quick, in terms of nextness, repetition of it (Line 24). In other words,

Alice expected Lily to answer the question that she posed. That is to say, the question was not

rhetorical in nature. Lily began to search for an answer and started a *repair sequence* with the

discourse marker, "I mean" (Line 24). Lily then had a change of state, uttering an "I guess"

discourse marker "I guess," which can indicate "discovery, realization, or conclusion"

(Kärkkäinen, 2007). Lily elaborated on what she meant by someone feeling guilty (Lines 24-28)

with a smiley voice and laughter. In the explanation, Lily used the discourse marker "I don't know" hedge (Line 26), demonstrating a lack of confidence (Tsui, 1991).

Lily then gave three cases of when someone might feel guilty in quick succession. Lily stated, "If you feel bad for for doing it or like- you regret doing it or you have to think about what you did" (Lines 26-28). These three examples led Alice to show acceptance of the answer (Line 29) with an "okay" (line 29). Alice then interpreted Lily's statement (Line 30). That is, Alice summarized Lily's three examples with a phrase that captured Lily's main point. Specifically, Alice said, "if it comes back to haunt you" (Line 30). Lily agreed with Alice with a "yeah" followed by laughter (Line 31), displaying intersubjectivity (see Drew, date). Alice reacted with laughter of her own and then expressed further understanding of Lily's point and intersubjectivity with Lily with a statement of "okay" (Line 32).

Extract 13, below, extended the conversation of ethics in school settings. Similar social activity by the instructor as in the previous excerpt developed. For example, in Extract 13, the means by which Alice facilitated the generation of original thought by students became recognizable. For example, Alice elaborated on the student Ben's (early twenties) point, asked a question probing what the student meant, interpreted the student's statements, and exhibited empathy. Extract 13 started off with Ben proposing professionalism as a factor in determining right and wrong.

Extract 13. *(Alice Session 1)*

(5:35)

```
01    Ben:   I think u::m <relationships> playing into a big factor

02    Ben:    for professionalism

03    Ben:    knowing the ber- or the break- there's a breaking

04    Ben:    point? where something may be too much

05    Ben:    and the:n knowing when some::thing is accepted?

06    Alice: (4.7) so something can seem accepta::ble…

              (typing information)

07    Alice: but if you do it- if it but there's a line? you feel like?

08    Ben:    yea:h there's a line that you shouldn't

09    Ben:    cross in relationship to their if it's

10    Ben:    for a student or (.4) different teacher.

11    Alice: (.6) how do you know where the line is?

12    Ben:    This is- I:: think it is based on (.2) the `

13    Ben:    teacher. really.

.

.

.

17    Ben:    For example I- I said hug- or

18    Ben:    accepting hugs are ethical because >you know<

19    Ben:    I'm from Hawai'i and this is how we show

20    Ben:    appreciation with each other. so- so some
```

```
21   Ben:   some teachers might not do that. so=

22   Alice: =so you're saying that there's cultural

23   Alice: context matters.

24   Ben:   mm hmm.

25   Alice: all right.
```

Extract 13 began with Ben illustrating his suggestion of "professionalism" as a factor in determining right and wrong (Line 1-5). Alice then interpreted Ben's statements, prefacing this interpretation by the word "so" (Lines 6-7). Alice took and used Ben's word "accepted" in her interpretation and introduced the concept of a "line" between what is right and wrong. Ben then agreed with the teacher's interpretation, establishing intersubjectivity (Line 8) with a "yeah" statement and then repeated the phrase generated by the teacher "a line" (see Drew, 2013). Again, this line not to be crossed was not previously stated by Ben. So, the concept of the not-to-be-crossed line was co-created by Ben and Alice through dialogue together. The student elaborated in terms of the not-to-be crossed line in teacher and student relations (Lines 8-10). Alice responded by asking the follow up question, "How do you know where that line is?" (Line 11). Alice expected an answer to this question, which encouraged Ben to think more about what he meant and elaborate on his thoughts. Ben proceeded to give details on the not-to-be-crossed line from 12-21 with original and spontaneous thinking as a result of Alice's questioning. Ben referred to his particular culture, but this is not a description of a specific lived experience. Alice again interpreted the student comments (Lines, 22-23) prefacing this interpretation with the phrase "so you're saying that" (Line 22). The phrase "so you're saying that" signified Alice's

interpretation of the student's statement, and Ben agreed with Alice with the utterance "mm

hmm" (Line 24), establishing intersubjectivity (Line 22). That brought Alice to close this

interaction by stating "all right" (Line 25), which displayed her understanding and acceptance of

Ben's point.

    In the next excerpt, also on the topic of the gray zone of ethics, Alice and the students

shared thoughts on what was important when handling sensitive issues with students. They

discussed what to do if such an issue arose. Alice referred to a lived experience that she had

previously mentioned to the group regarding her former student, James. Alice also promoted

Eva's (in her twenties) reflections on the importance and purpose of the discussion they were

having.

Excerpt 14. *(Alice Session 1)*

```
(12:08)

01    Alice: other ideas on how you can navigate

02    Alice: the risk of the gray zone?

03    Lily:  (1) I think I would like- think about

04    Lily:  am I being fai::r to (.3) a::ll my students

05    Lily:  or like >everyone< just being fair?

06    Lily:  so like- (.8)°°I dunnow °°(1.3) cuz like-

07    Lily:  °°I don't know°° doing more to like one kid

08    Lily:  is like- is that being fair to other

09    Lily:  students who might need that help that I just

10    Lily:  don't no↑tice like-those kind of ↑questions
```

```
11    Alice: ↑right it's not just James. it's fairness

12    Alice: to all your students.

13    Alice: thanks Lily.

14    Alice: (.5) Um so you're asking really good questions

15    Alice: How do you- do you just sit in your classroom?

16    Alice: hah $ Like-   hah

17    Alice: $ What do you do? hah hah

18    Eva:   Well like we're doing I guess

19    Eva:   you have to ↓que::stion yourself.

20    Eva:   to ↑think about it so <questioning>

21    Eva:   thinking about it playing

22    Eva:   out scenarios in your head-  What what may happen
```

Alice posed a question regarding the grayzone in school ethics to the group (Lines 1-2). This prompted the student Lily to self-select and express thoughts about that question with some elaboration (Lines 3-5). Lily prefaced her opinion with an "I think" discourse marker. In Line 5, Lily summarized her point, stating "just being fair." We see Lily searching for ideas in her next statements as she said, "so like-" followed by a pause (.7) and then her statement of "I don't know" followed by a longer pause (1.3). Lily uttered "cuz like-" and then again stated, "I don't know" (Line 6). Her thoughts became clearer and she gave an example, by stating "doing more to like one kid is like (.3) is that being fair to other students who might need that help" (Lines 7-9). Lily posed a hypothetical question. This caused Alice to respond with an expression of

agreement (Line 11). Alice then rephrased Lily's statement (Line 11-12), restating Lily's point of fairness. Alice then showed appreciation to Lily for speaking (Line 13). Alice then praised the group and posed a philosophical question, inviting group members to speak (Line 15-17). A student, Eva, responded with a solution to the question. Eva revealed her recognition of the importance of the discussion the group was having on the gray zone of school ethics (Lines 18-22). Eva's statements were prefaced by an "I guess" discourse marker, showing discovery, realization or conclusion from Lines 18-22.

  Closing Comments. With respect to social actions, what was striking about Alice's extracts was her leading of the conversations and contiguity, or responsiveness to student statements, as seen in her turns-at-talk. For example, when students responded to her conversation-based prompts, Alice asked follow up questions, supporting student elaboration of ideas. Further, Alice's questions were not known-answer questions, but were open-ended with a diversity of possible answers. In other words, her questions were open to interpretation and ideas. Second, Alice facilitated contextualization of content through the sharing of lived experiences. Third, Alice intentionally balanced the conversations, selecting particular individuals or opening the conversation up to members who had not yet spoken. That action provided students with opportunities to voice their thoughts. Fourth, Alice facilitated the reframing of thought by students. For example, there was student self-clarification of their understanding as well as a student voicing realization of the purpose of an activity in Extract 14. However in terms of history, despite the students knowing each other for four semesters, there was little student-to-student interaction. Rather, Alice led the discussions.

Cross Case Analysis

The cross-case analysis revealed five themes that related to how instructors' social actions promoted intersubjectivity and co-construction of knowledge. The themes were (a) goal-directed discussion, (b) listening and responding to students with intentionality and immediacy of response, (c) questioning technique, (d) assisting students to think deeply, and (e) contextualizing students' lived experiences. In the following sections, I elaborate on each of these themes. I hold off on connecting cross case analysis findings to extant literature. Rather, I link results to other research in the later discussion section of this dissertation.

Goal-Directed Discussion

In working towards a goal during the discussions, intersubjectivity and co-creation of knowledge developed. Naturally, the goal for the discussions of all four instructors differed; however, each instructor had a goal in mind for their discussions. For example, in both of the lessons he recorded for this study, Michael worked towards having students be able to explain why mathematical functions were performed and what steps were next in the process. That goal structured the interactions in the discussion as seen in Extract 1 and 2. Michael did not merely check student answers to mathematical problems, but asked students to put into words their mathematical thinking for solving the items. In Tom's first lesson, he aimed to clarify confusions about theories and through discussion worked toward reframing student understanding as in Extract 6. In his second lesson, Tom aimed to connect student lives to course content. New ideas emerged from such discussions, such as the concept of "boundaries" that arose in Extract 10. Alice's outcome was for students to be able to express how they determined what was or was not

ethical in the first recorded lesson. From these instructor-student interactions, the co-construction of ideas (e.g, Extract 11) as well as realization of the importance of such classroom dialogues (e.g., Extract 14) resulted. In Alice's second lesson, the outcome was for students to demonstrate their understanding of two movie characters who were at two ends of a continuum and then see which movie character the students were more like. Regarding Billie's course, one might think that it was a free flowing discussion, and Billie did not lead students to a single answer as an outcome. In fact, Billie explicitly stated that he wanted to provide students with the freedom to take the discussion where they wanted it to go (see Extract 3). However, Billie's outcome was goal-oriented because he aimed for students to make connections to theory through the discussion of how to deal with a case study situation. Dialogue mediated the reaching of these outcomes for all four instructors. These were not simply conversations about course content, but were goal-oriented. What resulted from having these goal-directed discussions was a number of social actions that were revealed in subsequent sections of this cross case analysis.

For the aims of this research, it is critical to address the social context of the online group environments during data analysis and interpretation. First, students with more familiarity with each other may have felt more comfortable speaking with one another. That is, with a greater sense of trust, there could be more sharing of lived experiences. This relates to Lave and Wenger's (1998) theory of Situated Learning as well as their concept of Communities of Practice. The students could have learned to work together to achieve a particular goal. Second, graduate students would have taken more classes than undergraduate students, which could mean more experience in group discussions. Those two points could have led to the greater degree of

student-to-student dialogue in Billie and Tom's graduate courses. However, the very design or culture of Billie's course was to engender student-to-student dialogue. In Tom's course, the culture or online discussion environment was conversational as he encouraged student expression of their reactions to other students' comments, creating a social context for student-to-student interaction.

Listening and Responding to Students with Immediacy of Response

Listening to Students and Interpreting and Rephrasing

Listening to students and then responding with interpretation or rephrasing students comments with intentionality and immediacy of response assisted co-creation of ideas and the development of intersubjectivity. For example, Michael reacted immediately to students' statements and evaluated their accuracy. This resulted in a high rate of turn-taking during the discussion. Michael's questions were intentionally leading toward student learning goals as mentioned in the previous section. However, Michael did not interpret or paraphrase student comments in the way Tom and Alice did. Billie additionally did not interpret students' statements, but he displayed other social actions (e.g., referencing and praising student statements). Billie's responses did lead towards the goals of student engagement. At the other end of the spectrum, Tom and Alice responded with immediacy (high rate of turn-taking response) as well as intentionality in achieving their goals for the session by analyzing and interpreting student comments.

The process of the instructors listening to students and interpreting their comments with responsiveness revealed instances of intersubjectivity, as well as co-creation of ideas. For

example, in Extract 12, Alice's student, Lily, struggled to express her thoughts about how to decide what is ethical. Lily was still exploring her thoughts as evidenced by the expressions of "I don't know" and "I guess" interspersed in her explanation to the instructor. Alice responded with a concise paraphrase of Lily's thoughts that had still been in the process of forming. Lily then agreed with Alice's paraphrase with laughter, and Alice confirmed this with laughter of her own followed by the statement "okay," bringing the exchange to a close. In other words, what became visible was Alice's active assistance in the clarification of Lily's thoughts in Extract 12.

The co-creation of ideas through Alice's rephrasing of students' comments was seen with her student Ben in Extract 13 during their discussion of dealing with ethics in the classroom. Alice responded to Ben's statements about a "breaking point" by rephrasing his comments into a concept of a "line" that determines what is and is not acceptable. Ben agreed with Alice's interpretation, echoing Alice's new term of the "line" that should not be crossed. That prompted Alice to ask a follow up question that encouraged elaboration by Ben. Alice asked, "How do you know where the line is?" Ben explained what the "line" was based on and gave an example from his culture. The talk of his culture was a new element in the discussion, which led Alice to interpret again, stating "so you're saying that there's cultural context matter." Ben agreed with this interpretation, and Alice stated, "all right" indicating alignment in their thoughts. Thus, Extract 13 revealed how the teacher's social actions of interpreting and rephrasing while actively listening to a student led to intersubjectivity as well as the co-creation of ideas with the student Ben.

Tom also rephrased student comments, with such phrases as "so what you are saying is" in Extract 8; however, this was slightly different from rephrasing, Tom demonstrated responsive analysis of student statements in his interactive discussions. Extract 6 illustrated this point when the student Chloe admitted, "yeah, I guess I'm a little bit confused on that [portion of the theory]." Tom said:

> Right. Right. Now I think you're, Chloe, I think you are identifying that there is a lot of overlap with this and that existential sort of frameworks and issues are part of what a person-centered counselor would be mindful as well.

Tom responded by analyzing Chloe's state of understanding. After Chloe gained greater clarity, Tom could then move on to guide her towards greater understanding with his subsequent statements in Extract 6.

Following the discourse with Tom on Chloe's confusion regarding the theories, Chloe expressed self-discovery. Toward the end of Extract 6, Chloe expressed, "Right yeah I guess I'm kind of like merging Beck's like like studies on depression and how he dealt with that? And kind of like applying that to the whole like existential" In other words, Chloe clarified her new framework of understanding through discussion with Tom. Tom responded with, "right yeah," expressing agreement with Chloe's realization. These examples highlighted how listening to student statements and responding with immediacy and intentionality through interpretation, rephrasing, and analysis contributed to the dynamic dialogic interaction.

Encouraging Student Participation Resulting in Students Agency

All instructors displayed encouragement of students; however, the way in which they did so varied. For example, Michael used phrases such as "good," "very good," and "okay" to show acceptance of student responses. Michael held strong control of the discussion. This might have restricted students' autonomy during the interactions. Evidence for this was students not asking questions to the instructor or each other about the process of solving mathematical problems. In other words, the students played the role of listening to the instructor and answering his questions, leading to a lack of agency by students during the discussions.

In contrast, Billie encouraged his graduate students by validating their statements. That resulted in instances of students being agentive during the discussions. For example, in Extract 4, a student, Bob, received no response following his statements to the group, so he then stated, "if that makes sense" followed by Bob's own laughter at the situation. That prompted the instructor, Billie, to reply, "It does, Bob," expressing validation of Bob's point and encouraging him. Key to note is that following Billie's turn at talk, the student Bob (feeling encouraged) then displayed agency by leading the discussion following Billie's advice. Billie also thanked students for their contributions to the discussions and praised the groups, stating "you've done a nice job." By allowing students to converse without his own contributions and using various forms of encouragement and praise, Billie encouraged student autonomy. Students led the discussions on topics they selected and shared their thoughts in a positive and professional environment.

Tom also validated student statements, and he used a variety of encouragement methods in his responses to student statements in connected discourse or contiguity of responses. This

was direct and immediate responses between participants. For example, following student comments, Tom showed understanding of student points uttering, "Mm hmmm" as well as agreement with phrases such as "yeah," "oh yeah," and "right" with no hesitation. Tom showed a variety of expressions of agreeableness, and key to note was the immediacy of those types of responses, leading to the interactive nature of his sessions. For example, following Tom's expression of "right right, go ahead," the student continued with the description of her lived experience. That is to say, such responsive social actions by the teacher contributed to the conversational aspect of the discussion with the graduate students, creating a back and forth turn-taking dialogue. These forms of instructor actions supported student agency in expressing their thoughts.

Similar to Tom, Alice also used discourse markers such as "oh" and "ah" to display surprise in immediate response to points made by students, and these utterances appeared to encourage students. There was also use of phrases "okay" and "right" to show both acceptance and understanding. She praised students, stating "you're asking really good questions." Alice thanked students for their contributions, but did so to signal a conclusion of that particular sequence and move on to another student or topic. However, the thanking of students by Alice was not to the same extent as Billie. For example, in Extract 3, Billie gave two displays of thanks in one turn-at-talk. Specifically, Billie displayed a show of gratitude to the group for their participation as a way to open his turn and initiate his response to a student's statement. In that same extract and in that same turn at talk, Billie thanked the group of students at the end of his

turn of speaking. Alice was agreeable, however, she also questioned students to develop their thoughts as we will see in the next section.

Question Types

A variety of question types led to intersubjectivity and co-creation of knowledge in the extracts selected for this study. For example, in addition to answering content questions (e.g., answers to mathematical problems), Michael asked students to report why certain functions had been performed (e.g., a focus on the process) or what the next step would be to solve a problem. Michael did ask known-answer questions, but used such questions to lead students towards new understandings of the mathematical process. Key to note was his focus on having students verbalize their thoughts and generate original ideas. However, it is important to point out that in Extract 1, Michael interrupted two students' explanations, speaking and taking the floor of the conversation. This occurred before students had finished their sentences, and once Michael noticed that students were on the right track to answering his known-answer questions.

Alice also questioned students, prompting them to express their thoughts further. This led to more complex and clear student understandings. For instance, Alice asked students to define what certain words meant to them in a coherent and detailed way. When a student suggested "guilt" as a reason for deciding what was right or wrong, Alice immediately asked "What is guilt?" with emphasis on "is," indicating her desire for the student to define the guilt from that student's perspective. In another case, when a student brought up the concept of a "line" to consider when determining what was right or wrong, Alice then asked the student, "How do you know where the line is?" Referring back to Extract 12, such questions byAlice generated

spontaneous thinking by the student Lilly. Lilly uttered a variety of discourse markers to show her spontaneous thinking such as "I mean,""I guess," and "I don't know" repair of her statements and laughter all within one turn at-talk. In other words, the concept was not concretely defined in her mind at that present moment. However, an outcome of the interaction with Alice lead to both higher levels of intersubjectivity or shared states of understanding and co-creation of new ideas in the minds of the students as opposed to the restating of facts from course content.

As previously mentioned, Tom analyzed and rephrased student statements in an interactive and responsive way, which led to discussions with a high rate of turn taking between group members. His discussions commenced with question prompts. However, within the five extracts of Tom's interactions that were included in this study, he did not directly question students on beliefs or processes. Rather, Tom's questions were invitations for other group members to speak as in Extracts 9 and 10.

In contrast to Michael and Alice, Billie did not directly challenge students' viewpoints or ask for reasons for students' statements. He additionally did not ask follow up questions to students' statements. However, Billie did offer feedback to students' statements. Billie focused more on guidance and encouragement as seen in Extracts 3 and 5. Billie posed a hypothetical question in Extract 5, but did not directly ask students to answer the question. In Extract 5, Billie discussed crisis moments in dealing with college students and asked, "Can we have these conversations?" Billie did not direct this question to any group member in particular. His student Audrey did utter a "yeah," however, this expression appeared to be an expression of agreement in asking such a question and not a direct answer to the question. Audrey did not offer any

76

support for her utterance, which was stated within Bilie's turn at talk. Billie continued speaking without responding to Audrey's expression of "yeah." Following Billie's advice for the group discussion and philosophical question, his next action was to switch to another group.

Assisting Students to Think Deeply

Related to the use of a variety of questions was the nature of teacher and student interactions. Michael, Tom, and Alice managed conversations. They actively balanced who was speaking in the sessions. Tom and Alice, took on the role of investigators, being responsive to students' statements and then intentionally working to delve deeper into students' thoughts and prompting students to express themselves to a greater degree. They did so in a non-challenging but conversational way. Thus, Alice served a function that had been missing from the student-to-student discussions, as was the case in Billie's course. For example, when a student proposed an answer to a question Alice asked, Alice probed the student for a deeper understanding of what that student meant. Upon review of the data, I saw that Alice actively worked to assist students in developing their thoughts. The result of such actions was co-constructed knowledge.

Michael did lead students to think deeper through his process of questioning. Mathematical reasoning was a focus of his course. For example, in situations of trouble (e.g., a wrong answer by a student), another student would chime in with an alternative answer, as in Extract 2. What was lacking, however, was collaborative student-to-student discussion about how to solve a problem. Student-to-student interaction was present in Michael's course. For example, there was an instance of a student praising another student for their process in solving a

mathematical function. But these exchanges did not lead to the co-creation of ideas. It is important to note that the students had already completed work individually prior to the group discussion session, so interaction in Michaels sessions was primarily between teacher and one specific student at a time in solving a problem.

Contextualizing Students' Lived Experiences

Michael's data did not display the sharing of *lived experiences* by either the teacher or the students. Specific and detailed personal stories, or lived experiences were also not shared in the two recorded sessions from Billie's course. There were references to what students had seen or heard in previous work environments that related to the discussion. However, such sharing in Billie's recordings were not like the detailed and personal lived experiences that were shared by Tom's students or Alice in her sharing of a personal story. For example, in Billie's first discussion session, the students discussed a case study of two university student roommates having trouble getting along. When one student suggested the use of the Hawaiian concept of ho'oponopono as a strategy for dealing with the case study, another student mentioned that colleagues in her work context had applied the strategy. The second student described what happened with some details; however, it was not something that she herself experienced; and thus, was not a lived experience. In another case, a student of Billie explained,

> Yeah, I would be like very much biased on this. And then anything- asked my colleagues for help- but that's just me- we went- how would you handle this before I like actually get, like, mad at the student.

Billie's student briefly made reference to something that she did in the past, but did not explain exactly what happened. She referenced a past experience as opposed to sharing a lived experience. Regarding Alice's course, lived experiences emerged in the second lesson. For example, in the discussion of ethics, the instructor recounted an interaction with a student. In the sharing of the lived experience, Alice mentioned the student's name, the age range of the student, what happened, as well as why it was an ethical issue. In another discussion, one of Alice's students described a lived experience with her uncle who reminded her of one of the teachers that they were discussing. This student specified her uncle's nature, what the two of them did together, and her mother's reaction to their actions.

The cross case analysis highlighted meaningful similarities and differences, focusing on what the data disclosed. In IC, the crucial element was the listening and responding to students with immediacy of response involving two elements. The first was interpreting and rephrasing student comments, and the second was encouraging student participation. Use of IC assisted students to think deeply and led to contextualization through the sharing of lived experiences. In my discussion, I connect my results to research and theory in the field. I also detail implications for practice and discuss the study's limitations and ideas for future research.

Discussion

This study investigated teacher and student interactions from a sociocultural perspective through the use of discourse analysis and CA-informed research. The focus of the investigation was on how instructors used dialogic instruction to co-construct and reframe students' thinking,

moment-by-moment. This was, accordingly, a microgenetic approach to understanding cognitive changes. I further compared instructors who had more experience with IC to others who did not.

On the topic of adult education, three of the four instructors matched Knowles' (1998) call for a priority "on experiential techniques-techniques that tap into the experience of the learners such as group discussion, simulation exercises, problem-solving activities, case method, and laboratory methods instead of transmittal techniques" (p. 66) for adult learners. Billie applied case studies, Tom designed a lesson connecting students' lived experiences to the course content, and Alice's session focused on sharing ideas. However, Michael's course was focused on problem-solving, but it was not quite a group discussion. Students were in a small group, but the interactions were primarily teacher-to-a-single-student as other group members listened. Missing was the student-to-student dialogue that would represent a group discussion.

For this study, I followed Miller's (2016) recommendations for studies that applied the work of Vygotsky. In particular, this multiple case study looked at shared understanding between multiple participants. Second, I focused on assessments of what the less skilled individuals could do alone and with the help of others. Third, I analyzed the shift over time of responsibility during a session in terms of a microgenetic approach. As opposed to a longitudinal study, I investigated the moment-to-moment changes within a short timeframe. Fourth, I attempted to reveal the way in which the more-skilled-others supported the learning of the less skilled individuals towards higher levels of cognition. Finally, I made some attempts to study the interplay between participant's culture and history on their interactions with one another. I addressed the culture that developed in the online group discussions or online social contexts. For example, group

dynamics differed across the courses. Therefore, I clarified interactions, behaviors, and actions in

my analysis. I attended to history in terms of how long participants knew the instructors or had

been together as a cohort in one particular case. I further directed attention to the teachers'

history and experiences regarding use of IC.

From the extracts, I addressed two research questions. The first question investigated the

co-construction of ideas and reframing of student thought with students. I analyzed how this

happened both through general discussion and through IC. The second question explored

differences between instructors who had knowledge and experience of IC and those who did not.

Figure 1, below, addresses the two research questions, displaying important points of this study's

findings.

Working Towards the Co-Construction of Ideas

My first research question was: How did instructors co-construct ideas with students through IC

and other discourse strategies? IC occurs within the ZPD (Gallimore & Tharp, 1992); therefore, I

framed this analysis through consideration of Wertsch's (1984) call for the specification of the

ZPD through three constructs: situation definition, intersubjectivity, and semiotic mediation.

Situation definition refers to humans perceiving actions from alternative viewpoints. Because

participants in a discussion understand concepts in distinctive ways, problems can arise (e.g.,

misunderstandings). *Situation redefinition* or the reframing of thought can become an

instructional goal. In discussions, speakers may share or come to share certain elements of their

situation definition, and this state is termed *intersubjectivity* (Wertsch,1984). Figure 1 shows how

the situation definition of a teacher and students could start off or lead to low levels of

intersubjectivity. However, a higher level of intersubjectivity between instructors and students

could stem through semiotic mediation.

Figure 1

Structured Map of Results
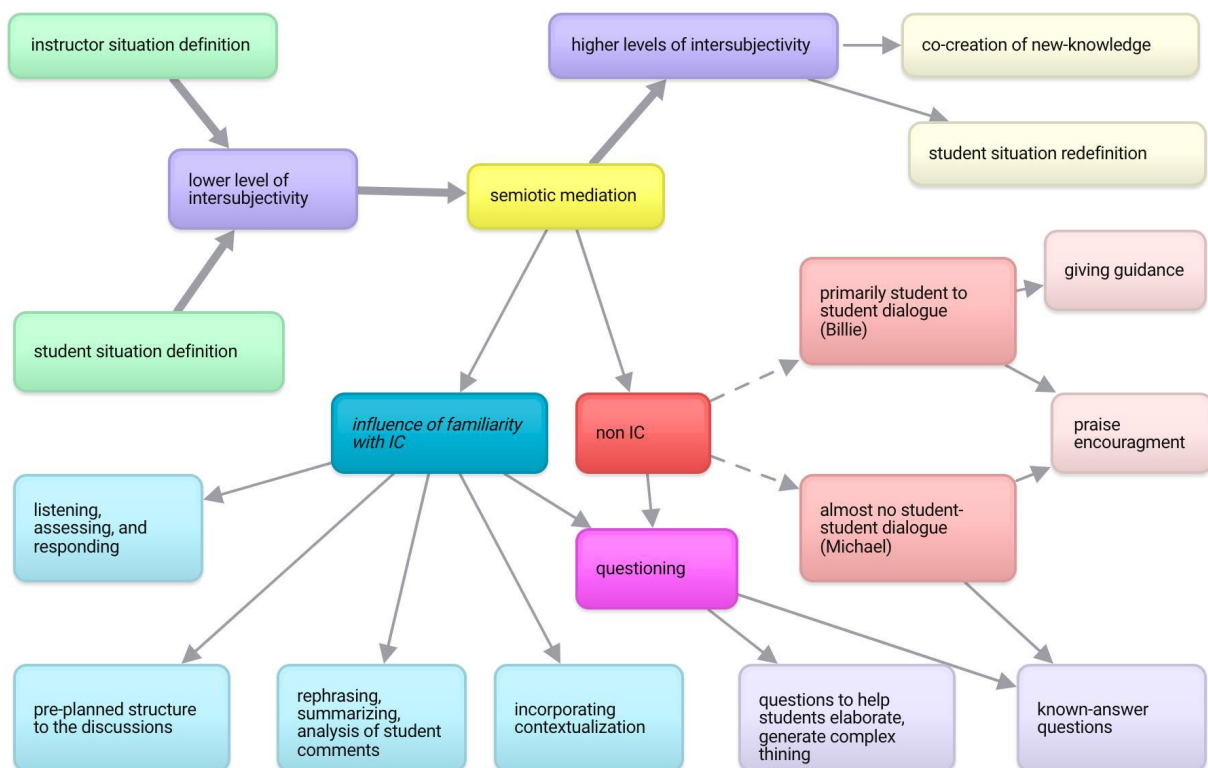
Note. This model shows social actions by instructors as they dialogued with students in small

group settings. The bold lines and arrows depicted the path through a ZPD. Regular lines and

arrows show what resulted through semiotic mediation or other elements. Dotted lines indicated

different results of non IC instruction.

In this study, semiotic mediation was dialogue between participants in a group. Critical to note is that a teacher informing a student of a concept does not directly mean the reaching of a higher level of intersubjectivity. Students must show this understanding in their responses. Hence, I focused on students' responses to teacher actions in my discourse analysis. In the case of this study, the result of semiotic mediation and reaching higher levels of intersubjectivity was co-creation of ideas in some situations and students' situation redefinition in others, as displayed in Figure 1.

Situation Definition

In situation definition, we may see concepts in different ways. One example of this was in extracts from Michael's course where a problem in processing the mathematical item surfaced. In that situation, Michael's goal was to reframe students' thinking. On this topic of distinct situation definitions, in Extract 3 from Billie's course, a student discussed the application of the cultural concept of ho'opono pono to deal with a case study situation. However, another student raised a point of concern about doing so. In other words, the student who raised an issue provided a critical alternative perspective on the matter. This particular exchange was an example of *exploratory talk* (Mercer, 2000), where the challenging of perspectives occurred between students; however, it is important to note that the majority of the session was *cumulative talk*, or the sharing of ideas. Mercer (2000) clarified that cumulative talk is "based on ground rules which encourage joint, additive contributions to the talk and relatively uncritical acceptance of what partners say" (p. 33). Mercer also highlighted that in cumulative talk, participants may dialogue to solve a problem, but the speakers also affirm and develop friendships. On that point,

data analysis of the extracts in this study did not reveal critical questioning of student-to-student statements, but rather efforts to be agreeable. For instance, in Extract 3, the student Audrey stated, "Emma I like how you um brought in the ho'opono pono theory," and later in Extract 5, the student Leah said, "that's true," agreeing with a point made by the student Audrey. In a similar way, Eggins and Slade (1997) explained that most casual conversations focus on following social rules in order to maintain relationships as opposed to co-construction of ideas. For class members in Billie's class, the questioning of each other's thought process and reasoning might have upset the dynamics and harmony of the group; hence the overall efforts to be agreeable. It might be more socially acceptable for an instructor to take on the role of questioning thought processes and reasons. It is also possible that students could be instructed to take on this kind of role with one another (Brown & Campione, 1998; Frambach, et al. 2014).

Intersubjectivity

According to Werstch (1985), *intersubjectivity* occurs "when interlocutors share some aspect of their situation definition" (p. 159). Figure 1 represents this as a lower level of intersubjectivity because only certain elements are shared knowledge between participants. Figure 1 additionally depicts a higher-level of intersubjectivity which can be reached. To achieve that, Werstch (1985) suggested giving hints and using certain types of questions. For instance, Michael and the student in Extract 2 shared certain aspects of situation definition, or the processing of mathematical items, when an issue occured. In other words, the student had a different conception of solving the mathematical item than Michael. As a result, Michael focused

84

on reframing the student's thinking through various questioning in Extract 2 in order to reach a higher level of intersubjectivity between himself and the student.

Semiotic Mediation

Werstch's (1985) third concept was the negotiation of intersubjectivity or *semiotic mediation*, which is the process of creating a "temporarily shared social world" (p. 161). The data revealed semiotic mediation in interactions between Michael and his students, as in Extract 2, when his questioning techniques led students towards greater intersubjectivity. Such intentional actions towards the co-creation of ideas and reframing of thought with a calculated goal of working toward complexity in thought was evident in Tom's and Alice's sessions. In both of Tom's recorded sessions, he clarified students' thoughts by interpreting and analyzing students' statements. Tom's speech actions encouraged elaboration of thought, and resulted in students' self-generated clarification of their thinking. Extract 7 served as evidence for the reframing of student understanding that resulted from the conversation with Tom. In that extract, the student Chloe first stated her confusion about a theory, but following discussion with Tom and another student, Chloe expressed her realization about her misunderstandings regarding concepts from the course. The dialogue touched on *transformational learning,* which is "the process of effecting change in a frame of reference" towards perspectives and conceptualizations" (Hoare, 2006, p. 5). This type of reconceptualization is important for adult learning (Hoare, 2006). Chloe was able to reframe her thoughts, situation re-definition, in terms of clarification. This process involved semiotic mediation or negotiations through dialogue with the instructor and others.

85

The sharing and analysis of student lived experiences by Tom was an example of the co-creation of knowledge. Through discussion of lived experiences, course concepts were, in the words of Gallimore and Tharp (1992), "meaningfully connected to students prior experience and knowledge" (p. 78). Tom's analysis of student statements was a form of semiotic mediation. For example, in Extract 10, the concept of boundaries was co-constructed through Tom's interpretation and analysis of Maya's lived experience.

Alice displayed intentional co-construction of ideas that were mediated through dialogue. A clear example is from her first recorded lesson with her prompt for student discussion of "how can we navigate the risks of the grayzone?" Alice did not have an exact answer she was working towards, but used discussion toward that overall goal. A completed product represents success of the IC (Dalton & Tharp, 2002). In this case, newly co-constructed knowledge mediated through dialogue was the goal of Alice's question prompt. The results were ideas that the teacher was not expecting, and Alice marked her surprise at student statements and points with "oh" and "ah." Through her intentional questioning toward the goal of co-construction of ideas, Alice addressed Wittrock's (1990) elaboration of ideas as reinforcing links between prior and new knowledge. Alice's dialogue with students restructured information in novel ways and strengthened understanding.

Similar to the data from Tom's course, what resulted from Alice's discussions was students' self-generated clarifications of understanding, as was the case for Alice's student Eva. However, while Tom interpreted student statements and gave explanations, Alice additionally used follow-up questions as seen in her exploratory talk (Mercer, 2000) in Extracts 12 and 13.

86

Alice focused on helping students to elaborate their thoughts (Craik & Tulving 1975; Doherty et al. 2003). At one point, Alice asked, "How do you [navigate the risk of the gray zone of ethics]--do you just sit in your classroom? Like what do you do?" This was a genuine question to the group by Alice, and the student Eva responded with "Well like we're doing. I guess you have to question yourself to think about it. So questioning- thinking about it- playing out scenarios in your head- What what may happen." Through her dialogue with the instructor and peers, the student Eva realized the importance of their group discussion. In a related fashion, Wells and Haneda (2008) found that conversation mediated cultural learning. ICs connect content to students' experiences in which cultural factors develop. In the case of this study, I focused on the culture of the group online discussions in terms of the social context. In support of this, Rogoff (1982) stressed the interplay between the context and cognition of participants in interaction for sociocultural research. Connecting this to research on CREDE standards, Haneda (2008) found such consolidation to be critical for the creation of new perspectives, which was seen in Tom's and Alice's extracts.

Alternative Examples

Not all questioning techniques lead to the co-construction of new knowledge. In the case of Michael, his application of questioning promoted students' voicing of their mathematical thinking. For example, Michael not only asked for reasons for mathematical operations, but also questioned students on their next steps in the process of solving a mathematical problem. However, my CA-informed analysis of teacher responses to student answers revealed that Michael already had particular answers in mind when he asked the initial question. Thus,

87

Michael's questioning did not result in the co-creation of new knowledge. Rather, reframing of student thought was a key outcome for Michael for his students.

Influence of Familiarity with IC

Research Question 2 centered on distinctions between the instructors who were knowledgeable about IC and those who had little or no IC background. Both Alice and Tom had experience with IC. Alice had received extensive IC professional development, and she specifically aimed to demonstrate IC in her lessons. Tom did not have formal training in IC, but he was knowledgeable of it and had worked with other researchers to develop a measure of IC and the other CREDE Standards for use in university settings. Billie said that he was aware of the CREDE Standards, but preferred to apply a different approach during the analysis of case studies with his students. Lastly, Michael was a graduate of a college of education master's program, but was not familiar with CREDE Standards and IC. Referring back to Figure 1, there were four themes that surfaced through analysis of instructors who were familiar with IC. I describe them below.

Listening Assessing and Responding to Students Comments

Goh et al. (2012) outlined that an IC is "not a casual conversation, but an intentional process in which teachers constantly reflect on ways to assist their learners based on careful assessment of children's learning and sensitivity to what they say" (p. 306-307). Alice's use of questioning students assisted learners to clarify their thoughts and elaborate on their ideas. Together, as outlined in earlier, Alice and the students co-created knowledge. This links to Goldenberg (1991) explanation of IC as concentrating "less on delivery of instruction and more

on facilitating and guiding student understanding in the course of extended verbal interactions"

(p. 5). Goldenberg (1991) stressed that in IC, the teacher needed to encourage students to express

their thoughts and use what students say to work towards greater levels of complexity.

Preplanned Nature of IC Sessions

Doherty et al. (2002) explained that key aspects of ICs are that they are planned by the

instructor and are goal-orientated. In a similar way, Tharp et al. (2000) explained IC as "working

towards a learning objective" (p. 33). Alice's data matched previous research on IC on this

matter. In terms of sequences of actions (Good & Beach, 2005), Alice's first recorded lesson

commenced with the discussion of factors for deciding what is and what is not ethical. This was

a type of joint productive activity described in the CREDE model because the instructor was

taking notes of points made by the students, as she generated a list of their ideas. There was then

the introduction to a new concept: the gray zone of ethics. Next, Alice shared an example of her

lived experiences that related to the gray zone. That was followed by discussion of students'

thoughts as they related to the gray zone. Last, the instructor provided advice for students on this

topic and closed the discussion session. There was, therefore, a pedagogically logical sequence

of events designed by Alice. Both recorded discussions were pedagogically preplanned and

goal-oriented. Consistent with previous research on CREDE in higher education Yamauchi et al.

(2016) also showed that in college settings, CREDE application was planned and goal-directed

and directed towards the co-creation of ideas.

Rephrasing, Summarizing and Analysis of Student Comments in IC

Analysis of IC revealed a number of social actions by Tom and Alice that were not evident with Michael and Billie. First, Tom and Alice rephrased and summarized student comments. Such actions by Tom and Alice clarified students' statements to themselves and the group. In addition, the instructors both assisted students to self-state their clarified thoughts. For example, Alice helped students express clarifications and elaborations to their thoughts. In Extract 12, when Lily proposed an answer of feeling "guilty" as a way of determining how we understand right from wrong, Alice responded by expressing an "ah" surprise token and then asking the question, "What is guilt" directly to the student. Key to note was the repetition of the question and emphasis on the verb "is," emphasizing to Lily that Alice wanted to hear Lily's definition of guilt. The student then generated an answer expressing original thought interspersed with phrases such as "I mean," "I guess," and "I don't know" as she worked to clarify her thoughts in speech in a *smiley voice* and ending her turn with laughter. I view students' self-clarification as evidence of their moving through the ZPD, incorporating assistance provided by the instructor and others.

IC Incorporating Contextualization

Tom and Alice intentionally assisted students in making personal connections with content, which is considered as contextualization. Yamauchi et al. (2016) illustrated how they applied contextualization in higher education. This type of contextualization was evident in Tom's second lesson in which he created an environment specifically for the sharing of lived experiences, as it related to the course content. Alice herself shared a personal life story about

how she dealt with a previous high school student (Lesson 1). Her students also shared their

lived experiences with people similar to the two movie characters they discussed (Lesson 2).

Not all Dialogue was IC

Contrasting Billie's approach to that of Alice, what became evident was that IC did not

allow for extended periods of turn taking between students (e.g., for a few minutes as in Billie's

extracts). Rather, in the data from Tom and Alice, there was *contiguity* (Sacks, 1987) between

teacher responses to student statements. In other words, these teachers were highly responsive to

student statements, responding usually after one turn by a student. This idea connected to

"responsive teacher talk" in IC as characterized by Saunders and Goldenberg (2007). That is,

Alice and Tom monitored what students were saying and responded to those comments with

immediacy in terms of back and forth turn-taking. Saunders and Goldenberg (2007) also

considered this as connected discourse, where "utterances build on and extend previous ones" (p.

224). Finally, Doherty, et al. (2002) stressed two major facets of IC: The *amount* and *quality*.

Michael's data displayed a great deal of questioning and dialogic teaching. However, as I

explained earlier, not all dialogic teaching is IC. That is, Michael's questioning resembled

socratic teaching, which contrasts from IC. Stoddard and O'Dell (2016) shed light on how

Socrates would "pose a series of questions that confronted students and challenged them to

deduce knowledge on their own" (p. 1092). Stoddard and O'Dell differentiated socratic

questioning from "pimping" in medical school, where the aim is to expose student ignorance as

opposed to determining a students' current understanding. I stress that for Stoddard and O'Dell,

merely asking questions would not be socratic teaching. Likewise, Jarvis (2010) warned that a

lack of skills in questioning can lead to recitation of already established knowledge, which is a type of conformity. Jarvis (2010) emphasized that for the creation of new knowledge, socratic teaching requires great skill. This raises the question of whether socratic teaching is co-construction of new knowledge or reproducing what has been read in a textbook or taught previously, as was in the case of Michael's lessons.

Michael's patterns of questioning students created high rates of question and response turn-taking from the students and demonstrated the classic *Initiation-Response-Evaluation* (IRE) pattern between students and a teacher (Mehan, 1979). In such patterns, the instructor poses questions with answers already known in the mind of the instructor, and students learn a particular "role" to play of listening to a teacher's question and answering it. Considering Extract 1 in terms of IRE patterns, there was first an initiation by the teacher in the form of a question (Lines 1-2). That evoked a response in the form of an answer by the student (Lines 3-5). That student's answer, in turn, produced an evaluation response by the teacher in terms of either correct or incorrect (Line 6).

Despite the use of IRE patterns, Michael's instructional method was not exactly *recitation teaching* as defined by Tharp and Gallimore (1988). The researchers explained that in recitation teaching, an instructor might question students for "factual answers and student display of (presumably) known information" (p.14). Michael was highly responsive to his students' comments, and he asked for reasons for the mathematical processes and led students through questioning towards solving mathematical items. He worked to lead students towards reframing their mathematical thinking. In recitation teaching, questions are used only rarely to help

students expand on their thoughts (Tharp & Gallimore, 1991). That is to say, recitation teaching

is the opposite of IC (Tharp & Gallimore, 1988) in which meaningful dialogues occur. In

comparison of Michael's extracts to the IC data from Alice, Alice's actions were not consistent

within the use of IRE patterns in terms of the instructor asking known answer questions. Further,

Alice did not use the same type of question asked multiple times, but applied a number of

different open-ended questions. Alice also did not interrupt student statements in the way that

Michael did once students answered his already-known-answer questions as in Extract 1. On that

point, Saunders and Goldenberg (2007) contended that IC is a discussion which means less use

of "known-answer" questions (p. 224). Rather, there is genuine inquiry by an instructor who is

applying IC.

ICs can be used in the teaching of mathematics as shown by Haneda (2008). She

demonstrated how an instructor had meaningful dialogues in a math course for youth. Haneda

(2008) asserted, "What appeared to be casual exchanges between Ms. Hasan and her students

were usually tied back to a particular maths problem and concept" (p. 66). For example, Hilberg

et al. (2000) also highlighted how in a number of math classes, there were similar routines of

checking homework answers in which such IRE patterns would likely arise, giving mathematical

explanations, and giving students time to work on their homework by themselves (e.g.,

individual work). The authors showed an experimental IC group making significant gains in

mathematical understanding and enjoyment of mathematics. However, in an analysis of

mathematics teaching from multicultural environments, Tharp and Dalton (2007) revealed a

greater amount of individual work and 90% of class time on textbook or handouts, with instructors speaking at a word ratio of 8:1 in comparison to student talk.

Implications for Practice

IC is possible with adult learners, but it is not necessarily easy. Instructors may need assistance in the form of raising their awareness of specific actions that make IC happen as highlighted in this study. With such understanding, instructors can then take action during discussions with intentionality, moving towards fuller implementation of IC. Without aforesaid knowledge, comprehensive use of IC may not occur regularly. As uncovered in this study, casual conversations may follow social rules of maintaining positive relationships in group discussions (e.g., Eggins & Slade, 1997). Thus, instructors may want to take on the role of questioning thought processes if the goal is to generate more complex thinking. Instructors can likewise provide instructions to students to question each other in respectful ways that advance their collective thinking. In particular, the instructor can model such actions (e.g. Bandura's social learning theory and Tharp and Gallimore's means of assisting performance) in an early stage of the ZPD. This can then progress towards students' self assistance and use of such practices (a middle stage of the ZPD) and, subsequently, internalization of such practices. That would be a later stage of the ZPD, where other students are skilled and willing to establish new social practices on their own. Again, my research was not a longitudinal study. However, future implementations of this research may examine groups of college students towards the end of semester, in which there was IC use with an instructor, to determine if students developed to the point of being able to lead group discussions. In other words, perhaps analysis could show

94

students displaying elements of IC on their own. Specifically, future understanding of an environment where students question peers in a non-challenging way would benefit educational research.

As a word of caution, Yamauchi et al. (2005) revealed how teachers' perceptions of their ICs with youth was not as high as they had thought. Thus, self-reflection is key because IC often does not occur throughout all lessons. For example, Chapman de Sousa (2017) uncovered how full implementation of IC was rare in her collected data. Her findings fit Tharp et al. 's (2000) contention that "in kindergarten to twelfth-grade schools, the instructional conversation is rare" (p. 33). Having said that, in a case study, of an instructor with second grade students, McIntyre, et al. (2006) showed that the more instructors learned about IC, the more IC instructors were able to perform. Therefore, there is potential for teacher training to improve application of IC in frequency of use as well as quality. One step toward that goal is greater understanding of instructor IC speech actions that were demonstrated in this study.

Limitations

There were a number of limitations of this study. First of all, this study is restricted by the instructors having to teach online due to the pandemic. That is, the instructors may not have been accustomed to applying dialogic approaches to teach students online at the time of recording. However, recordings were made in the spring semester of 2021 and not during the initial stages of the sudden shift to online teaching that happened in March of 2020 due to the pandemic. Second, there was a wide range of course subjects that may have influenced instructors' ease at incorporating IC. For example, Michael's math course questions were often procedural in nature

in comparison to the nature of Tom and Alice's questions and lesson flow. Further, the student participants' experience in the number of classes taken prior to data collection may have influenced my findings. One instance of this is that graduate-level students could be more familiar with voicing their thoughts in comparison to students who are new to college courses at the community-college level. Such inexperience with college courses and higher education in general could have impacted participant interactions.

In addition, there are many other instructors who practice dialogic instruction and teach different subjects that were not included in this study. Including a wider array of subjects and instructors might have revealed novel information about dialogic teaching. Along that vein, the inclusion of more instructors specifically applying full implementation of IC would have strengthened the data. Identifying and recruiting instructors at the university level proved challenging at the time of this study as was the case for Engles, et al. (2019), who conducted their study pre-pandemic. Further, interviewing students as well as teachers post lesson recordings would have added further depth to the data analysis; however, this study centered on teacher and student interaction in terms of speech acts. Lastly, video recordings exhibited the faces and gestures of participants, but I did not analyze participant expressions or hand movements.

Proposals for Future Investigations

Considering the limitations of this study, future researchers could conduct deeper and more technical investigations of social actions that lead to the co-creation of knowledge and reframing of understanding. For example, the analysis of facial expressions and gestures may

further contribute to important findings. In turn, the study of more instructors applying full implementation of IC at the university level could reveal further speech actions linked to IC.

Future research on the use of IC in mathematics courses at the college level is another area of future interest. Once again referring again to Haneda's (2008) study, a mathematics course with youth displayed conversations with the teacher that appeared casual but linked to course content. It might also be helpful to investigate instructors in other STEM fields. During the recruitment process, I did contact two physics professors, but they informed me that their lessons were lecture-based.

On the topic of dialogue in the classroom, Tharp and Gallimore (1991) once wrote, "To truly teach, one must converse; to truly converse is to teach" (p. 3). Put another way, humans co-construct ideas through dialogue, creating the mind (Bakhtin, 1981; Estrada, 2005; Rogoff, 1990; Vygotsky, 1978; Wertsch, 1985). IC holds potential to undertake that, not only with youth but with adult learners as well. Specifically, for IC in higher-education online classrooms, I extracted particular speech actions during IC that can be applied in a range of course subjects as suggested by Engles et. al. (2019) and as shown by Yamauchi, et al. (2016). Many studies have demonstrated what IC resembles with youth. This study showed what IC can be in higher education and clarified what it is not.

References

Agee, J. (2009). Developing qualitative research questions: A reflective process. *International Journal of Qualitative Studies in Education, 22,* 431–447.

Akers, R. L., La Greca, A. J., Cochran, J., & Sellers, C. (1989). Social learning theory and alcohol behavior among the elderly, *The Sociological Quarterly, 30*(4), 625–638.

Baddley, A. D. (1990). *Human memory: Theory and practice.* Allyn and Bacon.

Bakhtin, M. M. (1981). *The dialogic imagination.* University of Texas Press.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84*(2), 191–215.

Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology, 52*, 1–26.

Boylorn, R. M. (2008). Lived experience. In L. M. Given (Ed.), *The SAGE encyclopedia of qualitative research methods*. Sage.

Braungart, M., Braungart, R., & Gramet, P. (2011). Applying learning theories to healthcare practice. In S. Bastable, P. Gramet, K. Jacobs, & D. Sopczyk (Eds.), *Health professional as educator: Principles of teaching and learning* (pp. 81–83). Jones & Bartlett Learning.

Brown, A. L., & Campione, J. C. (1998). Designing a community of young learners: Theoretical and practical lessons. In N. M. Lambert, & B. L. McCombs (Eds.), *How students learn: Reforming schools through learner-centered education* (pp. 153–186).

Cattell, R. B. (1941). Some theoretical issues in adult intelligence testing. *Psychological Bulletin, 38*, 592.

Cazden, C. (1988). *Classroom discourse: The language of teaching and learning.* Heinemann.

Chapman de Sousa, E. B. (2017). Promoting the contributions of multilingual preschoolers. *Linguistics and Education, 39*, 1–13.

Charles, S. T., & Carstensen, L. L. (2010). Social and emotional aging. *Annual review of psychology, 61*, 383–409.

Chmiliar, L. (2010). Multiple-case designs. In A. J. Mills, G. Durepos, & E. Wiebe (Eds.), *Encyclopedia of case study research*. Sage Publications.

Church, A., & Batemean, A. (2019). Methodology and professional development: Conversation analytic role-play method (CARM) for early childhood education. *Journal of Pragmatics, 143,* 242–254.

Clayman, S. E., & Raymond, C. W. (2021). You know as invoking alignment: A generic resource for emerging problems of understanding and affiliation. *Journal of Pragmatics, 182,* 293–309.

Clayman, S. E., & Gill, V. T. (2012). Conversation analysis. In J. P. Gee, & M. H. Handford (Eds.), *Routledge handbook of discourse analysis* (pp. 120–134). Routledge.

Craik, F. I. M., & Tulving, E. (1975). Depth of processing and the retention of words in episodic memory. *Journal of Experimental Psychology, 104*, 268–294.

Doherty, R. W., Hilberg, R. S., Epaloose, G., & Tharp, R. G. (2002). Standards performance continuum: Development and validation of a measure of effective pedagogy. *Journal of Educational Research, 96*(2), 78–79.

Doherty, R. W., Hilberg, R. S., Pinal, A., & Tharp, R. G. (2003). Five standards and student achievement. *NABE Journal of Research and Practice, 1*(1), 1–24.

Doherty, R. W., & Hilberg, R. S. (2008). Efficacy of five standards in raising student achievement: Findings from three studies. *The Journal of Educational Research, 101*(4), 195–206.

Doherty, R., W. & Hilberg, R. S. (2007). Standards for effective pedagogy, classroom organization, English proficiency, and student achievement. *The Journal of Educational Research, 101*(1), 24–34.

Drew, P. (2013). Turn design. In J. Sidnell, & T. Stivers. (Eds.), *The handbook of conversation analysis* (pp. 131-149). Wiley Blackwell.

Drew, P. (2015). Conversation analysis. In J. Smith (Ed.), *Qualitative Psychology: A practical guide to research methods* (pp. 133–159). Sage.

Drew, P., & Heritage, J. (1992). Analyzing talk at work: An introduction. In P. Drew, & J. Heritage (Eds.), *Talk at work. Interaction in institutional settings* (pp. 3–65). Cambridge University Press.

Eggins, S., & Slade, D. (1997). *Analysing casual conversation.* Cassell.

Engles, J., Bruno, B., Dasalla, N., & Böttjer-Wilson, D. (2019). *Class observations from the University of Hawaiʻi at Manoa highlight the need for active learning strategies to support diverse students in large classes*. Paper presented at the 5th International Conference on Higher Education Advances.

Erikson, E. H. (1968). *Identity: Youth and crisis.* Norton.

Estrada, P. (2005). The courage to grow: A researcher and teacher linking professional

    development with small-group reading instruction and student achievement. *Research in*

    the Teaching of English, 39(4), 320–364.

Flanders, N. A. (1970). *Analyzing teaching behavior.* Addison-Wesley.

Frambach, J. M., Driessen, E. W., Beh, P. S. L., & Van der Vleuten, C. (2014). Quiet or

    questioning? Students' discussion behaviors in student-centered education across cultures.

    Studies in Higher Education, 39(6), 1001–1021.

Galbraith, M. W., & Jones, M. S. (2006). The art and science of teaching developmental

    mathematics: Building perspective through dialogue. *Journal of Developmental*

    Education, 30(2), 20–27.

Gallimore, R., & Tharp, R. G. (1992). Teaching mind in society: Teaching, schooling, and literate

    discourse. In L. Moll (Ed), *Vygotsky and education: Instructional implications and*

    applications (pp. 175–205). Cambridge University Press.

Gardner, R. (2012). Conversation analysis in the classroom. In J. Sidnell, & T. Stivers (Eds).

    Handbook of conversation analysis (pp. 593–612). Blackwell.

Gill, R. (2000). Discourse analysis. In M. W. Bauer, & G. Gaskell, (Eds.), *Qualitative researching*

    with text image and sound: A practical handbook. Sage.

Given, L. M. (2008). *The sage encyclopedia of qualitative research.* Sage.

Goh, S. S., Yamauchi, L. A., & Ratliffe, K. T. (2012). Educator's perspectives on instructional

    conversations in preschool settings. *Early Childhood Education Journal, 40*, 305–314.

Goldenberg, C. (1991). *Instructional conversations and their classroom application.* Educational

    Practice Reports, Center for Research on Education, Diversity and Excellence, UC

    Berkeley.

Hammersley, M. (2003). Conversation analysis and discourse analysis: Methods or paradigms?

    Discourse and Society, 14(6), 751–781.

Haneda, M. (2008). Contexts for learning: English language learners in a US middle school.

    International Journal of Bilingual Education and Bilingualism, 11(1), 57–74.

Hilberg, R. S., Tharp, R. G., & DeGeest, L. (2000). The efficacy of CREDE's Standards-based

    instruction in American Indian mathematics classes. *Equity and Excellence in Education,*

    33(2), 32–40.

Hoare, C. (2006). *Handbook of adult development and learning.* Oxford University Press.

Jarvis, P., Holford, J., & Griffin, C. (2010). *The theory & practice of learning.* Routledge.

Kahneman, D. (2011). *Thinking fast and slow.* Farrar, Straus and Giroux.

Kahneman, D., & Tversky, A. (1972). Subjective probability: A judgment of representativeness.

    Cognitive Psychology, 3(3), 430–454.

Kane-Urrabazo, C. (2006). Management's role in shaping organizational culture. *Journal of*

    Nursing Management, 14, 188–194.

Kenner, C., & Weinerman, J. (2011). Adult learning theory: Applications to non-traditional

    college students. *Journal of College Reading and Learning, 41*, 87–96.

Knowles, M. (1975). *Self-directed learning*. Follet.

Knowles, M. H., Holton, E. F., & Swanson, R. S. (1998). *The adult learner.* Elsevier.

Knowles, M. (1980). *The modern practice of adult education: From pedagogy to andragogy.*

    Cambridge Adult Education.

Kohlberg, L. (1981). *Essays on moral development: Vol I. The philosophy of moral development.*

    Harper & Row.

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation.* Cambridge

    University Press.

Lester, J. N., & O'Reilly, M. (2019). *Applied conversation analysis.* Sage.

McIntyre, E., Kyle, D.W., & Moore, G. (2006). A teacher's guidance toward small group dialogue

    in a low-SES primary grade classroom. *Reading Research Quarterly, 41*(1), p. 36–63.

Mehan, H. (1979). *Learning lessons: Social organization in the classroom.* Harvard University

    Press.

Mercer, N. (2000). *Words and minds: How we use language to think together.* Routledge.

Mezirow, J. (1990). *Fostering critical reflection in adulthood: A guide to transformative and

    emancipatory learning.* Jossey-Bass.

Mezirow, J. (1997). Transformative learning: Theory to practice. *New Directions for Adult and

    Continuing Education, 74*, 5–12.

Miller, P. H. (2016). *Theories of developmental psychology*. Macmillan Learning.

Mills, A. J., Durepos, G., & Wiebe, E. (2010). *Sage Encyclopedia of case study research. Sage.*

Mondada, L. (2013). The conversation analytic approach to data collection. In J. Sidnell & T.

    Stivers (Eds.), *The handbook of conversation analysis* (pp. 32–56). Blackwell Publishing.

Lofthouse, R., & Thomas, U. (2015). Concerning collaboration: teachers' perspectives on

    working in partnerships to develop teaching practices. *Professional Development in*

    Education, 43(1), 36–56.

Luwel, K. (2012). Microgenetic method. In N. M., Seel (Ed.), *Encyclopedia of the sciences of*

    learning. Springer.

O'Reilly, M., Lester, J. N., & Musket, T. (2016). Discourse/conversation analysis and autism

    spectrum disorder. *Journal Autism Developmental Disorder, 46*, 355–359.

Pane, D. M., & Rocco, T. S. (2009). Critical microethnography: The search for emancipatory

    methods. *Qualitative Social Research, 10*(2), Article 12.

Perry, W. G., Jr. (1999). *Forms of intellectual and ethical development in the college years.*

    Jossey-Bass.

Potter, J. (2004). Discourse analysis. In M. Hardy & A. Bryman (Eds.), *Handbook of data*

    analysis (pp. 607–642). Sage.

Radvansky, G. A., & Ashcraft, M. H. (2018). *Cognition.* Pearson Education.

Rogoff, B. (1982). Integrating context and cognitive development. In M. E. & A. L. Brown

    (Eds.), *Advances in developmental psychology* (Vol. 2) (pp. 1265-170). Lawrence

    Erlbaum Associates.

Rogoff, B. (1990). *Apprenticeship in thinking: Cognitive development in social context.* Oxford

    University Press.

Rueda, R., Godlenberg, C., & Gallimore, R. (1992). *Rating instructional conversations: A guide.*

    National Center for Research on Cultural Diversity and Second Language Learning.

Sacks, H., Schegloff, E. A., & Jefferson, G. (1974). A simplest systematics for the organisation of

    turn-taking for conversation. *Language, 50,* 696–735.

Salthouse, T. (2012). Consequences of age-related cognitive declines. *Annual Review of*

    Psychology, 63, 201–226.

Sanford, N. (1966). *Self and society: Social change and individual development.* Atherton.

Saunders, W. M., & Goldenberg, C. (1999). The effects of instructional conversations and

    literature logs on the story comprehension and thematic understanding of English

    proficient and limited English proficient students. *The Elementary School Journal, 99*(4),

    277–301.

Saunders, W. M., & Goldenberg, C. (2007). The Effects of an instructional conversation on

    English language learners' concepts of friendship and story comprehension. In R.

    Horowitz (Ed.), *Talking texts: How speech and writing interact in school learning* (pp.

    221–252). Lawrence Erlbaum.

Schegloff, E. A. (1992). Introduction to Volume 1. In G. Jefferson (Ed.), *Lectures on*

    conversation, volume I. Basil Blackwell.

Schiffrin, D., Tannen, D., & Hamilton, H. E. (2001). *The handbook of discourse analysis.*

    Blackwell Publishers.

Seedhouse, P. (2004). Conversation analysis methodology. *Language Learning, 54*(1), 1–54.

Shaw, S., & Bailey, J. V. (2009). Discourse analysis. What is it and why is it relevant to family

    practice? *Family Practice, 25*(5), 413–419.

Simons, H. (2014). Case study research: In-depth understanding in context. In P. Leavy (Ed.), *The Oxford handbook of qualitative research.* Oxford University Press.

Small, M. L. (2009). How many cases do I need? On science and the logic of case selection in field-based research. *Ethnography, 10,* 5–38.

Stake, R. (2005). Qualitative case studies. In N. K. Denzin, & Y. S. Lincoln (Eds.), T*he Sage handbook of qualitative research* (pp. 443–466). Sage.

Stiles, A. S. (2005). Parenting needs, goals, and strategies of adolescent mothers. MCN: The *American Journal of Maternal/Child Nursing, 30,* 327–333.

Stivers, T., & Sidnell, J. (2013). Introduction. In J. Sidnell, & T. Stivers (Eds.), *The handbook of conversation analysis* (pp. 1–8). Blackwell Publishing.

Stoddard, H. A., & O'Dell, D. V. (2016). Would Socrates have actually used the "Socratic Method" for clinical teaching? *Journal of General Internal Medicine, 31*(9), 1092–1096.

Teemant, A., Wink, J., & Tyra, S. (2011). Effects of coaching on teacher use of sociocultural instructional practices. *Teaching and Teacher Education, 27*, 683–693.

ten Have, P. (2007). *Doing conversation analysis: A practical guide.* Sage.

Tennant, M. (2020). *Psychology and adult learning.* Routledge.

Tharp, R., & Gallimore, R. (1988). *Rousing minds to life: Teaching, learning, and schooling in social context.* Cambridge University Press.

Tharp, R. & Gallimore, R. (1991). *The instructional conversion: Teaching and learning in social activity.* National Center for Research on Cultural Diversity and Second Language Learning Research.

Tharp, R. G., & Dalton, S. S. D. (2007). Orthodoxy, cultural compatibility, and universals in

    education. *Comparative Education, 43*(1), 53–70.

Tharp, R. G., Estrada, P., Dalton, S. S., & Yamauchi, L. A. (2000). *Teaching transformed:*

    achieving excellence, fairness, inclusion, and harmony. Westview Press.

Toerien, M. (2014). Conversations and conversation analysis. In U. Flick (Ed.), *The SAGE*

    handbook of qualitative data analysis (pp. 327–340). Sage.

Tsui, A. B. (2012). Ethnography and Classroom Discourse. In J. P. Gee, & M. Hanford (Eds.), *The*

    Routledge handbook of discourse analysis (pp. 383–395). Routledge.

Vygotsky, L. S. (1978). *Mind in society.* Harvard University Press.

Waynor, W. R., Pratt, C. W., Dolce, J., Bates, F. M., & Roberts, M. (2005). Making employment a

    priority in community mental health: Benefits of demonstrating direct mental health:

    Benefits of demonstrating direct employment practice. *American Journal of Psychiatric*

    Rehabilitation, 8, 103–112.

Wells, G. & Haneda, M. (2005). Extending instructional conversation. In O'Donnell, C. R., &

    Yamauchi, A. (Eds.), *Culture and context in human behavior change* (pp. 151–178). Peter

    Lang.

Wells, G., & Arauz, R. M. (2006). Dialogue in the Classroom. *Journal of the Learning Sciences,*

    15, 379–428.

Wertsch, J. V. (1984). The zone of proximal development: Some conceptual issues. *New*

    Directions for Child Development, 23, 7–18.

Wertsch, J. V. (1985). *Vygotsky and the social formation of mind.* Harvard University Press.

Wertsch, J. V. (1991). *Voices of the mind: A sociocultural approach to mediated action.* Harvard

    University Press.

Williams, K. (2017). Using social learning theory to engage adults through extension education.

    NACTA Journal, 61(3), 263–264.

Wittrock, M. C. (1990). Generative processes of comprehension. *Educational Psychologist, 24,*

    345–376.

Wong, J., & Waring, H. Z. (2010). *Conversation analysis and second language pedagogy: A*

    guide for ESL/EFL teachers. Routledge.

Wooffitt, R. (2005). *Conversation analysis & discourse analysis: A comparative and critical*

    introduction. Sage.

Wyatt, T. R., Yamauchi, L. A., & Chapman deSousa, B. (2012). Using the CREDE standards for

    effective pedagogy in a Greenland settlement school. *Multicultural Perspectives, 14*(2),

    65–72.

Yamauchi, L. A., Taira, K., & Trevorrow, T. (2016). Effective instruction for engaging culturally

    diverse students in higher education. I*nternational Journal of Teaching and Learning in*

    Higher Education, 28(3), 460–470.

Yamauchi, L., Im, S., & Mark, L. (2013). The influence of professional development on

    educators' Instructional Conversations in preschool classrooms. *Journal of Early*

    Childhood Teacher Education, 34(2), 140–153.

Zack, V., & Graves, B. (2002). Making mathematical meaning through dialogue: "Once you think

    of it, the Z minus three seems pretty weird." *Learning Discourse, 46,* 229–271.