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Addressing the Theory-Practice Gap Using Case-Based Learning and Imagined Roles in the Graduate Communication Disorders Classroom

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Abstract

The American Speech-Language-Hearing Association (ASHA) Code of Ethics (2023) requires all practitioners to uphold the welfare of others without discrimination. Graduate programs in communication sciences and disorders, therefore, must guide future clinicians to apply theoretical knowledge to clinical practice equitably and inclusively. This grounded theory study investigated how an instructor in a graduate communication sciences and disorders (CSD) class used case-based learning (CBL) to fill the theory-practice gap and guide students to think equitably and inclusively for future complex cases. Audio recordings from 12 hours of instructor-student discourse during one semester were transcribed and analyzed verbatim. Three interrelated, interactional themes emerged: the class structure, use of imagined roles (imagining how a clinician or parent/caregiver may respond), and use of equitable and inclusive language. Results highlighted how the instructor's use of CBL was one effective method to scaffold learning and help fill the theory-practice gap and promote students' co-construction of new knowledge. We propose that utilizing this three-fold approach was an effective way to help fill the theory-practice gap in an equitable and inclusive manner to further student learning without the need to overhaul the curriculum.

Keywords

Communication Disorders, Case-Based Learning, Theory-Practice Gap, Graduate Teaching and Learning, Cognitive Apprenticeship, Co-Constructed Knowledge, Equity and Inclusiveness

Disability as a construct lies at the nexus of sociocultural history, race, socioeconomic status, medicine, state, and person. The traditional medical model locates it within persons presumed to have deficits. Mitra et al. (2022) propose a definition that accounts for context in their definition of disability as an "interaction between a person's functional impairments…and the physical and social environment' (p.1380). Lee et al. (2020), Horner-Johnson (2021), and Artiles (2019), on the other hand, locate disability in a cultural/historical context, pointing out the "marked categories" of disproportionality and race, and the problem of representation. The nineteenth century view of normality as an expression of progress (Baynton, 2013) meant that non-Caucasians and those with disabilities were hierarchically demeaned and legally prevented from immigration and inclusion (Baynton, 2016). As Vehmas and Watson (2014) point out, critical disabilities studies have contended that the barrier between those with and without disabilities is artificial and based on ableist assumptions. However, they continue, "both individual and social factors are significant to the achievement of central human functionings/capabilities" (Vehmas & Watson, 2014, p. 645).

In seeking to resolve the impaired/unimpaired dualism, Artiles et al. (2020) argue for Cole and Packer's (2016) bio-cultural perspective, pointing out the ways in which learning is culturally mediated. In their description of how learners use improvisation when they encounter barriers, they find that Vygotsky (1978) considers those with learning disabilities as "active agents who controlled or modified both their behaviors and their immediate environment" (p. 161). These active agents were willing to use the help of more expert others to learn.

The complex issues of representation and intersectionality have implications for the estimated 61 million people in the US who report having a disability (Okoro et al., 2018). As Mitra et al. (2022) point out, this population is composed of both adults and children, so who gets the label of disabled can be a fraught question with implications for health, education, and inclusion for a wide range of citizens. However, although disability studies have historically been concerned with these issues of equity and justice, they are frequently absent from the preschool-12 and post-secondary educational landscape (Akakpo et al., 2020) despite the fact that equitable and inclusive practice is a basic underpinning/tenet in communication sciences and disorders (CSD) education and ultimately of clinical practice.

Institutions that model equitable practices can become cultural tools for change, as Penuel (2020) argues. Universities with active disabilities support offices model inclusive strategies fully integrated into faculty and student practices, especially when they have the visible support of organizational leadership. This integration can be especially powerful when professionals themselves have disabilities. Penuel (2020) also notes that internships, which are zones of learning accomplished with more expert others, can be structured opportunities in which students enact and reflect on institutional practices of equity in spaces other than the classroom. At the same time, curricula should fully integrate core disabilities competencies into coursework.

Coursework that goes beyond didactics often uses one or more active learning strategies, e.g., case-based learning, problem-based learning, or team-based learning. While there are variations within each, they are all collaborative and presuppose that learners construct their knowledge (Vygotsky, 1978) rather than receiving it from someone else. Such knowledge building models professional collaboration and contributes to the knowledge base of the community and increasing engagement. Case-based learning (CBL) is frequently used in health professions education since written or

video cases can be proxies for practice. As Jonassen and Hernandez-Serrano (2002) argue, stories are valuable in fields like medicine, where students must learn to contend with the kinds of ill-structured problems they will see in the clinic. Because learners have built their knowledge, it is available for transfer into real-life situations.

Although there is copious research on CBL (see, for example, Zheng & Mavis, 2022), many studies are systematic reviews of the literature (e.g., Maia et al., 2023); studies of preferences and perceptions of faculty and students; or analyses of learning outcomes. Investigating how knowledge is constructed in CBL is best accomplished through minute-by-minute analysis of the discourse students use as they begin to synthesize case information and then evaluate it; this area is understudied.

Theoretical Framework

This study investigates how one graduate course in communications sciences and disorders (CSD) incorporated student clinical experience in internships, theoretical classroom knowledge, and prior learning. The course used textbook cases and cases derived from the experiences of both the instructor and students as the locus of discussion in a collaborative classroom setting. Carefully constructed cases are the meeting point of the practical and theoretical in which each illuminates the other. As Fish and Boniface (2012) argue, theory is best "developed within practice"; when it is "*applied to practice*, it is likely that …the *theory* has been constructed by someone other than a practitioner and handed down to those *on the ground" (*p. 17*;* emphasis in the original*).* Two central problems in didactic coursework are first, how to include those "on the ground," and second, creating opportunities for clinical thinking that link practice to theory. The students and their instructor in our study addressed both problems by using case-based learning and informally imagining themselves in the roles of clinicians and caregivers as they considered treatment issues in complex cases.

Active Learning Models. Equity, inclusivity, patient-centered care, and individualization provide the underpinnings for clinical practice in communication sciences and disorders (Kennedy et al., 2018; Levey, 2023; Rose & Strangman, 2007; Roth & Worthington, 2021), while several active learning models encourage the development of rigorous processes to overcome the theory/practice gap. These active learning models can be effective proxies for clinical practice. For example, Deuster et al. (2008) suggested a 3-stage process of seminar (didactic), practical (students practicing on peers), and demonstrations with patients. Problem-based learning (PBL) used in coursework can help medical students develop diagnostic practice prior to clinical coursework (Hmelo-Silver & Barrows, 2008; Thompson, 2019). PBL can also incorporate skills needed to integrate evidence-based practice (EBP) into clinical care in communication disorders (Visconti, 2010). In applying PBL specifically to cognitive communication disorders, Morrow et al. (2021) argued that its integration of theory and practice improves practitioner confidence. Epstein (2016) used team-based learning (TBL; Michaelson et al., 2002), a multi-stage collaborative process that unites didactic learning and problem solving. However, as Epstein notes, many students preferred lecture-based classes to the TBL process, and both TBL and PBL are labor intensive for instructors. Finally, case-based learning (CBL) requires students to use collaborative inquiry-based learning (Thistlethwaite et al., 2012) that combines theoretical and clinical aspects of cases. Instructors verbalizing their thoughts, also called "think alouds," serves as a valuable tool to identify students'

thinking as they verbalize theirs during CBL (Sauerwein & Thistle, 2023). The goal of all these active learning models is to encourage cognitive apprenticeship–learning to think like a clinician (Collins et al., 1991) --a process that situates learning in doing or in proxies such as CBL.

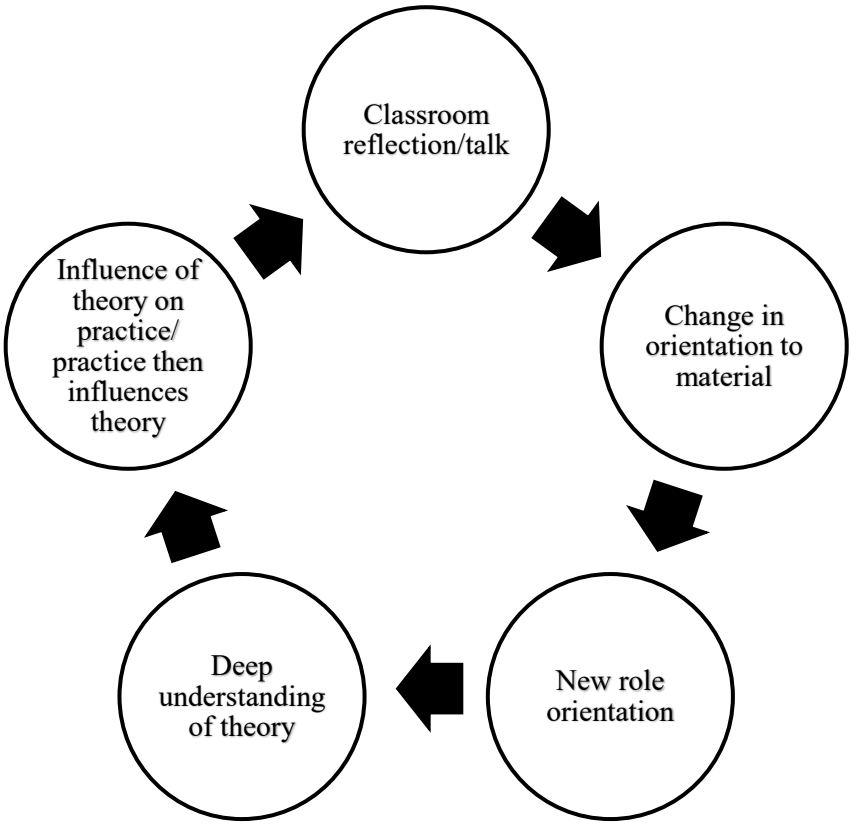
Case-Based Learning. CBL is an ideal learning modality for health professions because it offers proxies for real-world cases, and encourages students to synthesize and evaluate knowledge (Anderson et al., 2001). Its collaborative discussion structure encourages learners to make their thinking visible (Collins et al., 1991) for others to consider. This structure promotes deeper learning as participants reflect on what they and others are arguing, and it has further implications for practice "within social contexts" (Lyons et al., 2017, p.724). These social contexts include not only the theorizing and the authentic activity of the classroom but also that of the clinical experience. When structured thoughtfully, CBL becomes an opportunity for students to unite these and to begin to imagine themselves in, for example, the role of a clinician. Collins and colleagues (1991) labeled learning to think like an expert as a cognitive apprenticeship, in which students not only figure out how to find answers but also acquire an awareness of the skills that allow them to do so. This expertise can further allow participants to imagine themselves in the roles of caregivers and clients when addressing challenges in the cases. These roles are important as they allow students to see how distributed cognition (the knowledge all the players have) can benefit practice. This recursive process offers a theoretical lens through which to see practice and vice versa, as illustrated in Figure 1.

Active learning models like CBL encourage students to develop their professional thinking and to provide equitable, competent, and inclusive care (American Speech-Language-Hearing Association [ASHA], 2020, 2023; Council for Clinical Certification in Audiology and Speech-Language Pathology of the American Speech-Language-Hearing Association [CFCC], 2018; Thistlethwaite et al., 2012) while also simultaneously navigating and addressing the needs of clients and parents/caregivers (Badesha et al., 2023) early in their training. Although all these learning models have been applied to communications disorders, more precise studies of how best to incorporate clinical thinking into didactic classes are important at a time when, as McBride (2022) notes, the practice of speech-language pathology is expected to increase.

Two papers that discuss the implementation of CBL in speech-language programs (Leahy et al., 2010; Meilijson & Katzenberger, 2015) report on the complexities of curriculum design and program implementation. Like other active learning modes that promote student construction of knowledge, CBL requires substantial preparation of cases that represent real-world instances, engage students, and promote the development of knowledge necessary to meet course objectives. Coursework and curricula that incorporate CBL must be carefully structured to give students the opportunity to integrate what they are learning.

Figure 1

Theoretical Framework Illustrating the Recursive Process During Case-Based Learning



Purpose and Research Questions

The purpose of this study is to investigate how the interactions between the instructor and students during CBL were structured, how the interactions impacted students' knowledge construction, and encouraged students to connect theory to practice in an equitable and inclusive manner. Our research questions included the following:

1. What interactional structures were evident in the graduate CD class?
2. How did these structures encourage students to connect theory to practice?
3. How did the classroom structure impact the students' knowledge construction during CBL?
4. How are equity and inclusion embedded in class structures?

Method

Overview. We situated this qualitative study in a constructivist framework, which emphasizes the importance of social interaction and creates opportunities to share ideas and knowledge in the learning process (Crichton, 2013; Miyake & Kirschner, 2014; Nathan & Sawyer, 2014; Vygotsky,

2012). This sharing is accomplished primarily through language, an essential component in sociocultural learning, which then guides cognitive development (Nathan & Sawyer, 2014; Powell & Kalina, 2009; Vygotsky, 1978, 2012). Qualitative data collection focuses on naturally occurring events, taking the context into account (Miles et al., 2014). Further, it provides a rich and holistic description of people's lived experiences, events, and processes collected over a sustained period (Miles et al., 2014). We employed discourse analysis to analyze "language-in-use" in our specific context (Gee, 2014, p. 19), which were class meetings in which case studies were presented.

We used a grounded theory design to examine data from instructor and student discourse during CBL activities in a graduate communication disorders classroom at one university. A grounded theory design (Strauss & Corbin, 1994) focuses on a "process or action that has distinct steps or phases over time" (Creswell & Poth, 2018, p. 83). Using this qualitative approach, which allows explanation of a practice to generate a new theory or framework (Billups, 2021; Creswell & Poth, 2018), was appropriate to investigate how instructor use of CBL can help fill the theory-practice gap in an equitable, inclusive way (Raurell-Torredà et al., 2015; Yoo & Park, 2015). Ethical approval was obtained from the Institutional Review Board (IRB) of the supporting university prior to beginning the study.

Context. This study was conducted at a comprehensive university offering a graduate degree in communication disorders. This program was purposely selected because prior to degree completion, students engage in firsthand clinical work in the campus speech and language clinic, followed by two semesters of off-campus fieldwork placements while concurrently completing coursework. Additionally, the program adheres to standards of practice that expect students to integrate theoretical knowledge, interpret and analyze available information, and make ethical and inclusive recommendations using clinical reasoning skills (CFCC, 2018).

Participants and Recruitment. Participants included 32 second-year graduate students (an entire cohort) and their instructor. Student participants were in their second year of coursework while also completing off-campus fieldwork. Of the 32 student participants, 30 (94%) identified as female and two (6%) identified as male. All student participants had similar undergraduate programs in which they completed prerequisite coursework for admission into the graduate program. Additionally, all student participants entered the graduate program in the academic year following the completion of their undergraduate degree.

The instructor had over 30 years of experience as a speech-language pathologist and over 20 years as a faculty instructor. She was selected because she teaches a course that exposes students to complex disorders they may encounter in clinical work and incorporates CBL as a teaching strategy to facilitate discussion. All participants (instructor and students) self-selected pseudonyms to maintain confidentiality. Further, all data were stored on a password-protected computer and in a locked file cabinet.

Course Design. Data collection took place in a course called *Communication Disorders in Special Population*s. This required course was offered in the last semester of graduate coursework and taken concurrently with the last off-campus clinical placement prior to graduation. The course was designed by the instructor and organized to cover weekly topics. The course met one time per week for three hours in the evening. One teaching strategy employed by the instructor, case-based

learning, encourages the application of theoretical knowledge to apply to real-world clinical cases (Raurell-Torredà et al., 2015; Yoo & Park, 2015). The instructor incorporated case studies for each course topic. During week three, the case studies focused on genetically linked disorders, developmental speech-language disorders/delays, and stuttering. In week four, the case studies focused on hearing loss. Case studies focusing on Autism and Rett Syndrome were presented in week six. Finally, during week eight, the cases centered on Fragile X and Down Syndrome.

Prior to class each week, students were expected to complete assigned readings including case studies about scheduled topics. Class sessions typically followed a consistent schedule. First, the instructor introduced the weekly topic through a combination of lecture and discussion, incorporating her personal clinical experiences, and also encouraging students to share their related experiences from clinical internships. Then, the class reviewed and discussed the written cases relevant to the daily topic. A total of 16 cases (three to five per week) were presented over four data collection sessions. During week three, the instructor offered the students the option to discuss the cases in small groups before reviewing them as a large group, however, the students requested to discuss the cases only as a large group. During weeks four and eight, the students discussed the cases in small groups immediately prior to the large group discussion, and during week six, the instructor did not utilize small group discussions. Small group discussions (five to six students in each group) were not recorded because they included only the students, not the instructor, in the interactions.

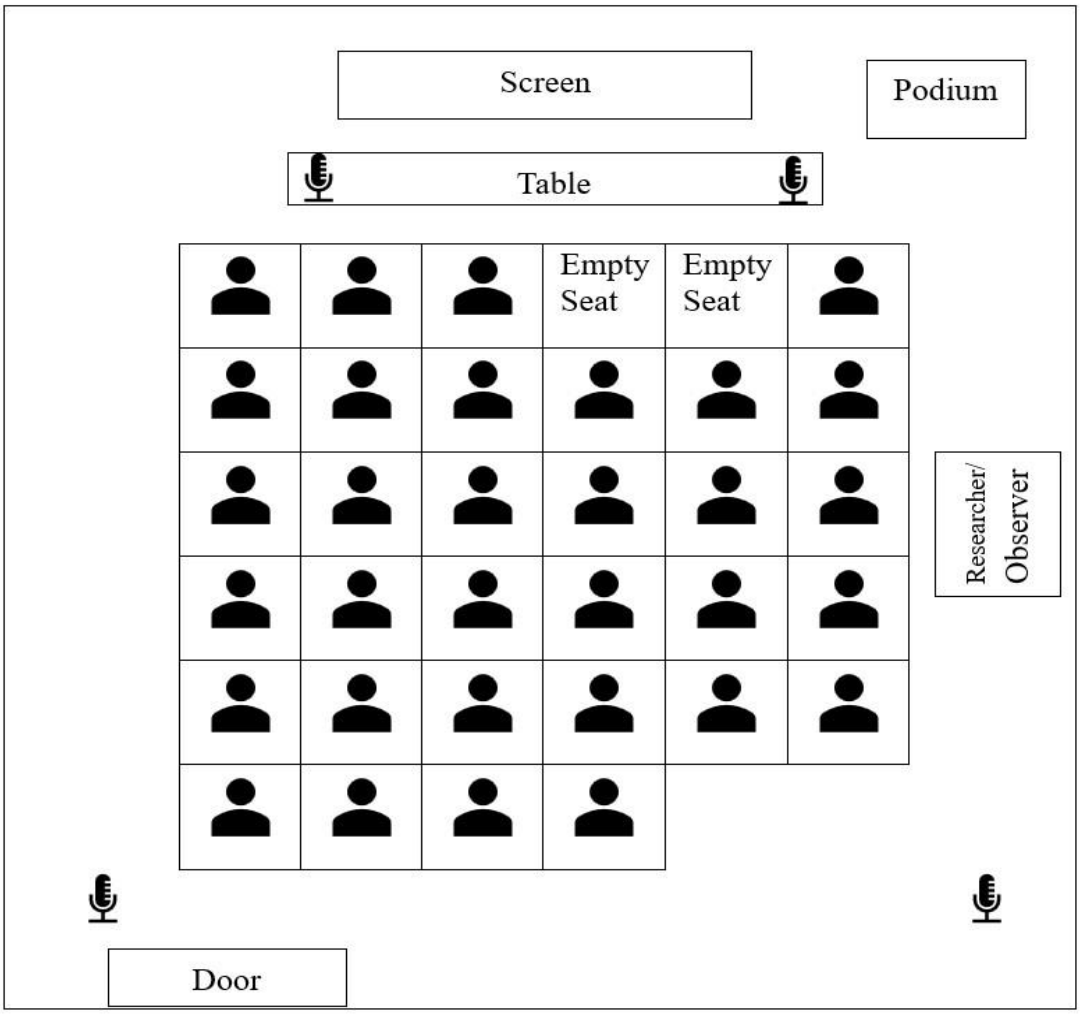
Apart from one session held online, weekly class meetings were held in the same classroom space. The podium and screen were in the front of the room opposite the door. Long tables with moveable chairs were arranged in rows. The instructor supplemented her discussions with PowerPoint presentations that were projected on the screen from the podium next to the screen in the front of the room. The instructor routinely directed the class from the podium with some occasional movement around the front of the classroom. Seats were not assigned, but all students sat in the same place every class meeting. Despite the seating arrangement being in rows, the chairs were moveable, which allowed for students to turn and face each other during discussions. The observer sat to the side, near the center of the room. The classroom layout is illustrated in Figure 2.

During the large group discussion, the instructor guided the students in discussion about various aspects of the case including the history, current patient functioning, and recommendations for care. Additionally, the instructor provided a 10–15-minute break midway through each class session and reserved the last several minutes for announcements.

Data Collection. The first author served as a non-participatory observer for all data collection sessions. The primary data source was audio-recordings of instructor-student discourse during CBL activities over four class sessions (total of 12 hours) throughout the semester. Four digital recorders were placed near the corners of the room to assure at least one device was near every participant which provided recordings from different vantage points.

Figure 2

Physical Arrangement of the Classroom Space During Classroom Interactions



The specific data collection schedule was arranged with the instructor prior to the beginning of the semester to specifically include class sessions that included CBL activities. The original schedule included weeks three, four, six, eight, ten, and eleven. Due to an emergency, however, one session was canceled (week 11) and rescheduled to week 14. Week 12 class was canceled according to the university calendar, and week 13 class was held online. Other disruptions to the general class structure also included a guest speaker (week 10) and group presentations (week 14). Therefore, only data from audio-recorded class sessions incorporating CBL (weeks three, four, six, and eight) were included in this study.

Second, data were also collected using detailed field notes from observations that included detailed descriptions of the environment and interactions, and observer comments including insights and

questions or commentary regarding meanings (Rossman & Rallis, 2017; Yin, 2014). Field notes provided thick descriptions (Geertz, 1973) about the social interactions between the participants and the classroom context (Rossman & Rallis, 2017), including the physical environment, social structure, and interactional relations among participants (Creswell & Poth, 2018). The classroom layout limited movement around the room. Despite this constrained arrangement, the chairs swiveled and allowed participants to turn and face each other during discussions.

Data Analysis. Data analysis was completed using a recursive process incorporating first- and second-, and third-cycle coding interspersed with analytic memos (Creswell & Poth, 2018; Saldaña, 2021) as illustrated in Figure 3.

First, all audio recordings were transcribed verbatim. Repeated listening (Bailey, 2008) to audio recordings was used to ensure accuracy of transcriptions. All transcripts and detailed field notes were then organized and prepared for analysis (Creswell & Creswell, 2023). Data were then reviewed to get a general sense of the data and discourse patterns in the classroom (Creswell & Creswell, 2023).

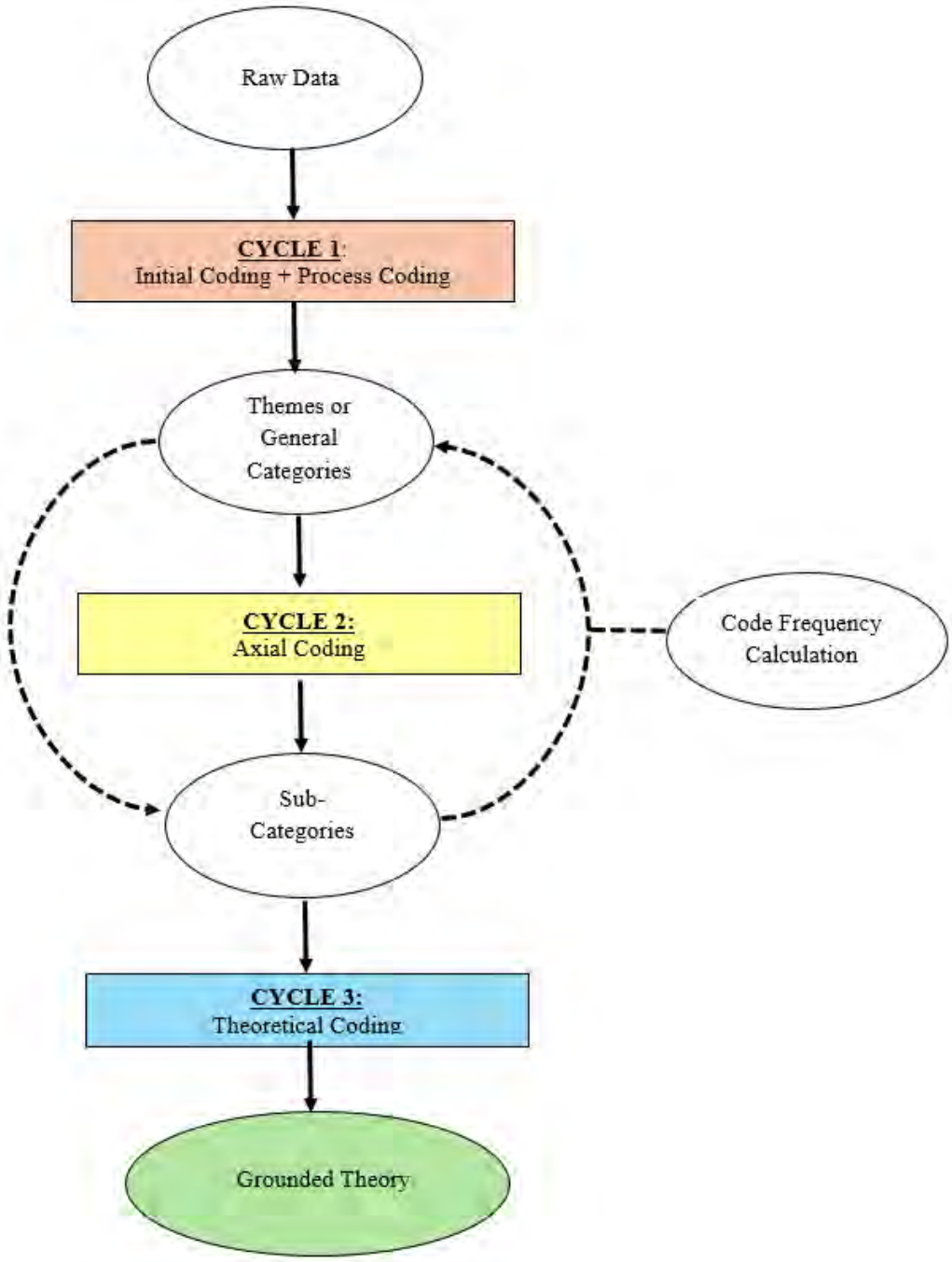
Analysis continued in a recursive process, including reading the data and using memos to record emergent themes and coding (Creswell & Poth, 2018). First, the authors organized the data, then completed a holistic reading of transcripts to get a general sense of the data. Next, both authors coded the data manually without the use of coding software. Initial coding creates a starting point for data analysis, breaking data into discrete parts and comparing similarities and differences for categorization (Saldaña, 2021). Process coding describes "observable activity" (such as reading and talking) or "conceptual actions" (such as struggling and adapting) (Saldaña, 2021, p. 143). Both methods are appropriate for grounded theory research (Saldaña, 2021) and in the first cycle of coding, initial coding was utilized simultaneously with process coding. Data were grouped into general themes or categories (Creswell & Creswell, 2023). In the second pass of the first iteration, instructor and student utterances were given general codes to identify general types of utterances both the instructor and students used in the classroom discussions.

Frequency counts in qualitative research can serve as a "supplemental heuristic to analysis" (Saldaña, 2021, p. 94). Following the first cycle of coding, we conducted frequency counts of the codes to uncover potential emergent patterns that were not yet uncovered (Saldaña, 2021). Analytical memos were also used to track assumptions, reflections, and identify emergent patterns and themes from the data (Creswell & Poth, 2018; Miles et al., 2014; Saldaña, 2021).

Second cycle coding was used "to develop a sense of categorical, thematic, conceptual, and/or theoretical organization" developed following first cycle codes (Saldaña, 2021, p. 297). A category "to determine which [codes] are the more dominant one and which are less important one" (Boeije, 2010, p. 109) are formed from the first cycle of coding. These categories form the "axis" in Axial coding (Saldaña, 2021, p. 308). Axial coding "aims to link categories with subcategories and asks how they are related (Charmaz, 2014, p.148). We used axial coding in the second iteration to further explore the relationship between categories and subcategories (Saldaña, 2021). Theoretical coding is useful as a culmination of integrating and synthesizing established categories to create a theory (Saldaña, 2021). We used theoretical coding as a third cycle as a last step in achieving a grounded theory (Saldaña, 2021).

Figure 3

Diagram of the Data Analysis Process



Throughout all cycles of coding, we kept detailed analytic memos to track reflections and assumptions throughout the analysis process (Saldaña, 2021). The researchers jointly developed a codebook including definitions that was applied to all transcripts. Once the final codebook was developed, both authors then independently coded all utterances. Lastly, themes were developed through multiple returns to the data and then through personal conversation (Braun & Clarke, 2006). The final codebooks with examples of instructor and student utterances from the transcripts are provided in Tables 1 and 2.

As qualitative researchers, we understand that our positionality in the research influences the design, execution, and interpretation of findings in this study. The first author is a certified speech-language pathologist who teaches classes in communication disorders and adopts active learning strategies, including CBL. Further, both researchers are qualitative researchers who use discourse analysis to understand social interactions in the classroom. Therefore, we recognize that interpretation of results may have been influenced by our constructivist pedagogy.

Trustworthiness of the data collection, analysis procedures, and findings were addressed in several ways. First, prolonged time in the field allowed the researchers to "develop an in-depth understanding of the phenomenon under study and can convey detail about the site and the people" (Creswell & Creswell, 2023, p. 214). The first author collected data over four class sessions (totaling 12 hours), which allowed for an in-depth understanding of the course design, instructor-student interactions, and how CBL was incorporated in a didactic setting. Second, thick descriptions gave an element of "shared experiences" and a richer understanding of the participants' experiences (Creswell & Creswell, 2023, p. 214). Detailed field notes allowed researchers to formulate thick descriptions (Geertz, 1973) about the classroom environment and the instructor-student interactions. It also allowed reflection about assumptions and biases as well as test plausible explanations. Third, triangulation of data, using multiple data sources, methods, and investigators was employed to corroborate evidence from multiple data sources (Creswell & Poth, 2018). Both researchers reviewed and revisited the multiple data sources. These insights were then used in the interpretation and analysis process.

Reliability was also addressed using multiple strategies. First, multiple, high quality recording devices were placed in the four corners of the classroom to capture all discussions and ensure accuracy of recordings. Digital recordings were then transcribed verbatim using repeated listening (Bailey, 2008) for accuracy. Pauses, revisions, and overlaps were included in the transcriptions (Creswell & Poth, 2018) to provide a better understanding of the instructor-student interactions. Next, we developed a shared codebook between both authors (Creswell & Poth, 2018). Throughout the analysis process, we kept detailed analytic memos to track reflections and assumptions throughout the analysis process (Saldaña, 2021). Once the final codebook was developed, both authors independently applied codes to all transcripts. Intercoder agreement was 94.53%. Disagreements were resolved through discussion.

Table 1

Final Codebook of Instructor Utterances Including Codes, Definitions, and Examples

Instructor Codes	Definition	Example
Facilitator (I-F)	Moving the class forward; Directing the class	"What do you mean by that?"
Assessor (I-A)	Evaluative; Agreeing or disagreeing by instructor	**"**That's exactly right. So, it's a great example."
Teacher/Expert/ Researcher (I-T):	Explanation of content or "how to;" Setting theoretical framework and providing background information	**"**So, if you see a constellation of symptoms that lead you to a direction of a disorder that has hearing loss as a potential characteristic then you are really going to dig in and look for hearing loss."
Sharing Clinical Experience (I-CE)	Providing personal clinical experience	**"**I've said that to a lot of clients that I've seen in my private practice. "I know you don't want to be here. I know that was never the plan to see a speech pathologist for your child" and then they laugh."
Parent/Caregiver (I-P)	Thinking from parent, caregiver, client perspective; Personal experience as a parent	"When my daughter was identified and went into preschool, she had already been getting services in early intervention."
Clinician (I-C)	Thinking from a general clinician role (not own); Reported speech as a clinician	**"**I think we approach them from a different perspective. Let's see if they can do it."
Voicing Text (I-VT)	Instructor reporting specific details presented in written and video case studies without furthering the conversation or rephrasing in one's own words	"She's choosing the topic. So, she sets up the topic on the characters, the events."
Equitable and Inclusive Language (I-IL)	Using language that demonstrates sensitivity toward client and/or family needs and without judgments	"You know I keep saying meet them where they are and without judgment."

Table 2

Final Codebook of Student Utterances Including Codes, Definitions, and Examples

Student Codes	Definition	Example
Sharing Clinician Experiences (S-CE)	Giving examples from own clinical experience	"At my placement now, we always just say 'assume that they can do it until they prove us wrong' kind of thing."
Parent/Caregiver (S-IP)	Thinking from parent, caregiver, client perspective; Personal experience as a parent	**"**They probably feel guilty in a way, that they may be the cause of their child's hearing loss."
Clinician (S-IC)	Thinking from a general clinician role (not own); Reported speech as a clinician	**"**So, you would want to see what it was like at home before you start treatment."
Voicing Text (S-VT)	Student reporting specific details presented in written and video case studies without furthering the conversation or rephrasing in one's own words	**"**They said it was like 35% and they were 10 times more likely."
Answering Questions (S-AQ)	Answering closed-ended questions/recall of information	Instructor Question: "What are other toxins or factors that affect the health of the baby in utero? **",** Student Answer (SA): **"**Exposure to--some houses have lead paint"
Facilitation (S-F)	Asking questions to clarify understanding of information or engaging others in discussion	"We just thought it was interesting and wanted to know what you guys thought."
Equitable and Inclusive Language (S-IL)	Using language that demonstrates sensitivity toward client and/or family needs and without judgments	"We always just say 'assume that they can do it until they prove us wrong.'"

Results

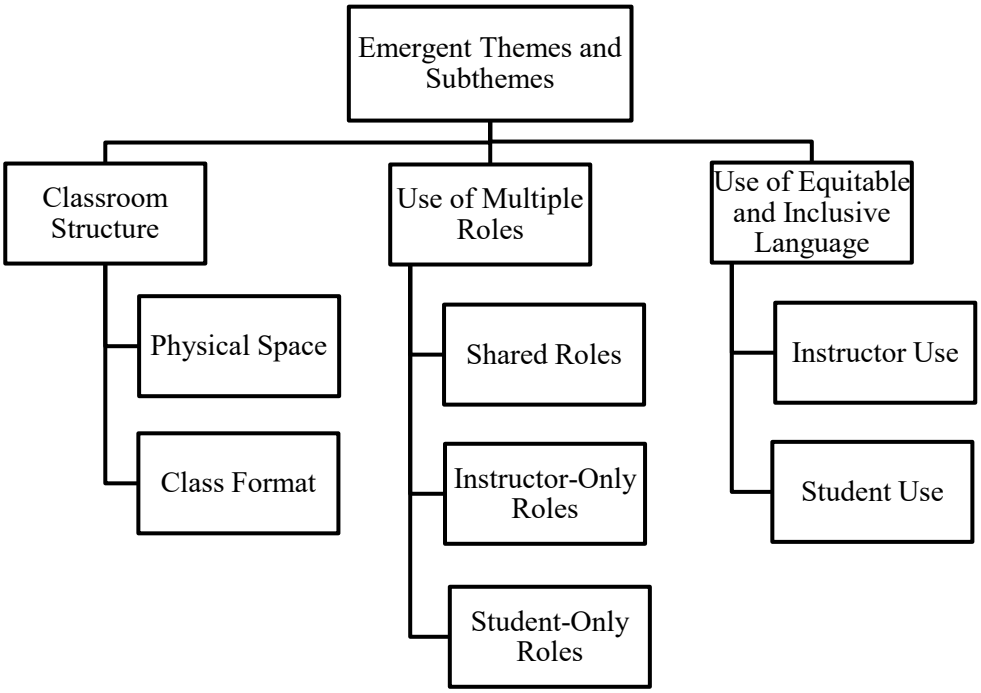
This study investigated how instructors in a graduate communication sciences and disorders (CSD) class used case-based learning as one strategy to provide students with practical learning in a didactic classroom to fill the theory-practice gap while providing inclusive and equitable care for future complex cases. Our findings highlight how the class structure and teaching strategies the

instructor uses can give students the space to think about complex clinical cases in an equitable and inclusive way.

We identified three primary interrelated, interactional themes that emerged: class structure, use of imagined roles (the participant imagining how the clinician and/or caregiver would respond), and use of equitable and inclusive language. The subthemes, which emerged within the primary themes, provided insight into how the interactions between the instructor and students helped connect theory to practice in an inclusive and equitable way. These themes and subthemes are illustrated in Figure 4.

Figure 4

Primary Interrelated and Interactional Emergent Themes and Subthemes from Data Analysis



Frequency counts of the data corpus provided a supplemental glimpse of the data but did not necessarily "suggest significance" (Saldaña, 2021, p. 94). As shown in Tables 3 and 4, frequency counts of identified codes did not always indicate specific upward or downward trends across the semester. Instead, the frequencies supplemented qualitative data to help identify the interactions of the emergent themes.

Table 3

Frequency of Instructor Use of Utterance Types Across All Data Collection Sessions

Instructor Utterances	Week 3	Week 4	Week 6	Week 8
I-F	106	127	73	72
I-A	99	98	65	39
I-T	66	81	57	51
I-CE	10	5	32	14
I-IP	3	15	18	1
I-IC	1	11	22	3
I-VT	3	0	3	2
I-IL	15	23	25	34

Table 4

Frequency of Student Use of Utterance Types Across All Data Collection Sessions

Student Utterances	Week 3	Week 4	Week 6	Week 8
S-CE	59	20	5	10
S-IP	8	8	16	0
S-IC	59	39	62	33
S-VT	27	18	39	34
S-AQ	20	60	8	17
S-F	8	8	23	7
S-IL	13	20	29	26

Note. Abbreviated codes are as follows: Instructor Facilitation (I-F), Instructor Assessing Student Responses (I-A), Instructor Teaching/Lecturing (I-T), Instructor Sharing Clinical Experiences (I-CE), Instructor Adopting Imagined Parent Role (I-IP), Instructor Adopting Imagined Clinician Role (I-IC), Instructor Voicing Text (I-VT), Instructor Using Inclusive Language (I-IL), Student Sharing Clinical Experiences (S-CE), Student Adopting Imagined Parent Role (S-IP), Student Adopting Imagined Clinician Role (S-IC), Student Voicing Text (S-VT), Student Answering Questions (S-AQ), Student Facilitation (S-F), Students Using Inclusive Language (S-IL)

Theme 1: Classroom Structure. The classroom structure was identified as a primary theme that impacted how students connected theory to practice. Two subthemes that emerged from the data included physical space and class format.

Subtheme 1: Physical Space. The physical classroom space impacted how the course content was delivered and how students were engaged. The physical classroom space was arranged in rows of long tables in which students faced forward with primary focus on the instructor. Arrangement of the room and occupancy limits did not easily allow for an alternate arrangement. During each class session, the instructor stood in the front of the room with occasional movement across the front of the room away from the podium. Although the physical space constrained significant movement, students had the space to turn and face their peers during discussions. When students worked in occasional small groups, some groups moved to the hallway or nearby empty classrooms to allow students to form a face-to-face group to engage in uninterrupted discussion.

Subtheme 2: Class Format. The class structure had a direct impact on the instructor and student interactions during class discussions. The instructor served as the director of the class routine. First, she introduced the topic and encouraged students to share firsthand experiences with clients with that disorder. Then, she reviewed assigned written case studies or presented video case studies. Both formats served as a mechanism to engage students in active learning about hypothetical clients with communication disorders secondary to complex disorders.

Instructor Interactions. Sue, the instructor often did much of the talking across all class sessions. Early in the semester, the instructor relied heavily on lecture (I-T) as a teaching method (n=66, 81, 57, 51). She also facilitated discussion using a combination of closed-ended (e.g., "How many children do they have?") and open-ended questions (I-F) (n=106, 127, 73, 72) (e.g., "Why else?", "What are your takeaways?"), and frequently assessed student responses (I-A) (n= 99, 98, 65, 39) (e.g., "Yup", "Good").

As the semester progressed, the instructor changed the type of questions she used during class discussion. Although she still incorporated a lecture style, she reduced the use of lecturing/teaching, closed-ended questions, and assessing student responses. Rather than relying on an Initiation (I), Response (R), Evaluation (E), or Feedback (F) format (Greeno & Engeström, 2014), she began to use questions to elicit additional information and provide students the space to practice thinking through multiple factors of complex cases. As an example, to scaffold the thinking process, in a dialogue about causes of speech and language delays and genetics, the instructor posed direct questions such as, "What are other risk factors? Besides genetics for speech and language disorders, just so we can put them all out there and we think broadly." One student, Sophie, responded, "The environment." To elicit additional information, Sue, the instructor, prompted with, "What kinds of things in the environment?" and Sophie added, "Like socioeconomic status." Sue continued with, "If you are poor, you may not have ___. What are the implications? You may not have ___?" Another student responded with, "Resources." Sue extended the dialogue with, "Resources, good nutrition, access to toys. So, environmental issues in the home. What else?"

As the instructor moved from directing the class toward facilitating, the class format also shifted. For example, during week six, the instructor purposefully instructed students to facilitate

discussion by asking peers questions but then interjected to clarify the question during the case study analyses. When discussing prescriptions for services for a client with autism, Alice posed,

> The two questions that we had as a group was what barriers do you think that the average parent with a child with autism would have to the suggestion of 25 hours a week minimum intervention…and what would be realistic to help them overcome their barriers perceived or real?

Sue continued to scaffold the discussion by clarifying the question with,

> Great. OK. So, let's deal with the first one because that's a real issue. So, 25 hours, so that speaks to what we talked about as one of the recommendations for practice intensity. So, what do you see as a barrier or barriers? What are the challenges that parents face in implementing that?

At the beginning of the semester, the instructor often assessed student responses using an IRE sequence (Greeno & Engeström, 2014). Whether purposefully or inadvertently, she often confirmed the accuracy of factual information with "yes" or "that's right" but also indirectly corrected them, "I've never seen anybody with ___." or "Be careful." As the semester evolved, the instructor's assessment of student responses was in the form of agreement about how the students were thinking through cases. For instance, when Violet offered suggestions of how to teach parents strategies, Sue agreed with, "I like that too" or "I like that. Yeah."

The instructor frequently tapped into her personal expertise as a clinician (I-CE) (n=10, 5, 32, 14), researcher, and parent of a child with complex needs as she guided the students to analyze the background information, consider a myriad of complex factors, and finally to make recommendations for clinical care. This occurred significantly more during week six when the instructor presented cases to which she had a personal connection. When discussing what students observed in a video case study, the instructor modeled how the theory connected to her own practice by sharing,

> So, what I've seen in my own experience, is that as they [clients with Rett Syndrome] get older, often, they will become even better candidates for augmentative communication 'cuz they seem to have more control of their head movements, their eye gaze, they are more receptive, there's less crying, yelling, screaming, periods of discomfort seem to go away and you see that they might become more communicative.

Student Interactions. The class format and classroom space had an influence on the students' responses. First, not all students participated in instructor-student discussions. Those students who did not openly participate were seated throughout the class but primarily in the back of the room, yet actively listened to the classroom discourse. Students who participated in classroom interactions often turned to address their peers but much of the discussion also occurred facing the instructor. Participating students initially relied heavily on their past firsthand experiences (S-CE) (n=59, 20, 5, 10) from clinical experiences to relate to course topics. For example, Janine shared her past experiences with clients who have a hearing loss,

> The elementary school I was at last semester, I would work with the classroom. They were ages from kindergarten to third grade in that room but it was a total communication program so it had an interpreter, and the interpreter would come to speech. We would work on different things depending on the child and you would see some of that language stuff they missed out on. Like the one little boy didn't get cochlears until later in life. So, we

> would do things like vocab but then also we were working on things like sounds, and then with the older kids, they would do things like phoneme manipulation to see if they were hearing everything. It was interesting.

As the semester progressed, students began to move away from relying on past personal experiences. During this shift, they began to integrate prior knowledge and apply it to complex case studies that were representative of cases they may encounter in future clinical practice. As an example, when discussing assessment and intervention with clients who are diagnosed with Fragile X Syndrome, students, with the guidance of the instructor, considered several possibilities.

> Isabella: "Language is affected by the environment, so it affects language as a whole."
>
> Sue (the instructor): "So, language is shaped by the environment, yes, language is impacted by the environment."
>
> Isabella: "So, you would want to see what it is like at home before you start treatment."
>
> Alice: "Because there are known behavior and pragmatic deficits that will complicate treatment sometimes and assessment, but you should have a plan in place for correlating them because the language issues are going to be affected by them and then acquiring skills will be impacted."

Students also asked some questions (S-F) (n=5, 6, 16, 5), but the type of questions evolved. Early in the semester, intonation and inflection in the students' responses indicated that they were unsure of their responses. To engage in discussion, students used rising intonation and phrased their statement as a question, waiting for instructor validation that they were "correct." For example, when discussing the roles and responsibilities of speech-language pathologists with clients who are diagnosed with genetically linked disorders, Sue, the instructor, asked, "What are some ways you can apply your knowledge of genetics to your work in a school?" MJ hesitantly responded, "Professional roles and activities, clinical educational services, and preventive advocacy (using a rising inflection)?" Sue prompted the student to provide more information with, "You want to expand on those? So, like examples of some of those?" Then, MJ expanded her comment slightly by adding, "Having knowledge of disorders to make decisions about them and treatment."

As the semester progressed and students gained practice weighing multiple variables about the cases, they demonstrated more confidence. Subsequently, they used questioning intonation and inflection to check accuracy of their responses less often. They also facilitated discussion with each other in student-student discourse rather than relying only on instructor-student discourse. As an example, in an exchange about prescription of services, students shared their views on 25 hours per week of Applied Behavior Analysis (ABA) services for a client with autism. Sue, the instructor, posed, "So 25 hours, that speaks to what we talked about as one of the recommendations for practice intensity. So, what do you see as a barrier or barriers? What are the challenges that parents face in implementing that?" Fred asserted, "Scheduling--so if the parents work and the child isn't old enough to be in a full day program, it's going to be hard for them to find 25 hours a week where they can apply them to therapies." Leonard added, "Maybe another barrier would be financial support or funding for the intervention--25 hours can get pricey." Sue then clarified with,

> Twenty-five hours can be made up of a combination of services, right? So, birth to three is covered by Early Intervention, three to 21 is covered by public schools' funding so the 25

> hours would be part of that, OK? And many preschool programs are at least half time especially if there is this specialized diagnosis and a specialized program, they can be pulled so then now you're looking at like 30 hours per week. So, you're meeting that.

To continue the discussion, Alice then continued engagement with her peers,

> The thing we were wondering is, in a specialized program they were talking about intervention that really focuses on those language and play skills. Depending on the program they are also focusing on many other important aspects so if they were in a full daytime program, 25 hours may not be the language and play skills and the social skills.

When the instructor adopted a facilitative strategy, students' questions evolved into rhetorical questions, or asking the instructor or other students their opinions. Continuing the discussion about service prescriptions for clients with autism, Howard stated, "I feel like it's great to say that 25 hours works, but I feel like every kid, especially with autism, is so different that it's almost impossible to determine a set amount for them." Alice offered her thoughts with, "What goal are you trying to achieve that 25 hours will get you to? 'Cuz, every parent has a different goal for what their child should be doing."

Theme 2: Use of Multiple Roles. Over the course of the semester, the instructor and students engaged in interchanges about complex clinical case studies. As these exchanges evolved, all participants assumed multiple roles, which was identified as the second primary theme that impacted how students connected theory to practice. Three subthemes that emerged from the data included shared roles, instructor-only roles, and student-only roles.

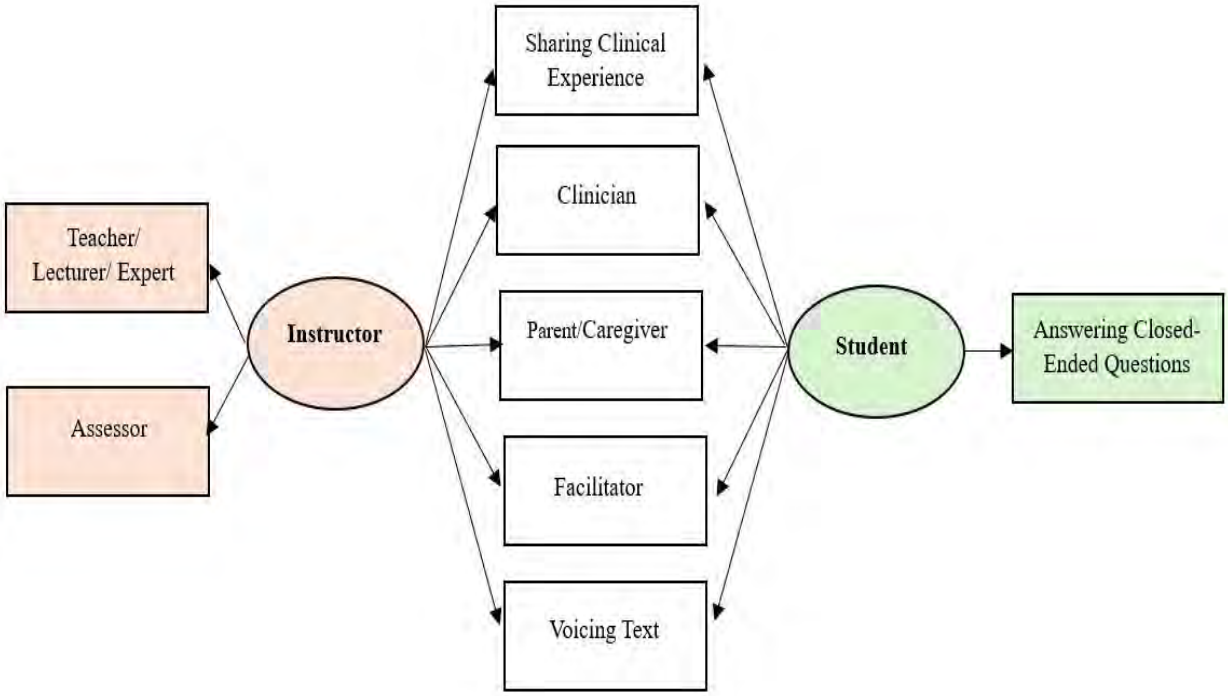
Figure 5 illustrates the roles filled by specific participants. First, all participants' roles shifted and moved between most roles throughout each session and across the semester. All participants shared past clinical experiences, adopted the imagined clinician and caregiver roles (imagined how clinicians or caregivers may respond), facilitated discussion, and voiced text (reported specific details presented in written and video case studies without furthering the discussion or rephrasing in their own words). Many participants also relied heavily on prior family experiences both within each session and across the semester. Instructor-only roles included teacher/lecturer/expert and assessor (assessing student responses). The student-specific role was identified as answering closed-ended questions.

All participants shared past clinical experiences, adopted the clinician, parent/caregiver, and facilitator roles, in addition to reporting specific details presented in written and video case studies without furthering the discussion or rephrasing in their own words (voicing text)**.** Many participants relied heavily on prior family experiences both within each session and across the semester. Additionally, all participants' roles shifted and moved between multiple roles throughout each session and across the semester.

Sharing Clinical Experience. The instructor (Sue) often engaged in lengthy utterances while voicing multiple roles. She moved between teaching and facilitating to sharing clinical experience, thinking like a clinician, or sharing parent perspectives, often within the same utterance.

Figure 5

Individual and Shared Participant Roles During Case Study Analyses



First, the instructor regularly related her own experiences as a clinician to the case studies (e.g., "When I had a private practice my model was always to have the families in the room with me.") Next, she also modeled the thinking process in which clinicians might engage when considering how to assess clients with limited communication skills by asking,

> Does the individual do that, and really the question is, how do they do that? How do they request not essentially saying do they request or not. Tell me how she gets what she wants. Tell me how she greets you when you come into the room.

Lastly, Sue used her position as a parent of a child with complex special needs to provide real-life examples to illustrate the pushback parents sometimes receive and how parents may need to advocate for their child to ensure they receive the services they need. When discussing autism and Rett Syndrome, Sue described the initial interaction with the school district's Child Study Team. She met with the Child Study Team prior to her daughter's transition to the district's preschool program to explain the complexity of her daughter's needs. She recalled,

> When my daughter was identified and went into preschool, she had already been getting services in early intervention. She was coming into the school for her preschool. The head of special services for my district came to my IEP meeting because they [the Child Study Team] were scared because I had said when they came to my house to do their intake when she was turning three, the social worker came to my house, and I said, 'she's really involved. She needs a full day program.'

As Sue continued, she modeled how to manage challenging situations and the students were able to consider how the dialogue between parents and interdisciplinary teams, which may include speech-language pathologists, may evolve. She described the pushback she received from the social worker and how she negotiated services for her daughter.

> Social Worker: "I see how that could be convenient for you since you are working."
> Sue: "I was like, 'OH' (class laughs) that was the wrong thing to say. So, then I start going, 'She needs this many hours…bup, bup, bup, bup.'
> Social Worker: "Mrs. XX, what do you do for a living?" (class laughs)

Sue continued,

> So, my daughter's first school meeting they had the superintendent there. So, they were ready to do battle before we walked in the door. Great ending to the story--they put together--she was the first child in her district to have a full day preschool because she needed a full day, and they didn't have one. So, I had a very wonderful psychologist on the team, and he said, 'Let's test this half day program for 60 days. We will meet again in October.' I said, 'OK fine.' We tested it for 60 days and he said, 'you're right.'

Sue's personal stories as a clinician and parent provided an opportunity for students to also share experiences to connect theoretical knowledge to real-life clinical practice. Initially, students relied heavily on past experiences. For example, when discussing personal clinical experiences with clients who stutter, Ariel stated:

> I just had a kid. He got evaluated at another facility, only for half hour and apparently, he had no or very minimal disfluencies, so they didn't qualify him for services. But then I went into is classroom today and oh my gosh, this kid was stuttering with every sentence he said. He couldn't get a word out. So, he did so well in that one time that somebody else saw him so that report said he was fine.

As the semester went on and they gained practice using the imagined roles, students relied less on past personal experiences and shifted their focus to apply theoretical knowledge to potential future cases. As an example, Marie stated, "I think if you increase the wait time" as a strategy for one client in a video case study.

Imagined Clinician and Parent/Caregiver Roles. Throughout each class session, the instructor frequently moved between various roles within the same utterance. For instance, in discussing genetically linked disorders, the instructor moved from teacher/instructor to facilitator as she stated,

> The phenotype here is just really speech skills but there's this big question. There's this history of a speech and language delay and learning disability. So, you've got the genotype which is the translocation 7,13 and the phenotype is speech skills (I-T). So, what are the questions you ask here? (I-F)

In another discussion about counseling [advising and supporting parents] in communication disorders, Sue moved between the teacher/lecturer and clinician several times. She contrasted counseling in communication disorders vs. providing clinical services by offering, "Because counseling is so much more complex. It's not intervention, it's not 'here's the therapy (I-T), here's how you practice, here are the vocabulary words, here are the strategies you do to help your person be more'." (I-IC) She later continued with,

> So instead of you driving the therapy, you sit back and have them drive the therapy and you say to them (I-T), what would your goal be, what would you like to see (I-C)? So, you start with the family and what their goals and dreams are (I-T).

The students followed the instructor's lead and adopted various roles. As the instructor relied less on lecturing, teaching, and assessing, the students' adoption of the clinician and parent/caregiver roles increased, which allowed students the space to practice thinking like a clinician or caregivers in the classroom. Initially, their suggestions about the complex cases were fairly straightforward. When discussing signs a child has otitis media, Sheldon suggested, "Maybe they're constantly touching their ears (I-IC)." As they moved through the semester, students began to move between imagined roles and contribute a rationale for their thinking. For instance, Sophie weighed prescriptions for frequency of services when discussing services for a child with autism. She moved between imagined clinician and parent roles as she suggested,

> Um, I think it should go into the whole diagnosing of therapies [proposing therapy schedules] because that's [25 hours per week] a big number and I think that's going to scare parents a lot. So, we can actually, maybe if they actually knew, (S-IC) OK, it's working this 25 hours is really working (S-IP) then they'd be more for it (S-IC).

Further, as students worked through the cases, they realized that complex cases often require weighing alternatives based on multiple variables. Alice shared her thought process as she weighed multiple factors about Fragile X Syndrome with, "But at the same time it could also be anything. I mean, she was pregnant, she has depression and anxiety, but because we're looking for Fragile X. I'm, oh look, they've got it too (S-IC)."

Facilitator Roles. In her role as a facilitator, Sue used both closed-ended and open-ended questions. For example, early in the semester, she used an IRE format by asking closed ended questions to guide students while reviewing a genetic pedigree with the students.

Sue:	"Who's this?"
Class:	"Mom"
Sue:	"And how's her hearing?"
Class:	"Good"
Sue:	"And is she a carrier?"
Class:	"No"
Sue:	"Right? So, she's got two capital H's so that means unmutated, unmutated. She's good. OK, Dad. Tell me about dad."
Class:	"Mutation"
Sue:	"Has the mutation and he's a carrier. How's his hearing? Is it impaired or normal?"
Class:	"Normal"

Additionally, the instructor routinely prompted the students with open-ended questions to move the conversation forward. For example, she prompted students to elaborate on their responses with open ended questions such as "Why else?", "What do you mean by that?", and "What are your big takeaways?"

The students gradually adopted the role of facilitator. As the semester evolved, the students began to pose questions to the instructor and peers to further the discussion about case studies. When discussing a parent's concern about her child's hearing loss, Adeline asked her peers,

> Wouldn't it be appropriate to give them reassurance (S-F)? Like, we're gonna work together and we're going to establish an intervention plan and go through trial and error to see what we can do to help her, to let her know that there's a possibility that we can start to execute something and work to intervene.

In a discussion about stuttering, Ariel contributed by posing a question for consideration, "Don't you think it's [stuttering] kind of hard to assess too? You would think it would be kinda easy. I mean, as subjective as it is, you would hear it, and you would know what to look for (S-F)." When discussing treatment options for a client diagnosed with Fragile X syndrome, Sheldon asked, "I have a question on the next page. For the next point on the history of family learning disabilities, could that also be contraindicated in Fragile X, a learning disability that isn't necessarily caused by Fragile X (S-F)?"

Voicing Text. All participants identified and reported specific details about written and video case studies without furthering the discussion or rephrasing in their own words (voicing text). Students, however, adopted this role more often than the instructor. For example, during a video case about a client with Down Syndrome, the instructor reported about the interactions between the client and clinician. She stated, "It was emotion and none of that was coached. Her holding off and pretending the doll was crying. None of that was coached. None of that was pre-planned. It just evolved."

Discussing a case about genetically linked communication disorders, Marie offered, "The mom was more expressive than her daughter and they were both, like lower." Similarly, Sunshine reported about a written case before shifting to adopt an imagined clinician role, "I don't know where it is exactly… something about them spending extra effort to understand (S-VT) and that limits their ability to like, so, if 'I'm spending so much effort to understand and get what you're saying I'm not understanding the questions (S-IC)'."

Subtheme 2: Instructor-Only Roles. Roles specifically filled by the instructor included teacher/lecturer/expert and assessor (assessing student responses).

Instructor as Teacher/Lecturer/Expert. The instructor routinely spoke in long utterances that included theoretical information as it related to the case studies. As an example, when discussing developmental speech and language delays and disorders, the instructor stated, "You see that we still don't really know what causes most of the disorders like they say a certain percentage of specific language impairment is likely genetic, but this is all new information in the last few years (I-T)." Similarly, when reviewing a case study about hearing loss, the instructor provided practical information that clinicians need to consider. Sue stated,

> So, if you see a constellation of symptoms that lead you to a direction of a disorder that has a hearing loss as a potential characteristic then you are really going to dig in and look for hearing loss. So, a lot of times the hearing loss is undetected.

Besides providing course content, the instructor impressed the importance of research and its implications on clinical practice. When discussing her own research, Sue noted that oftentimes sample sizes may be rather small. She stated,

> I'm part of a group right now that is trying to develop guidelines for communication in Rett Syndrome and we are funded by the International Rett Syndrome Foundation. It's a really cool project. There are five of us and we are from five different countries all over the world. So, what we did is this huge literature search, so like this systematic review. The evidence, and we have hundreds of articles, and everything is, so the level is just poor.

Later, Sue continued, "We see the same thing with autism. Very low subject numbers. So then extrapolating this and applying it to a population is almost impossible but we can come away with some big takeaways."

Instructor as Assessor. As the teacher/lecturer, the instructor initially assessed student comments (I-A) using an IRE format regularly to indicate accuracy of their responses (e.g., "yes," "right"). Assessment of student responses with the IRE format, however, decreased as the semester progressed. Beyond assessing accurate vs. inaccurate responses, the instructor also used assessment of student comments as a mechanism to guide their thinking as they worked through case studies. For example, in this interchange about a video case study, Sue assessed Howard's understanding of an excerpt of a video case study in which a nonverbal client is being fed:

Howard:	"I don't know exactly, but it looked like when she swallowed when she was done eating, she would put her hand by her mouth."
Sue:	"She did put her hand by her mouth (I-A)."
Howard:	"Like, every time and the caregiver would just take her hand away."
Sue:	"The caregiver held her hand, right? So, she put her hand by her mouth. That's your data, right (I-A)? She put her hand by her mouth."
Howard:	I would say maybe that's her indicating that she's ready for more, that she wants more."
Sue:	"So you have your question is, what could she be indicating? Could that be a request? That's a question, right? You don't know yet. But it could be (I-A)."

Subtheme 3: Student-Only Roles. In their usual student roles, class members answered closed-ended questions (S-AQ) (n=20, 60, 8, 17) and reported details about a case study or video without furthering the discussion or rephrasing in their own words, which we refer to as voicing text (S-VT) (n=27, 18, 39, 34).

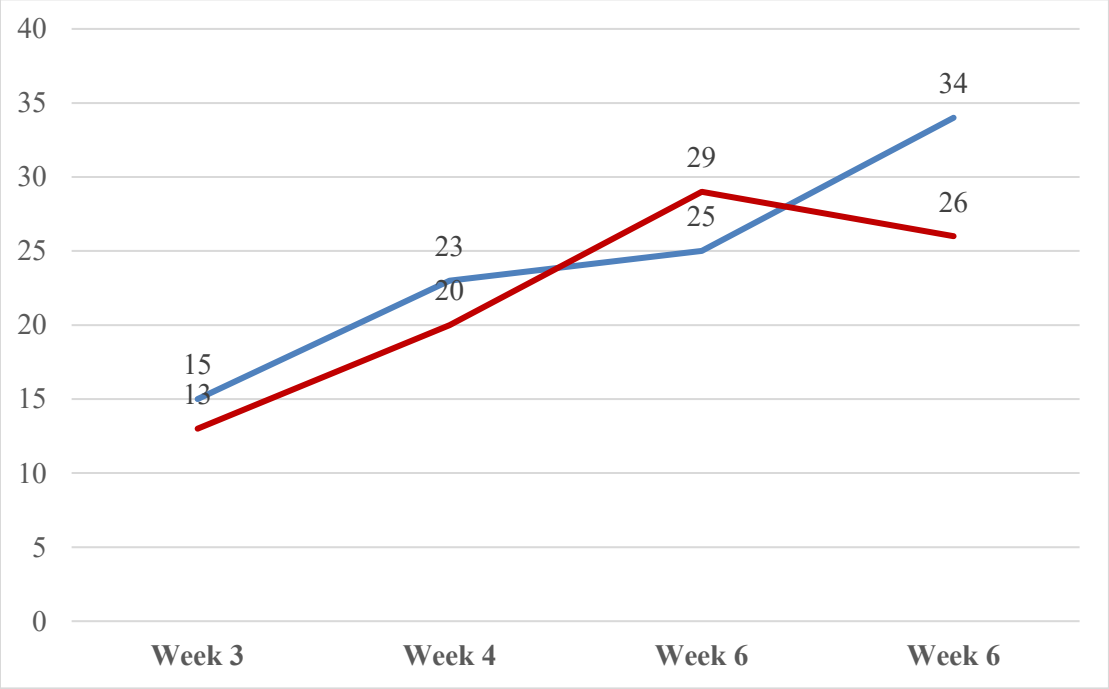
Students Answering Closed-Ended Questions. Earlier in the semester, when the instructor utilized lectures more frequently, she often asked closed-ended questions. In response, students answered closed-ended questions with recall of previously learned information but did not readily apply it to the case studies. For instance, in a discussion about Prader Willi Syndrome, the instructor asked, "Who knows about Prader-Willi profile? What did you learn that we can fill in?" Marie replied, "They usually are overweight to the point where some develop diabetes later on because they can't control their appetite." In a later exchange, the instructor asked, "What else can hurt the mother? Or hurt the baby during pregnancy?" to which Isabella responded, "Smoking?" Students still answered questions with recall of facts later in the semester, but often, it was as a group in the context of thinking through factors in a case study. For example, while discussing

Down Syndrome, Sue, the instructor, asked, "We've talked about this earlier, so a lot of them [children with Down Syndrome] are at increased risk for what kind of hearing loss?" As a group, the students responded with, "conductive" and then the instructor explained the physical characteristics of children with Down Syndrome that make them predisposed to conductive hearing loss due to otitis media.

Theme 3: Use of Equitable and Inclusive Language. Principal of Ethics I of the American Speech Language and Hearing Association (ASHA) Code of Ethics states that clinicians must focus on the welfare of the individuals they serve and "shall not discriminate in the delivery of professional services" (ASHA, 2023, p. 3). Therefore, equity and inclusiveness are important underpinnings of clinical practice in communication disorders. Figure 6 illustrates the increasing frequency of equitable and inclusive language used by all participants while adopting imagined clinician and caregiver roles across the semester.

Figure 6

Frequency of Participants' Equitable and Inclusive Statements Over Time



Instructor Use. There was no specific section of the semester devoted specifically to teaching students how to think about and apply equity and inclusivity to clinical practice. Instead, it was woven throughout the course. Instructor use of inclusive language (I-IL) gradually increased as the instructor and students analyzed multiple case studies throughout the semester (n=15, 23, 25, 34).

First, when discussing clinical cases, the instructor overtly reminded students of the importance of recognizing and demonstrating sensitivity toward client and/or family needs to avoid jumping to conclusions or making judgments about clients and families. Sue reminded the students, "You know I keep saying meet them where they are and without judgment. Until you've walked a mile in their moccasins, or their shoes, or whatever." In another exchange, the instructor reminded students,

> It can be easy to judge families and to say how come they're not doing their homework, and I can't believe they didn't respond to my___. They never write in the communication book. Well maybe the best the mom can do is just get that kid on the bus. They have clothes that are clean and with lunch. Maybe that's it. That's all they can do. You know I keep saying meet them where they are and without judgment.

When discussing how counseling to provide information about the communication disorder and provide support falls within the scope of speech language pathologists, the instructor shared,

> Often, what we're challenged to do is meet them where they are and then get these signals from them about what they need from us. She continued to explain that often clinicians try to go in there with cures. Try this, try that.

To further demonstrate the importance of supporting families with inclusivity, the instructor continued, "Often what they're looking for from us is support as they go through the process and acknowledgement of their choices, of their decisions, that we are supporting them on this journey, and that we're here for them."

There were other instances throughout the semester when the instructor's modeling of inclusive, patient- and family-centered language was more subtle. For example, when discussing interactions with parents who have a child with a newly diagnosed disability, the instructor stated, "The parent goes through a grief process of mourning, and the folks that we work with, this is a repeated process at every milestone that is not met." In another exchange about a parent who faced many challenges, the instructor further emphasized the importance of patience and empathy stating, "You know, you have to meet people where they are. You can't pull them toward you. That's often a prescription for disaster. So much of our, so much of our work is about relationships."

Student Use. The instructor also modeled and guided students to practice patient- and family-centered care to "think inclusively." In response, the students shifted their assumptions and began to adapt their thinking about their therapeutic approach to meet client and family needs. To illustrate, Alice described an interaction with a parent. Initially, she made assumptions about the parent that lacked empathy about the parent's struggles. In response, the instructor identified some of the potential challenges the parent faced and modeled empathy in recognizing those challenges. As the exchange continued, the student later imitated empathy for the parent's situation:

> Alice: "She's a gang member and the kids have been taken away from her off and on in the earlier years, and she had rough socio-economic issues as well as learning disabilities. She didn't believe any of the kids had anything. She thought doctors just gave them a diagnosis because they were black. She also would only allow us to refer to her in her gang name."
>
> Sue: "Complex family."
>
> Alice: "Yeah."

Sue: "So lots of challenges."
Alice: "She wasn't supportive of whatever was done in school. She didn't care once they got on the bus. There was no support, no carryover at home."
Sue: "Maybe she wasn't able."
Alice- "She may not have been able."
Sue: "So, challenging socioeconomic, educational, and you wonder about their options as they get older--vocational, independent living--plus you also wonder about access to services."

The students responded to the instructor's reminders and models. As the semester progressed, they spontaneously responded with statements that reflected an effort to provide individualized care which included patient-centered, and inclusive language (S-IL) (n=13, 20, 29, 26) increasingly more often. For example, when discussing future considerations about a client in a video case study, Alice suggested,

> We would also want to make sure that, for the daughter, she understands that this is a genetic disorder that you have so if she is going to college, get her a 504 plan. Let her understand what resources she has so that she is set up to succeed as opposed to fail.

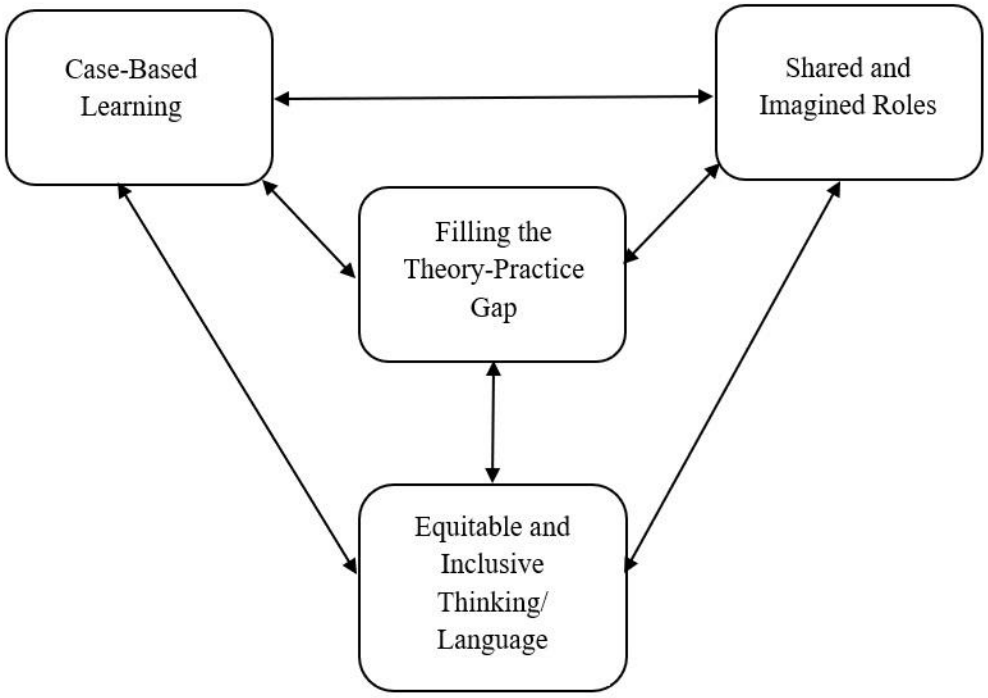
Finally, the instructor questioned the students about their definition of "competence" vs "unimpaired." Sue posed, "Do you think competence means unimpaired? What does it mean? What does it refer to?" After a brief pause, Marie responded, "I think it means that people just assume that they are disabled or can't do that." To clarify, Sue added, "So it would be more of an attitude of possibility that there is a level of competence that we don't know yet where the ceiling is which we'll approach it from a viewpoint of possibilities." Howard then added, "At my placement now, we always just say assume that they can do it until they prove us wrong kind of thing. So, like we just assume that they can do it. If they try it and they can't then we modify it, but we don't assume that they can't do it."

Discussion

The purpose of this grounded theory study was to investigate how an instructor's use of CBL can help fill the theory-practice gap in an equitable, inclusive way (Raurell-Torredà et al., 2015; Yoo & Park, 2015). Our findings highlight how incorporating CBL into CSD classrooms accomplishes several goals. First, it provides one strategy that allows instructors to structure instruction in a way that encourages development of students' cognitive apprenticeship (Brown et al., 1989) within the safety and space of the classroom. Second, it gives students experience adopting imagined roles to practice thinking how others in the therapeutic process (clinician and caregivers) face challenges and may respond, which can then be applied to future clinical practice. Lastly, it gives students practice in developing and using patient- and family-centered inclusive language while thinking through complex clinical cases. As represented in Figure 7, we propose that utilizing this three-fold approach, was an effective way to help fill the theory practice gap in an equitable and inclusive way.

Figure 7

Proposed Three-Fold Approach to Fill the Theory Practice Gap in Communication Disorders Classrooms Equitably and Inclusively



Interactional Structures in the Communication Sciences and Disorders Classroom. The first research question addressed what interactional structures were evident in the CSD classroom. There is longstanding evidence about the ineffectiveness of lecture-based teaching (Collins & Kapur, 2014; Sternberg, 2003). Sternberg (2003) asserts that using lecture-based instruction may result in students gaining content knowledge but not necessarily the ability to apply that knowledge to real-world complex problems. On the other hand, Crichton (2013) asserts that social interactions between instructors and students are influential on the learning opportunities. In our study, the physical layout and space of the classroom offered limited options to rearrange furniture which encouraged a lecture-based learning environment and discouraged active learning. The participants, however, worked against this deterrent by turning and facing each other to engage with each other during classroom discussions.

Lecture-based learning is an instructor-focused teaching strategy that encourages the use of Initiation, Response, Evaluation/Feedback (IRE) sequences (Green & Engeström, 2014) in which the instructor poses a question, the student responses, followed by either an evaluation of the response or feedback. Using this type of questioning format during instruction often results in recall of facts and lack of new knowledge construction, resulting in passive student learning (Greeno & Engeström, 2014). Open-ended questions, however, allow students to construct new knowledge through guided participation during which both the instructor and student are active participants in the learning process (Mascolo, 2009; Vespone, 2023). Vespone (2023) asserted that

co-constructed learning "requires a rebalance of power and restructure of classroom goals" that move away from rigid agendas and toward student-directed learning (p. 21). In our study, the instructor often functioned as the director. She structured the class and often did much of the talking across all class sessions, but the students' thinking still evolved as evidenced by the types of responses she elicited from them. In the beginning of the semester, she relied heavily on the IRE format described by Greeno and Engeström (2014). As the semester progressed, however, the class structure shifted. Instead of using questions to assess accuracy of student responses, the instructor used questions to elicit additional information and allow students' thinking to develop as they worked through complex clinical cases. She also modeled her own thinking to scaffold learning and co-construct new knowledge with the students. Even though the instructor continued to "direct" the class, she still provided continued practice in thinking through multiple factors of complex cases. The instructor's continued presence and direction were beneficial when students overlooked contributing factors pertinent to providing patient-centered and family-centered care.

Student Encouragement to Connect Theory to Practice and Classroom Structure Impact on Knowledge Construction. The second research question focused on how the classroom structures encouraged the students to connect theory to practice and the third research question focused on how the classroom structure impacted knowledge construction. Brown and colleagues (1989) described cognitive apprenticeship, learning to think like a clinician, as a process that situates learning in doing. Similarly, Mascolo (2009) argues that "individuals *construct* their understanding of the world as a product of their *actions* on the world" (p. 4, emphasis in original). CBL is a pedagogical approach that emphasizes connecting theory to practice clinical cases (Chabon et al., 2025; Williams, 2005). In this study, the instructor purposefully incorporated case studies to give students practice in thinking through complex cases like those they may encounter in future clinical practice. During analyses of case studies, all participants co-constructed knowledge in several ways. First, Jonassen and Hernandez-Serrano (2002) argue that past experiences can be useful in solving unfamiliar problems when there is a "perceived relevance" (p.74). As they worked through case studies, all participants (instructor and students) shared past clinical experiences to connect complex cases to their current knowledge base. As they gained experience thinking through complex cases, the students' confidence also increased. Subsequently, the students decreased reliance on past experience and began to propose recommendations for future clinical care.

Next, beyond connecting past experiences to the case studies, all participants adopted the imagined role of the clinician or caregivers. Using these shared imagined roles allowed the instructor and students to co-construct learning (Vespone, 2023) to connect theory to practice during case studies. Moving between roles allowed students the space and opportunities to develop cognitive apprenticeship (Brown et al., 1989) by thinking through complex cases using the clinician or parent/caregiver role to test potential clinical recommendations under the guidance of the instructor within the safety of the classroom.

Third, the instructor and students also shared the role of furthering discussions by asking questions. Convergent, or closed-ended questions, elicit specific responses or factual information while divergent, open-ended questions encourage a variety of responses that encourage further discussions (McComas & Abraham, 2004). Initially, the instructor utilized closed-ended questions within an IRE format to elicit student responses. As the semester progressed, her questions shifted. She used some closed-ended questions to guide student thinking but also incorporated open-ended

questions to facilitate discussion. As students gained experience in thinking through case studies, they began to construct new knowledge and learn how to solve novel problems, to then offer recommendations for potential future care (Jonassen & Hernandez-Serrano, 2002; Mascolo, 2009; Vespone, 2023). Students also asked questions for several purposes. Initially, they asked questions to check the accuracy of responses. As the semester evolved, they shared alternative thoughts and asked questions to extend discussions with the instructor and fellow peers.

In our study, several roles that were unique to certain participants were also identified. First, the instructor filled the role of teacher/expert. Despite incorporating CBL as an active learning strategy to engage students and facilitate discussion, the instructor still utilized periods of instructor-focused lectures to present course content and theory. Second, when the instructor utilized the role of assessor, students fulfilled their traditional role by answering the instructor's closed-ended questions to check accuracy of their response rather than extending the discussion or offering new ideas. As the instructor shifted to the role of facilitator and increased her use of open-ended questions, the students' recall of factual information decreased. They also gave rationales for their recommendations as they began to link their prior knowledge to potential future clinical cases. The last research question asked how the concepts of equity and inclusion were embedded in the class structures. The ASHA Code of Ethics (2023) requires all practitioners to uphold the welfare of others without discrimination. To support this practice, graduate programs are tasked with teaching students to think inclusively (ASHA, 2020, 2023; CFCC, 2018). Historically, inclusive practices have been included in disabilities studies (Akakpo et al., 2020; Kennedy et al.; 2018; Levey, 2023; Nussbaum & Steinborn, 2019). Inclusive practices are also an underpinning of accredited graduate programs (ASHA, 2020, 2023; Council on Academic Accreditation in Audiology and Speech - Language Pathology [CAA], 2023) and extended more broadly to clinical practice in communication disorders (Roth & Worthington, 2021).

Embedding Equity and Inclusion in Classroom Structure. In our study, the concepts of patient-centered and family-centered care as fundamental to equity and inclusion were woven throughout the course. CBL provides a mechanism for students to develop patient-centered and family-centered practices and supports individuals from all backgrounds when clinicians understand and value all groups that differ from their own. Ultimately, when clinicians recognize and work to reduce their own biases, it benefits individuals from all backgrounds. Recognizing that learning to adopt patient- and family centered thinking is a process, the instructor infused it throughout class discussions. While analyzing variables in the case studies, the instructor encouraged students to use patient- and family-centered, equitable, and inclusive language while adopting the imagined roles of clinician and caregivers. Specifically, the instructor provided frequent reminders and models to guide students to use inclusive language when discussing past clinical experiences or considering future cases. Students initially made some unintended statements that included judgments or lacked sensitivity toward caregiver needs. As students practiced thinking through complex cases, the instructor increasingly used several strategies to increase students' awareness and use of inclusive language. First, she overtly reminded students not to judge but to consider factors that may impact caregivers' actions or responses. Next, she modeled inclusive statements. Last, she guided the students' thinking by pointing out pertinent factors that students may have overlooked. In response, students increasingly used inclusive, patient and family-centered statements while they responded using the imagined clinician and/or caregiver roles.

Strengths and Limitations. This study had several strengths. First, using an inductive approach in this grounded theory design, allowed the proposed theory which explains a process to emerge directly from the data over time (Billups, 2021; Charmaz & Thornberg, 2021; Creswell & Creswell, 2023). The emergent theory resulted from a recursive process of returning to the data, refining categories, and memoing (Billups, 2021; Creswell & Poth, 2018) to describe how graduate CSD students filled the theory practice gap using CBL in an equitable and inclusive way. Next, prolonged time in the field and detailed field notes (Creswell & Creswell, 2023; Creswell & Poth, 2018) allowed one researcher as a non-participatory observer to develop thick descriptions (Geertz, 1973). Third, high-quality digital recordings were used that were transcribed verbatim, including pauses, revisions, and overlaps. Repeated listening (Bailey, 2008) ensured accuracy of transcriptions. Lastly, transcriptions of audio recordings, which provided a representative sample of the typical class structure, were triangulated using detailed field notes, allowing an in-depth understanding about the environment and classroom interactions between participants (instructor and students) over the course of a semester.

This study had several limitations. First, this study was limited to one graduate CSD class at one university. The findings in this study, therefore, may not be representative of instructional strategies adopted by all instructors in all graduate CSD courses. Second, this study utilized 12 hours of audio recordings across an entire semester. These recordings and subsequent verbatim transcripts represented roughly one third of the entire course, which may not be representative of the class structure, instructional strategies, and ultimately the social interactions that occurred across the entire semester or in future iterations of the course. Lastly, researcher bias in qualitative research must be considered through reflexivity (Charmaz & Thornberg, 2021; Creswell & Creswell, 2023; Rossman & Rallis, 2017). In our case, the first author attended each data collection session as a non-participatory observer during which time social interactions were audio recorded. The presence of the researcher and collection of audio recordings may have influenced the frequency and type of responses some participants offered.

Future Research and Conclusions

Results of this study indicate that individualized, inclusive, and equitable care requires practice in adopting patient and/or caregiver roles, practice thinking like a clinician, but are also connected to prior experience. Additionally, it underscores how applying discipline-specific theory to practice is required for students to develop their own knowledge and expertise in a patient- and family-centered, equitable, and inclusive way.

CBL has longstanding support as one active learning strategy to engage students in the decision-making process, especially in medical and nursing literature. Studies that investigate CBL in CSD are emerging but often implement surveys to investigate student perceptions of learning. This type of design provides insight into how students feel about their learning but may not accurately reflect the social interactions that occur in the CSD classroom in real-time. Subsequently, more research to investigate how CBL is used as a teaching strategy in CSD classrooms to fill the theory-practice gap in real-time is warranted.

Thinking through clinical cases requires students to weigh multiple factors, especially in unique and complex cases. To do that, students need to practice this thinking process. This study

investigated how the instructor-student and student-student interactions help fill the theory-practice gap using CBL. Analyzing participant discourse supplemented by rich descriptions about the environment and social interactions in real-time provided a window to the thinking process students went through when connecting theory to practice as they constructed their own new knowledge. How the instructor structures the discussions, therefore, can either allow or limit opportunities for students to practice cognitive apprenticeship, or thinking like a clinician (Brown et al., 1989). Consequently, instructional strategies that allowed for use of imagined roles were effective in engaging students in the recursive process of using theory to inform future clinical practice in a patient- and family-centered, equitable, and inclusive way and vice versa.

CBL provides one option to provide CSD students practice recognizing and addressing patient needs equitably and inclusively. Incorporating opportunities for students to use imagined roles in the classroom were effective in advancing students' clinical thinking as one method to close the theory practice gap in graduate CSD education. Further, adopting these minor pedagogical shifts underscores the benefits of purposefully incorporating CBL as an instructional strategy to advance student thinking without the need to overhaul curriculum.

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References

Akakpo, C. W., Lobianco, A., & Lollar, D. (2020). Inclusion of disability content in graduate public health curricula. American Journal of Public Health, 110(10), 1509–1511. https://doi.org/10.2105/AJPH.2020.305882

American Speech-Language-Hearing Association. (2020). *2020 certification standards in speech-language pathology*. https://www.asha.org/certification/2020-SLP-Certification-Standards

American Speech-Language-Hearing Association (ASHA). (2023). *Code of ethics* [Ethics]. www.asha.org/policy/.

Anderson, L., Krathwohl, R., Airasian, P., Cruikshank, K., Mayer, R., Pintrich, P., Raths, J., & Wittrock, M. (Eds.) (2001). Taxonomy for learning, teaching, and assessing: A revision of Bloom's Taxonomy. Longman.

Artiles, A. J. (2019). Reenvisioning equity research: Disability identification disparities as a case in point. Fourteenth Annual Brown Lecture in Education Research. *Educational Researcher, 48*(6), 325-335. https://doi.org/10.3102/0013189X19871949

Artiles, A. J., Rose, D., González, T., & Bal, A. (2020). Culture and biology in learning disabilities research: Legacies and possible futures. In N. S. Nasir, C. Lee, R. Pea, & M. M. de Royston (Eds.), *Handbook of the Cultural Foundations of Learning*. (pp. 160–177). Routledge. https://doi.org/10.4324/9780203774977-11

Badesha, M., Thayanantha, A., Shune, S., & Namasivayam-MacDonald, A. (2023). Caregiver burden interventions in speech–language pathology: A systematic review. *International Journal of Language & Communication Disorders*, *58*(4), 1335–1356. https://doi.org/10.1111/1460-6984.12856

Bailey, J. (2008). First steps in qualitative data analysis: Transcribing. *Family Practice*, *25*(2), 127–131. https://doi.org/10.1093/fampra/cmn003

Baynton, D. C. (2013). Disability and the justification of inequality in American history. In Leonard J. Davis (Ed.) *The Disability Studies Reader*. Routledge.

Baynton, D. C. (2016). *Defectives in the land: Disability and immigration in the age of eugenics.* University of Chicago Press. https://doi.org/10.7208/chicago/9780226364339.001.0001

Billups, F. D. (2021). *Qualitative data collection tools: Design, development, and applications*. Sage Publications, Inc. https://doi.org/10.4135/9781071878699

Boeije, H. (2010). *Analysis in qualitative research.* Sage.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77-101. https://doi.org/10.1191/1478088706qp063oa

Brown, J. S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher*, *18*(1), 32–42. https://doi.org/10.3102/0013189X018001032

Chabon, S. S., Cohn, E. R., & Lee-Wilkerson, D. (2025). *The Communication Disorders Casebook: Learning by Example* (2nd ed.). Plural Publishing.

Charmaz, K. (2014). *Constructing grounded theory* (2nd ed.). Sage.

Charmaz, K., & Thornberg, R. (2021). The pursuit of quality in grounded theory. *Qualitative Research in Psychology*, *18*(3), 305–327. https://doi.org/10.1080/14780887.2020.1780357

Cole, M., & Packer, M. (2016). Design-Based Intervention Research as the Science of the Doubly Artificial. *The Journal of the Learning Sciences*, *25*(4), 503–530. https://doi.org/10.1080/10508406.2016.1187148

Collins, A., Brown, J.S., and Newman, S.E. (1991). Cognitive apprenticeship: Teaching the craft of reading, writing, and mathematics. In L.B. Resnick (Ed.) *Knowing Learning, and Instruction: Essays in honor of Robert Glaser*. Erlbaum.

Collins, A., & Kapur, M. (2014). Cognitive apprenticeship. In *The Cambridge handbook of the learning sciences* (2nd ed., pp. 109-127). Cambridge University Press.

Council on Academic Accreditation in Audiology and Speech-Language Pathology. (2023). Standards for accreditation of graduate education programs in audiology and speech-language pathology (2017). https://caa.asha.org/siteassets/files/accreditation-standards-for-graduate-programs.pdf

Council for Clinical Certification in Audiology and Speech-Language Pathology of the American Speech-Language-Hearing Association. (2018). *2020 certification standards in speech-language pathology*. American Speech-Language-Hearing Association. http://www.asha.org/certification/2020-SLP-Certification-Standards

Creswell, J. W., & Creswell, J. D. (2023). *Research design: Qualitative, quantitative, and mixed methods approaches* (6th ed.). Sage Publications.

Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry & research design: Choosing among Five Approaches* (4th ed.). Sage Publications.

Crichton, H. (2013). Production and reception formats: An alternative participation framework for analysis of classroom discourse? *British Educational Research Journal*, *39*(1), 166–181. https://doi.org/10.1080/01411926.2011.615387

Deuster, D., am Zehnhoff-Dinnesen, A., Schmidt, C.-M., Matulat, P., Huebner, J. R., Reichmuth, K., Fiori, A., & Knief, A. (2008). Development and evaluation of the new module "communication disorders" in medical education. *Medical Teacher*, *30*(8), e225–e231. https://doi.org/10.1080/01421590802216225

Epstein, B. (2016). Five heads are better than one: Preliminary results of team-based learning in a communication disorders graduate course. *International Journal of Language & Communication Disorders*, *51*(1), 44–60. https://doi.org/10.1111/1460-6984.12184

Fish, D., & Boniface, G. (2012). Reconfiguring professional thinking and conduct: A challenge for occupational therapists in practice. In *Using Occupational Therapy Theory in Practice* (pp. 9–20). John Wiley & Sons, Inc. https://doi.org/10.1002/9781118709634.ch2

Gee, J. P. (2014). *An introduction to discourse analysis: Theory and Method* (4th ed.). Routledge. https://doi.org/10.4324/9781315819679

Geertz, C. (1973). *The interpretation of cultures: Selected essays*. Basic Books.

Greeno, J. G., & Engeström, Y. (2014). Learning in activity. In R. K. Sawyer (Ed.), *The Cambridge handbook of the learning sciences* (2nd ed., pp. 128-147). Cambridge University Press.

Hmelo-Silver, C. E., & Barrows, H. S. (2008). Facilitating collaborative knowledge building. *Cognition and Instruction*, *26*(1), 48–94. https://doi.org/10.1080/07370000701798495

Horner-Johnson, W. (2021). Disability, intersectionality, and inequity: Life at the margins. In D. Lollar, W. Horner-Johnson, & K. Froehlich-Grobe (Eds.) *Public Health Perspectives on disability. (2nd ed., pp. 91-105).* Springer. https://doi.org/10.1007/978-1-0716-0888-3_4

Jonassen, D. H., & Hernandez-Serrano, J. (2002). Case-Based Reasoning and Instructional Design: Using Stories to Support Problem Solving. *Educational Technology Research and Development*, *50*(2), 65–77. https://doi.org/10.1007/BF02504994

Kennedy, J., Missiuna, C., Pollock, N., Wu, S., Yost, J., & Campbell, W. (2018). A scoping review to explore how universal design for learning is described and implemented by rehabilitation health professionals in school settings. *Child: Care, Health & Development, 44*(5), 670–688. https://doi.org/10.1111/cch.12576

Leahy, M. M., McTiernan, K., Smith, M. M., Sloane, P., Walsh, I. P., Walshe, M., & Ni Cholmain, C. (2010). Foundation studies in education for therapy practice: Curriculum updating. *Folia Phoniatrica et Logopaedica*, *62*(5), 255–259. https://doi.org/10.1159/000314789

Lee, C. D., Meltzoff, A. N., & Kuhl, P. K. (2020). The braid of human learning and development: Neuro-physiological processes and participation in cultural practices. In N. S. Nasir, C. Lee, R. Pea, & M. M. de Royston (Eds.), *Handbook of the Cultural Foundations of Learning*. (pp. 24–43). Routledge. https://doi.org/10.4324/9780203774977-3

Levey, S. (2023). Universal Design for Learning. *Journal of Education, 203*(2), 479–487. https://doi.org/10.1177/00220574211031954

Lyons, K., et al. (2017). Cognitive apprenticeship in health sciences education: A qualitative review. *Advances in Health Sciences Education 22*:723-729. https://doi.org/10.1007/s10459-016-9707-4

Maia, D., Andrade, R., Afonso, J., Costa, P., Valente, C., & Espregueira-Mendes, J. (2023). Academic performance and perceptions of undergraduate medical students in case-based learning compared to other teaching strategies: A systematic review with meta-analysis. *Education Sciences*, *13*(3), 238. https://doi.org/10.3390/educsci13030238

Mascolo, M. F. (2009). Beyond student-centered and teacher-centered pedagogy: Teaching and learning as guided participation. *Pedagogy and Human Sciences*, *1*(1), 3–27.

McBride, E. (2022). The development of clinical self-efficacy in speech-language pathology graduate training: A longitudinal study. *American Journal of Speech-Language Pathology*, *31*(2), 770–789. https://doi.org/10.1044/2021_AJSLP-21-00134

McComas, W. F., & Rossier, L. A. (2004). Asking more effective questions. https://uwaterloo.ca/centre-for-teaching-excellence/sites/default/files/uploads/files/asking_better_questions.pdf

Meilijson, S., & Katzenberger, I. (2015). A clinical education program for speech-language pathologists applying reflective practice, evidence-based practice, and case-based learning. *Folia Phoniatrica et Logopaedica 66(4-5)*,158-163. https://doi.org/10.1159/000366275

Michaelsen, L. K., Knight, A. Bauman., & Fink, L. D. (Eds.). (2002). *Team-based learning: A transformative use of small groups in college teaching*. Stylus Pub. https://doi.org/10.5040/9798216023364

Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative data analysis: A methods sourcebook* (3rd ed.). Sage Publications.

Mitra, M., Long-Bellil, L., Moura, I., Miles, A., & Kaye, H. S. (2022). Advancing health equity and reducing health disparities for people with disabilities in the United States. *Health Affairs*, *41*(10), 1379–1386. https://doi.org/10.1377/hlthaff.2022.00499

Miyake, N., & Kirschner, P. A. (2014). The social interactive dimensions of collaborative learning. In K. Sawyer (Ed.), *The Cambridge handbook of learning sciences* (2nd ed., pp. 418–438). Cambridge University Press. https://doi.org/10.1017/CBO9781139519526.026

Morrow, E. L., Turkstra, L. S., & Duff, M. C. (2021). Confidence and training of speech-language pathologists in cognitive-communication disorders: Time to rethink graduate education models? *American Journal of Speech-Language Pathology*, *30*(2S), 986–992. https://doi.org/10.1044/2020_AJSLP-20-00073

Nathan, M. J., & Sawyer, R. K. (2014). Foundations of learning sciences. In K. Sawyer (Ed.), *The Cambridge handbook of learning sciences* (2nd ed., pp. 21–43). Cambridge University Press. https://doi.org/10.1017/CBO9781139519526.004

Nussbaum, E. A., & Steinborn, M. L. (2019). A "visibilizing" project: "Seeing" the ontological erasure of disability in teacher education and social studies curricula. *Journal of Curriculum Theorizing*, *34*(1).

Okoro, C. A., Hollis, N. D., Cyrus, A. C., & Griffin-Blake, S. (2018). Prevalence of disabilities and health care access by disability status and type among adults — United States, 2016. *MMWR Morbidity and Mortality Weekly Report*, *67*(32), 882–887. https://doi.org/10.15585/mmwr.mm6732a3

Penuel, W. R. (2020). Promoting equitable and just learning across settings. In N. S. Nasir, C. Lee, R. Pea, & M. M. de Royston (Eds.), *Handbook of the cultural foundations of learning*. (pp. 348-364). Routledge. https://doi.org/10.4324/9780203774977-24

Powell, K. C., & Kalina, C. J. (2009). Cognitive and social constructivism: Developing tools for an effective classroom. *Education*, *130*(2), 241-250.

Rose, D. H., & Strangman, N. (2007). Universal Design for Learning: Meeting the challenge of individual learning differences through a neurocognitive perspective. *Universal Access in the Information Society*, 5(4), 381–391. https://doi.org/10.1007/s10209-006-0062-8

Roth, F., & Worthington, C. (2021). *Treatment resource manual for speech-language pathology* (6th ed.). Plural Publishing, Inc.

Raurell-Torredà, M., Olivet-Pujol, J., Romero-Collado, À., Malagon-Aguilera, M. C., Patiño-Masó, J., & Baltasar-Bagué, A. (2015). Case-based learning and simulation: Useful tools to enhance nurses' education? Nonrandomized controlled trial. *Journal of Nursing Scholarship, 47*(1), 34-42. https://doi.org/10.1111/jnu.12113

Rossman, G. B., & Rallis, S. F. (2017). *Learning in the field: An introduction to qualitative research* (4th ed.). Sage Publications. https://doi.org/10.4135/9781071802694

Saldaña, J. (2021). The coding manual for qualitative researchers. (4th ed.). Sage.

Sauerwein, A. M., & Thistle, J. J. (2023). Cognitive processes used by graduate students during case-based AAC assessment and intervention think-aloud tasks. *Teaching and Learning in Communication Sciences & Disorders*, *7*(2). https://doi.org/10.30707/TLCSD7.2.1690393489.688265

Sternberg, R. J. (2003). What is an "expert student?". *Educational Researcher*, *32*(8), 5-9. https://doi.org/10.3102/0013189X032008005

Strauss, A, & Corbin, J. (1994). Grounded theory methodology: An overview. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 273-285). Sage Publications.

Thistlethwaite, J. E., Davies, D., Ekeocha, S., Kidd, J. M., MacDougall, C., Matthews, P., Purkis, J., & Clay, D. (2012). The effectiveness of case-based learning in health professional education. A BEME systematic review: BEME Guide No. 23. *Medical Teacher*, *34*(6), e421–e444. https://doi.org/10.3109/0142159X.2012.680939

Thompson, C. C. (2019). Advancing critical thinking through learning issues in problem-based learning. *Medical Science Educator*, *29*(1), 149–156. https://doi.org/10.1007/s40670-018-00649-2

Vehmas, S., & Watson, N. (2014). Moral wrongs, disadvantages, and disability: A critique of critical disability studies. *Disability & Society*, *29*(4), 638-650. https://doi.org/10.1080/09687599.2013.831751

Vespone, B. (2023). Co-constructing teaching and learning in higher education: A literature review of practices and implications. *Journal of Learning Development in Higher Education*, *27*. https://doi.org/10.47408/jldhe.vi27.997

Visconti, C. F. (2010). Problem-based learning: Teaching skills for evidence-based practice. *Perspectives on Issues in Higher Education*, *13*(1), 27-31. https://doi.org/10.1044/ihe13.1.27

Vygotsky, L. (2012). Thought and language (A. Kozulin, Ed., E. Hanfmann, G. Vakar, & A. Kozulin, Eds. & Trans.; Rev. & exp. Ed.). A. Kozulin (Ed.). MIT Press. (Original work published 1934).

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. (M. Cole, V. John-Steiner, S. Scribner & E. Souberman, Eds). Harvard University Press.

Williams, B. (2005). Case based learning--A review of the literature: Is there scope for this educational paradigm in prehospital education? *Emergency Medicine Journal, 22*(8), 577-581. https://doi.org/10.1136/emj.2004.022707

Yin, R. K. (2014). *Case study research: Design and methods* (5th ed.). Sage Publications.

Yoo, M., & Park, H. (2015). Effects of case-based learning on communication skills, problem-solving ability, and learning motivation in nursing students. *Nursing & Health Sciences, 17*(2), 166-172. https://doi.org/10.1111/nhs.12151

Zheng, B., & Mavis, B. (2022). Linking theory to practice: Case-based learning in health professions education. In C. L. G. Quek and Q. Wang (Eds.), *Designing technology-mediated case learning in higher education* (pp. 33-47)., Springer, Singapore. https://doi.org/10.1007/978-981-19-5135-0_3