An Analysis of the Clinical Habits of Master Speech-Language Clinicians and Their Relevancy to Student Speech-Language Pathology Clinicians

An Honors Thesis (HONR 499)

by

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Abstract

Speech therapy has been an integral part of improving communication between people for a number of years. More people are seeking and participating in speech therapy as time goes on and the benefits are becoming more apparent to the public. Children, adolescents, adults, and elderly individuals can all experience personal improvement in communication. However, the outcome of their time in speech therapy is greatly affected by the skills of the clinician that facilitates their therapy. Years of experience influence a clinician's overall ability to conduct therapy, but it is important for clinicians to also consult other clinicians and current research to further develop skills that improve their ability to plan and manage an effective speech therapy session. I analyzed common skills that clinicians should possess and utilize to facilitate high quality speech and language therapy sessions. These skills include: communicating expectations and goals, time management, antecedents/direct teaching, positive reinforcers/corrective feedback, data collection/probing, behavioral management, and troubleshooting. I then measured how student clinicians implement these skills into their own therapy. The results of the study indicated that many student clinicians use similar skills within their therapy sessions and are typically satisfied with their performance as a speech clinician. The process of conducting this research study has given me insight into the behaviors and attitude I need to be a successful and effective speech clinician as a student and in my future career.

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Process Analysis Statement

My honors thesis studied how well and how often student clinicians conducting speech and language therapy at Ball State University's Speech Clinic implemented behaviors that are key to successful speech therapy. Classroom education to prepare students to be speech clinicians is important; however, the clinic setting provides an opportunity for undergraduate and graduate students to practically use the material and strategies they have learned. The research team chose a number of behaviors that are necessary for successful and effective speech therapy and consolidated them into six general behaviors that student clinicians should be implementing into their speech therapy sessions.

The research team began their research in the Summer of 2018 by deciding the topic they wished to base their research around and began the process of Institutional Review Board (IRB) verification. The verification process took the entire Summer and a portion of the Fall semester of 2018 to complete. Once the research was approved by the IRB, the research team began to recruit participants for the study through email, word of mouth, and flyers posted around the on-campus speech clinic.

When a student clinician agreed to participate in the research, they agreed to have one of their therapy sessions video recorded, to sign consent forms, and to complete a written self-evaluation of their ability as a speech clinician. All of the physical documents were kept in a locked cabinet in the research lab which was only accessible by a key located in the front office of the speech clinic. The clinician, client, and client's guardian signed the consent forms and media release forms prior to the beginning of the recorded session. The lead researcher, Emily Zentz, discussed the implications of the research with the guardian and clinician before they signed the forms. Once written consent was obtained, the session was recorded until its

completion. Following the end of the session, the memory card containing the video was locked in the cabinet in the secure research lab.

Following the collection of all six clinical videos, the lead researcher uploaded all of the videos to an online drop box for increased ease of access for all members of the research team. Two members of the research team watched each recording and coded the clinician behaviors onto their personal Excel spreadsheets also located on the online drop box. The lead researcher then validated the accuracy and similarities of the data collected by both researchers who coded the videos. The validated data was compiled onto a master Excel spreadsheet alongside the self-evaluation results for each clinician.

The research document, included below, that resulted from this research includes an introduction of the research concept and behaviors that were coded, an explanation of the method of the research, a written analysis of the numerical data in the master spreadsheet on the online drop box, and the conclusions the research team drew from the findings. The conclusion includes a brief application to relate the data to the academic experience of student speech clinicians in their undergraduate and graduate education.

An Analysis of the Clinical Habits of Master Speech-Language Clinicians and Their Relevancy to Student Speech-Language Pathology Clinicians

Literature Review

There are elements of speech therapy that transcend all clients and clinicians. These elements are integral parts of every successful therapy session and include: communicating expectations and goals, time management, antecedents/direct teaching, positive reinforcers/corrective feedback, data collection/probing, behavioral management, and troubleshooting (Dwight, 2015). Each essential element is defined and described as they may be practically applied by clinicians when providing speech and language services to children with various communication disorders.

Communication of Expectations and Goals

Communication of expectations and goals is important to facilitate an effective and uninterrupted speech therapy session (Low et al., 1959). Clients will have more satisfying and successful session if they are aware of the goals on which they are focusing and the expectations the clinician has for them. Increased communication leads to an improvement of cooperation between the client and clinician and will give the client a standard toward which they can strive (Maynard, 1991). Communicating expectations and goals in a positive manner and at key times within the session will give the client the information they need to perform their best during therapy. Not only should goals be set, but they should be communicated in such a way that the client is encouraged to succeed and not feel overly criticized by the clinician. Good and Brophy (1984) wrote suggestions for reducing expectations that could have a negative effect on clients including:

> "setting goals for individuals in terms of minimally accepted standards and indicating to students that they have the ability to meet those standards, stressing progress relative to previous levels of mastery by the individual students, rather than comparing the student's performances to performances of others, and encouraging students to achieve as much as possible by stretching and stimulating students' minds to achieve" (pg. 137).

The clear communication of expectations and goals is vital to successful speech therapy; however, the expectations and goals should be accompanied by consistent encouragement instead of criticism. Using positive language and verbal reinforcement will inspire the client to stay motivated and believe they can achieve their goals.

If the client is still in direct care of his or her parents, the clinician should discuss their goals and expectations for speech therapy with the parents as well. Parents encourage their child to improve outside of the designated speech therapy time and should be aware of the topics, skills, and speech sounds the client is seeking to improve. Consistent communication between the clinician and the parents will improve the support system the client has and will further motivate and equip the client to improve (Low et al., 1959).

Time Management

Time management includes allotting appropriate time to prepare effective activities for each session and keeping a consistent pace throughout the therapy sessions that allows all activities to be completed thoroughly (Dwight, 2015). Clinicians should always be aware of the approximate duration of each of their planned activities to effectively use all of the therapy time they have with their client (Burkhart et al., 1979). Many clinicians will choose to focus their activities on their client's ability to sustain attention or maintain a behavior for a predetermined period of time. The time spent in therapy sessions must be managed appropriately in order to

accomplish activities for every time-sensitive goal. Many clients are young and have limited attention abilities; therefore, time management skills should include planning enough activities to fill the entire therapy session and to keep the client from becoming disinterested by repeating the same activity for an extended period of time. These skills include directing activities in therapy so that all tasks are accomplished and planning engaging activities to reduce the amount of time wasted.

Speech therapy should include a variety of activities in order to best serve the client; however, utilizing a number of activities during a therapy session requires the clinician to implement transitions. Transitions are a vital component of therapy because they require the clinician to skillfully move from one activity to another without wasting valuable time (Burkhart et al., 1979). With younger clients, it can be difficult to transition between tasks because children may enjoy the activity they are currently doing, or they may struggle to accept change. It is important that the clinician helps the client to understand when they are finished with one activity and need to move on to the next activity. The clinician should spend an appropriate amount of time on each activity to have a therapy session that is productive and beneficial to the client.

Antecedents/Direct Teaching

Antecedents/direct teaching include events that occur during therapy that stimulate a response from the client (Dwight, 2015). Clinicians use antecedents to indicate their expectations from the client and deliver treatment (McReynolds, 1970). In the book *Here's How to Do Therapy,* Debra Dwight (2015) states that antecedents and direct teaching manifest in four ways during a therapy session: "alerting stimuli, cueing, modeling, and prompting" (pg. 144). Alerting stimuli are the very first indication to a client that they are about to receive a treatment stimulus.

They serve to direct attention to the source of information, which is usually the clinician, so they are able to understand an activity, see how to make a sound, view the rule sheet, etc. For example, utilizing a rule sheet during a therapy session will give the client information about what the clinician expects from them behaviorally and how well they are meeting those expectations. A client can see the rules, or pictures representing the rules, which keeps the clinician's expectations at the forefront of their mind. Cueing is auditory, visual, or tactile in nature. Cues are used to "promote correct responses" (Dwight, 2015, pg. 145). The clinician should utilize cues that are most conducive to the client's needs and will promote the most improvement. Modeling is "the clinician's production of a target behavior for the client to imitate" (Dwight, 2015, pg. 145). There are different types of modeling and strategies used by clinicians for direct teaching:

1) Using the clinician's own mechanical movements in person or through an electronic screen
2) Using the client's own correct response
3) Using modeling often at the beginning of therapy to set expectations
4) Request that the client replicates the model as closely as they can
5) Encourage correct or nearly correct responses
6) As the client increases in ability, reduce the frequency of modeling (Dwight, 2015, pg. 145).

Prompting is not as direct as modeling, but is an effective method to elicit a specific response from a client and is similar to cueing. Prompts are often concise and used to reduce errors. Dwight (2015) also lists suggestions for using prompts correctly in speech therapy:

1) Use prompts promptly if the client hesitates

2) Use prompts more frequently at the beginning of speech therapy to reduce the likelihood of later errors
3) Use short or subtle prompts rather than loud or long utterances
4) Gestural prompts are preferable to verbal
5) Partial modeling is an effective prompt
6) Lessen uses of prompts as response accuracy grows more consistent (Dwight, 2015, pg. 146). A clinician may use verbal prompts, such as "say /sh/," to elicit a /sh/ sound from the client. As the client's production of /sh/ improves, the clinician may reduce the number of times they model the /sh/ sound to allow the client to produce the sound autonomously.

Stimulus presentation evolves over the time the client attends speech therapy by lessening the amount of stimulus presentation as the client's need for it lessens (Ogletree et al., 2001). The stimuli must be presented consistently to allow the client to have a clear understanding of the goal toward which they are working. The clinician and client work to move the client toward gaining a skill they did not previously possess. Stimulus presentation works in a gradual manner, referred to as successive approximation, in order to move from various points of accuracy. When shaping client's responses, the clinician reinforces responses that most accurately resemble the desired response. The most accurate responses are always reinforced, which encourages the client to produce responses that more closely resemble the desired response (Ogletree et al., 2001). Dwight states "the criterion for reinforcement is continuously shifted in the direction of the desired response until that response is emitted, reinforced, and acquired." (Dwight, 2015, pg. 149). Stimulus presentation is typically used in articulation therapy.

Positive Reinforcers/Corrective Feedback

Positive reinforcers/corrective feedback are the tools that clinicians use to shape the behavior of their client. Positive reinforcers are used to encourage clients to continue to use the desired behavior or skill, whereas corrective feedback gives the client information on ways in which they can improve. It is important for the clinician to use a balance of the two in order to prevent the client from becoming discouraged and, therefore, not improving. Verbal praise, tokens, and primary reinforcers are all methods of reinforcing a client's behavior (Powers, 1974). Each client may respond differently to each type of reinforcer, so clinicians should learn how their client is best reinforced and incorporate that method into therapy. It is also preferable to use a variety of reinforcement types to prevent one type from losing its potency (Powers, 1974). Verbal praise may include simply stating what the client did correctly followed by an exclamation such as "Good job!" or "Great try!". Tokens may include giving the child a sticker at the end of the therapy session if they adequately followed all of the speech rules that day.

Corrective feedback "is the information the clinician gives the client regarding the quality, feature, or correctness of a preceding response" (Dwight, 2015, pg. 153). The information should indicate to the client how to improve, remind the client of their goal, emphasize the specific aspects of the response that were not similar to the desired response, and explain the aspects of the client's response that were correct. Corrective feedback should always have more positive points than negative, and feedback should begin with the positive points (Mouratidis et al., 2010). For example, a clinician may say to their client, "I liked the way you used your listening ears in that activity. You had a hard time using quiet hands though, so in the next activity, let's use our listening ears and quiet hands together." This technique encourages the client to desire to behave positively instead of feeling guilty for their negative behavior.

Data Collection/Probing

Data collection/probing is the foundation on which clinicians build their therapy sessions and the way they track the client's progress (Mowrer, 1969). Data must be collected accurately to be certain the client's performance is measured correctly. It can be challenging to attempt to keep a young client engaged while recording data, so a clinician will need to discover and utilize strategies that are best suited for them and their client. Tactics such as grouping data collections in groups of ten, using pluses and minuses, or sampling only the beginning of the activity can be effective ways for the clinician to gather necessary data while still maintaining their focus on the client.

Probing is used to "[investigate] a client's skills in producing nontargeted responses on the basis of generalization" (Dwight, 2015, pg. 155). These speech and language skills that are evaluated using probes have not been treated and are not modeled or prompted. Clinicians use probing to gain an understanding of the client's current ability. The data collected from the probes are the beginning point on which clinicians build the rest of their therapy. Probes are used to determine ability in a variety of areas including voice, fluency, articulation, and language.

Behavioral Management

Behavioral management is necessary to "establish and maintain appropriate client behavior for therapeutic intervention" (Dwight, 2015, pg. 156). Younger clients typically require more structured behavior management techniques than older clients and clinicians should be aware of their client's needs in this area. As the clinician becomes more familiar with the client, he or she can decide how to best manage their client's behavior. Important components for effectively managing a client behavior can include:

> "communicating clear clinical expectations, conducting therapy sessions that are engaging and motivating with clear rationales, establishing clinical objectives that are

challenging, but within the client's capabilities, delivering lessons or activities of the session effectively, and creating a positive, supportive atmosphere within the therapeutic setting" (Dwight, 2015, pg. 157).

Behavioral management entails a variety of techniques such as verbal reminders to attend to the activity, positioning the client's chair to face away from a distracting window, choosing to place activity materials out of the client's reach, or creating a speech rules chart. Speech rules charts are often effective for younger clients ages 0- 10, because they clearly outline the clinician's expectations for their behavior. Some charts may have pictures that the client can remove or add to the chart based on the clinician's assessment of their behavior that day. Others may have colored paper clips that can be added or removed based on the client's accordance with the behavior listed on the chart. The behavioral management technique is the clinician's choice and it should be based off of the apparent needs of the client. Every client requires unique behavioral management techniques, so speech clinicians should be prepared to research and utilize new behavior management systems as needed.

Reinforcements play a significant role in behavior management. When a client expresses a desirable behavior, the behavior should be positively reinforced so the likelihood of that behavior occurring again increases (Ogletree, 2001). Using positive reinforcement is preferable to negative criticism because it prevents the client from becoming discouraged and losing motivation to participate. Scheduled reinforcement can be effective with clients who need a goal to strive towards at the end of each session, week, or month. Verbal reminders of that goal can alter the client's behavior in a positive way.

Troubleshooting

Troubleshooting becomes necessary when a client is having difficulties progressing in ability or therapy is not proceeding well. There are typically two areas where troubleshooting is required: clinician-focused difficulties and client-focused difficulties (Dwight, 2015, pg. 161-162).

Clinician-focused troubleshooting investigates potential areas of difficulty that lie with the clinician. The clinician must ask themselves how they are performing as a therapist- are their communication skills appropriate, are they planning activities that will engage the client, are they setting correct goals and expectations for the client, and are they keeping data accurately? (Dwight, 2015, pg. 162). Evaluating their own clinical skill is the first step to discovering if the therapy difficulties can be improved by altering their approach.

Client-focused troubleshooting evaluates the prospect that the difficulties arise from client behaviors that negatively affect the progression of therapy. The clinician can ask him or herself, is the client struggling to stay motivated, is the client embarrassed by their speech or ability level, or does the client lack outside support? If a client is unmotivated, the clinician can alter the types of activities they use in therapy; or, if the client is self-conscious, the clinician can make an effort to encourage their efforts more often (Owen et al., 2014). The clinician is responsible for taking any action available to them to improve the client's progress.

Communicating expectations and goals, time management, antecedents/direct teaching, positive reinforcers/corrective feedback, data collection/probing, behavioral management, and troubleshooting are qualities and skills speech clinicians are expected to have in order to conduct successful therapy. All of these abilities benefit the client and make the therapy session more efficient and effective. However, all clinicians have varying intrinsic and extrinsic strengths, so they must develop the qualities that may not come naturally to them. For example, some

clinicians have a natural ability for flexibility, but have to dedicate more effort to increasing their ability to build rapport with clients. The development of these qualities and skills are important in order to be an effective clinician, but may take some strategic action to gain. Utilizing the knowledge and experience of other clinicians is a valuable way to learn how to increase ability in areas that may be lacking. Asking older clients for feedback on performance can also be beneficial for learning how to be a more well-rounded clinician. Motivation, the desire to improve, and perseverance are all qualities of a speech clinician who will be successful and reach their personal goals. The process of learning is ongoing and clinicians with several years of experience are always learning new methods and techniques from other clinicians and from emerging research. Speech clinicians best serve their clients by using evidence-based practice and by continuously striving to improve their own ability as a therapist (Kumar, 2012).

The purpose of this study was to examine how undergraduate and graduate speech-language pathology students facilitate their therapy sessions and develop the aforementioned skills and qualities. This research project aimed to provide students with applicable tools for conduction of speech therapy sessions and help them avoid common shortcomings that often affect student clinicians who lack experience. This study intended to emphasize the importance and benefit of observation hours and pre-graduate clinic hours mandated by the American Speech and Hearing Association (ASHA, 2019). By observing more experienced clinicians and recording the methods they implement with their own clients, clinical habits of master clinicians will emerge to train future clinicians. This research project can also benefit experienced clinicians in the education field who are interested in the common habits and methods of student clinicians. Clinicians with several years of experience are always learning new methods and techniques. Therefore the following research questions was posed: what are the common skills

that student speech speech-language pathology clinicians utilize or under-utilize when they conduct speech and language therapy with children with varying communication disorders?

Method

Design

We used a qualitative ethnography approach to describe the phenomenon of conducting and learning how to conduct speech and language therapy with children.

Participants

All student clinician participants volunteered to participate in the study after being made aware of its requirements and procedures. The clinicians were required to be between 18-80 years of age, be an undergraduate or graduate student clinician at the Ball State University Speech Clinic, be working with a client that is between the infant or adolescent age range (0-15 years of age). Student clinicians under the age of 18, with clients outside of the specified age range were not eligible to participate in this research study.

Client participants were required to be an infant to adolescent (between 0-15 years of age) and voluntarily consent to participate in this research study. The study was approved by the Institutional Review Board and the lead researcher thoroughly explained the research to each participant before they signed the consent forms.

Data Collection

This study sought to avoid disrupting the typical behaviors of the student clinicians while the behavioral data from the therapy session was collected. Therefore, digital video/audio recorder was be set up in each therapy room to capture video and audio data from approximately 50-minute to 2-hour therapy sessions. The camera was placed in the most unobtrusive location to keep the therapy session as natural as possible. All clients who receive services at the Ball State

Speech and Hearing Clinic signed a media release form before treatment commences. The client's guardian signed a parent's consent form acknowledging their consent for the session to be recorded prior to the video recording of the session. A media release form was also signed by the parent to indicate their consent for the footage of the session to be stored in a secure location and only viewed by the research team. The clinicians were instructed to conduct their therapy session per their natural routine.

The student clinicians were asked to complete a survey via pen and paper after their session has been recorded. The survey was designed to take no more than 10 minutes to complete and was a personal evaluation of clinical skills and abilities.

Coding

The behaviors coded by the research team are listed and described in Appendix B. Each behavior was assigned a number to streamline the coding process. Members of research team watched and tallied behaviors from the videos. Each video recorded session varied in length, but the research team coded behaviors in every third minute of 40 minutes of each video to allow each clinician to have an equal amount of time to exhibit behaviors. The research team collaborated following the observations of the recordings and coding of behaviors to resolve any differences in the analysis of the observed behaviors.

Results

Observation and coding of the video recordings by the research team resulted in the appearance of a variety of behaviors displaying necessary clinical skills throughout the sessions. Each of the names listed below are pseudonyms to protect the identities of the clinician participants.

Clinician 1 (Sarah)

Sarah was a graduate clinician at the time of the study and had a client in the school age group and exhibited a total of 72 recorded behaviors. A summary of the frequency of her types of behaviors are included in Table 1:

Table 1: Sarah Clinician Behaviors Observed

Behavior	Frequency
1. Communication of Expectations and Goals	3
2. Time Management	9
3. Antecedents/ Direct Teaching	33
4. Positive Reinforcers/ Corrective Feedback	16
5. Data Collection/ Probing	0
6. Behavioral Management	11
7. Troubleshooting	0
Total behaviors	72

Antecedents/Direct Teaching occurred the greatest number of times within the session meaning the clinician supplied antecedents/direct teaching more than any other behavior. Many of the behaviors in this category were asking questions, prompting client to make specific facial representations of an emotion, and reading to the client. Positive Reinforcers/ Corrective Feedback, occurred the most often after Antecedents/Direct Teaching so the clinician frequently gave feedback based on her client's responses. Most of these clinician behaviors were positive feedback for listening well and accomplishing an activity with accuracy. The third behavior exhibited most often by Sarah was Behavioral Management which consists of behavioral

management techniques. The clinician frequently addressed behaviors such as hitting eyes or picking noses as they are socially inappropriate and distracted from the speech activities.

Survey results for clinician. On her survey, Sarah indicated overall satisfaction with her ability to conduct therapy effectively. She assigned herself a score of 4 for the questions, 'How often do you feel you create and implement intervention plans that utilize the latest therapy methods for your clients?' and 'How often do you modify your plans/ therapy techniques to meet your client's needs during sessions?,' indicating that she believed she exhibited those behaviors 'often' during her therapy sessions. For questions 2, 3, 4, and 6 she gave herself a score of 5 meaning she believed she 'always' did those behaviors during therapy sessions. The behavioral data coded from the session indicates that the clinician did not collect any data during the portions of the session that were analyzed, yet the clinician indicated that she always collects data during the session. The self-evaluation results do not coincide with the recorded data for question number 3 which asks "How often do you collect specific/accurate behavioral data to measure your clients' performance and progress during therapy sessions?".

Clinician 2 (Laura)

Laura is an undergraduate clinician who was conducting therapy with a client between age 0-3 during her time of study. She had a total of 134 behaviors recorded during her therapy session. A summary of the frequency of her types of behaviors are included in Table 2:

Table 2: Laura Clinician Behaviors Observed

Behavior	Frequency
1. Communication of Expectations and Goals	2
2. Time Management	2
3. Antecedents/ Direct Teaching	76

4. Positive Reinforcers/ Corrective Feedback	24
5. Data Collection/ Probing	16
6. Behavioral Management	12
7. Troubleshooting	2
Total behaviors	134

Antecedents/Direct Teaching occurred the greatest number of times within the session. The clinician utilized repetition of productions to teach the client the correct pronunciation of a sound and asked questions to keep the client engaged. The second most common behavior was Positive Reinforcement/ Corrective Feedback. Much of the clinician's behavior consisted of positively reinforcing the client's accurate sound production and providing corrective feedback to inaccurately produced speech sounds such as /k/. The third most exhibited behavior was Data Collection/ Probing. Laura often took note of the client's responses to her antecedents throughout the session to gather data that will allow her to plan future therapy sessions that will best suit the client's needs.

Survey results for clinician 2. Laura was reasonably confident with her performance as a speech clinician and assigned herself a mix of 4's and 5's meaning she believed she either 'always' or 'often' exhibited the behaviors. For questions 1, 2, and 5, 'How often do you feel you create and implement intervention plans that utilize the latest therapy methods for your clients?', 'How often do you feel you implement personally relevant materials or activities for you clients during treatment sessions?', and 'How often do you feel you clearly model the desired response from you client?', she selected a rating of 4. For questions 3, 4, and 6, 'How often do you collect specific/accurate behavioral data to measure your client's performance and progress during therapy sessions?', 'How often do you modify your plans/therapy techniques to

meet your client's needs during sessions?', and 'How often do you use your client's reactions/ nonverbal cues to influence the way you manage their therapy sessions (e.g. allow for play time at the end of therapy to motivate the client to participate during the session or taking rest breaks throughout)?', she scored her frequency of behaviors as 5. The recorded data corresponds to the clinician's self-evaluation results moderately. She only displayed Troubleshooting behavior two times during the session and she reported that she always troubleshoots behavior which could be a discrepancy between the clinician's self-perception and the data.

Clinician 3 (Sharon)

Sharon is an undergraduate student conducting therapy with a school age client. She had a total number of 104 behaviors recorded from her session. A summary of the frequency of her types of behaviors are included in Table 3:

Table 3: Sharon Clinician Behaviors Observed

Behavior	Frequency
1. Communication of Expectations and Goals	6
2. Time Management	9
3. Antecedents/ Direct Teaching	49
4. Positive Reinforcers/ Corrective Feedback	22
5. Data Collection/ Probing	17
6. Behavioral Management	0
7. Troubleshooting	1
Total behaviors	104

The most commonly recorded clinician behavior was Antecedents/Direct Teaching. Sharon frequently prompted the client to verbally respond through direct requests and questions.

Positive Reinforcement/Corrective Feedback was the second most commonly recorded behavior. The clinician encouraged the client's accurate verbal productions and did not provide any corrective feedback. Data Collection/Probing occurred the most after Antecedents/Direct Teaching and Positive Reinforcement/Corrective Feedback meaning the clinician frequently recorded data from her client.

Survey results for clinician 3. Sharon expressed moderate confidence in her frequency of exhibition of positive, effective behaviors as a clinician. She assigned herself a rating of 3, indicating she sometimes performed the behaviors, on questions 2 and 4. For questions 1, 3, 5, and 6, she scored herself with 4's

Clinician 4 (Brittany)

Brittany is an undergraduate student conducting therapy with a client age 0-3. She had a total number of 84 behaviors recorded from her session. A summary of the frequency of her types of behaviors are included in Table 4:

Table 4: Brittany Clinician Behaviors Observed

Behavior	Frequency
1. Communication of Expectations and Goals	3
2. Time Management	2
3. Antecedents/ Direct Teaching	32
4. Positive Reinforcers/ Corrective Feedback	33
5. Data Collection/ Probing	4
6. Behavioral Management	10
7. Troubleshooting	0
Total behaviors	84

Positive Reinforcement/Corrective Feedback was most commonly recorded in this therapy session. Brittany verbally reinforced the client's correct responses, encouraged good behavior, and gave constructive criticism of incorrect sound productions. The second most common behavior was Antecedents/Direct Teaching. The clinician asked the client many questions during the session and explained the speech activities. Brittany's third most common behavior was Behavioral Management. She mostly reminded the client to adhere to the speech rules throughout the session.

Survey results for clinician 4. Brittany indicated moderate satisfaction with her performance as a student speech clinician. She assigned herself a score of 4, 'often', on questions 1, 3 and 5 which are 'How often do you feel you create and implement intervention plans that utilize the latest therapy methods for you clients?', 'How often do you collect specific/accurate behavioral data to measure your client's performance and progress during therapy sessions?', and 'How often do you feel you clearly model the desired response from you client?'. The clinician gave herself a score of 5, 'always', on questions 2 and 6 which are 'How often do you feel you implement personally relevant materials or activities for your clients during treatment sessions?' and 'How often do you use your client's reactions/nonverbal cues to influence the way you manage their therapy sessions (e.g. allow for play time at the end of therapy to motivate the client to participate during the session or taking rest breaks throughout)?'. She chose a rating of 2, 'rarely,' on question 4 which is 'How often do you modify your plans/therapy techniques to meet your client's needs during sessions?'. The rating of 'rarely' on 'How often do you modify your plans/therapy techniques to meet your client's needs during sessions?' coincides with the clinician's self-evaluation- she did not exhibit any troubleshooting behaviors. The data indicates she exhibited many positive reinforcing behaviors which corresponds to her rating of 'always' on

‘How often do you use your client’s reactions/nonverbal cues to influence the way you manage their therapy sessions (e.g. allow for play time at the end of therapy to motivate the client to participate during the session or taking rest breaks throughout)?’.

Clinician 5 (Ashley)

Ashley was an undergraduate student conducting therapy with a school age client at the time of the investigation. She had a total number of 105 behaviors recorded from her session. A summary of the frequency of her types of behaviors are included in Table 5:

Table 5: Ashley Clinician Behaviors Observed

Behavior	Frequency
1. Communication of Expectations and Goals	5
2. Time Management	8
3. Antecedents/ Direct Teaching	54
4. Positive Reinforcers/ Corrective Feedback	30
5. Data Collection/ Probing	5
6. Behavioral Management	2
7. Troubleshooting	1
Total behaviors	105

Antecedents/Direct Teaching, was the most commonly recorded behavior in Ashley’s session. She exhibited this behavior through asking questions related to the client’s wellbeing. Many of her questions asked if he was ready for the activity, if he was ok, and if he was tired. The second most common behavior was Positive Reinforcement/Corrective Feedback. Ashley utilized verbal reinforcement of desirable behaviors and specific praise of accurate verbal productions. The third most common behavior, by a wide margin, was Time Management. The

clinician frequently used statements that encouraged the client to move at a more appropriate pace during the session.

Survey results for clinician 5. On her survey, Ashley expressed that she believed her performance as a speech clinician was exceptional. She rated her frequency of successful speech clinician behaviors as 'always' on questions 2, 3, 4, and 6. Those questions were 'How often do you feel you implement personally relevant materials or activities for your clients during treatment sessions?', 'How often do you collect specific/accurate behavioral data to measure your client's performance and progress during therapy sessions?', 'How often do you modify your plans/therapy techniques to meet your client's needs during sessions?', and 'How often do you use your client's reactions/nonverbal cues to influence the way you manage their therapy sessions (e.g. allow for play time at the end of therapy to motivate the client to participate during the session or taking rest breaks throughout)?'. On the questions 'How often do you feel you create and implement intervention plans that utilize the latest therapy methods for your clients?' and 'How often do you feel you clearly model the desired response from your client?' the clinician gave herself a score of 'often'. The frequency of data collection and troubleshooting behaviors from this clinician were low which does not correspond the rating of 'always' that she assigned herself for the questions 'How often do you collect specific/accurate behavioral data to measure your client's performance and progress during therapy sessions?' and 'How often do you modify your plans/therapy techniques to meet your client's needs during sessions?'.

Clinician 6 (Carly)

Carly was an undergraduate student conducting therapy with a client between the age of 0-3 during the course of the investigation. She had a total number of 155 behaviors recorded

from her session. . A summary of the frequency of her types of behaviors are included in Table 6:

Table 6: Carly Clinician Behaviors Observed

Behavior	Frequency
1. Communication of Expectations and Goals	9
2. Time Management	3
3. Antecedents/ Direct Teaching	89
4. Positive Reinforcers/ Corrective Feedback	30
5. Data Collection/ Probing	2
6. Behavioral Management	21
7. Troubleshooting	1
Total behaviors	155

Antecedents/Direct Teaching was recorded most often during the session. Carly utilized questions, specifically designed to have the client choose between two options, to elicit responses from her client. Following Antecedents/Direct Teaching in frequency of occurrence was Positive Reinforcement/Corrective Feedback. The clinician often corrected the client's production of speech sounds and verbally validated his efforts to accurately produce the sound. The third most common behavior was Behavioral Management. The client was especially young which meant the clinician was consistently redirecting behavior and reminding him to adhere to the previously determined speech rules. Verbal redirections were commonly used such as "Sit back on your pockets" or "Do not leave the room, please."

Survey results for clinician 6. Carly's evaluation of herself showed that she was satisfied with her performance, but she recognized where there was opportunity for

improvement. She scored herself with ‘sometimes’ on the question ‘How often do you feel you create and implement intervention plans that utilize the latest therapy methods for your clients?’. She listed a score of ‘often’ on the questions ‘How often do you feel you clearly model the desired response from your client?’ and ‘How often do you use your client’s reactions/nonverbal cues to influence the way you manage their therapy sessions (e.g. allow for play time at the end of therapy to motivate the client to participate during the session or taking rest breaks throughout)?’ Carly assigned herself a score of 5 on “How often do you feel you implement personally relevant materials or activities for your clients during treatment sessions?’, ‘How often do you collect specific/ accurate behavioral data to measure your clients’ performance and progress during therapy sessions?’ and ‘How often do you modify your plans/therapy techniques to meet your client’s needs during sessions?’. The assignment of ‘always’ on ‘How often do you collect specific/ accurate behavioral data to measure your clients’ performance and progress during therapy sessions?’ differs from the low frequency of data collection behaviors and troubleshooting behaviors indicated by the recorded data. The clinician was accurate in her interpretation of her high frequency of antecedents/direct model when she scored herself with ‘often’ on ‘How often do you feel your clearly model the desired response from your client?’.

Behavioral Summary Across the Clinicians

The undergraduate and graduate clinicians that participated in the research study conducted unique therapy sessions with clients that had varying needs. However, there were some distinct similarities in the frequencies of specific types of behaviors exhibited across the clinicians. The most common behavior recorded in all of the therapy sessions, except for one, was the presentation of antecedents/direct teaching. Typically, the second most common behavior was the delivery of positive reinforcement/corrective feedback. Many times, those

behaviors were much more common than any of the other behaviors by a large margin meaning the clinicians performed those behaviors much more often than the rest of any of the other behaviors the research team coded.

The research team deemed the seven behaviors analyzed in each of the therapy session recordings as necessary to an effective speech therapy session. However, many of the behaviors, including communication of expectations and goals, time management, data collection, and troubleshooting, occurred infrequently or not at all during the sessions. Emphasis on antecedents/direct teaching, positive reinforcement/corrective feedback, and behavioral management were evident in all of the therapy sessions.

Each student clinician completed all six questions on the self-evaluation. The results of each self-evaluation indicated that the speech clinicians were satisfied with their implementation of successful behaviors during their therapy session. Four of the six participating student clinicians assigned ‘always’ on 50% or more questions on their self-evaluation. The other two clinicians had mostly ‘often’ on their evaluations, indicating they believed they performed behaviors that encouraged the success of their clients often. None of the clinicians assigned themselves ‘always’ on every question meaning all of the evaluated clinicians recognized opportunity for improvement in their performance.

Conclusion

Purpose

The purpose of this study was to evaluate the skills of the student speech clinicians in writing goals and implementing necessary behaviors during their therapy sessions. The research team aimed to answer the question: what are the common skills that student speech speech-

language pathology clinicians utilize or under-utilize when they conduct speech and language therapy with children with varying communication disorders?

Summary

Most of the clinician's behaviors had relatively similar frequencies throughout their therapy sessions. All of the student clinicians performed the most behaviors in the antecedent/direct model category except one. Typically, antecedents/direct model and positive reinforcers/corrective feedback had relatively similar quantities of behaviors. This similarity could stem from the natural order of occurrence between antecedents/direct teaching followed by either positive reinforcement or corrective feedback depending on the accuracy of the client's response. The third most common category was usually Behavior #6 indicating that most clients' needed some sort of behavioral management during therapy in order to promote the effectiveness of the session. Troubleshooting, communicating expectations and goals, time management strategies, and gathering data were utilized in the majority of the recorded therapy sessions, however those behaviors did not occur as often as the antecedents/direct teaching, positive reinforcement/corrective feedback, and behavioral management.

It is probable that antecedents/direct teaching, positive reinforcement/corrective feedback, and behavioral management are behaviors that are easier to implement in speech therapy as a beginning speech clinician. Therefore, students conducting for the first or second time may find it seems more natural to exhibit these behaviors and the other behaviors, such as communication of expectations and goals, time management, data collection, and troubleshooting, take more effort to exhibit and develop. The simplicity of execution of a behavior directly can directly correlate to the frequency at which a behavior occurs. If a behavior is easier to accomplish, it will occur more often.

Another possible influence on the frequency of a behavior is familiarity and equipment. If a student speech clinician takes a class that emphasizes behavioral management techniques, they are likely to implement those behaviors during therapy because they feel more knowledgeable about how to use them. They are equipped to utilize that behavior. However, if a student speech clinician has never been introduced to troubleshooting techniques during their education, they are much less likely to attempt to include those behaviors in their therapy. Increasing a student's familiarity with behavioral techniques will increase the likelihood of implementation of those behaviors in speech therapy.

Limitations

Potential limitations that could have affected the outcome of this research study are the specific population of clinicians and clients involved. The clinicians were all undergraduate or graduate clinicians studying at Ball State University and operating within the Ball State University Speech Clinic. All of the student clinicians were between 18-25 years of age and had a maximum of four years of experience treating clients. The clients used were between infancy and adolescence. This study's outcome could have changed if adult and geriatric clients were included and if speech clinicians with more than 10 years of experience were evaluated. Those clients have different needs than younger clients which alters the behaviors of the clinicians that work with them. Geriatric clients may require fewer behavioral management techniques, but more antecedents than younger clients. These different needs could have altered the behaviors expressed in the therapy sessions and resulted in different data outcomes.

It also would have been helpful to gather more information about each client. Clinician behaviors often depend on the behaviors and ability levels of their clients and whether the therapy sessions focus more on articulation or language goals. Some clients require more

behavioral management than most. If the researchers collected more data about each client that our clinicians conducted therapy with, they could have obtained more background information as to why the clinicians behaved in the manner that they did.

Application

Many student clinicians utilize behaviors during their speech sessions that encourage their client to have success in therapy. As they progress in their education and gain more experience, their confidence in their own ability as a clinician and their ability to consistently implement appropriate behaviors within their session will increase. To improve the educational experience of Speech Pathology undergraduate and graduate students, professors and supervisors within the department should incorporate and model how to implement effective behaviors such as communication of expectations and goals, time management, antecedents/direct teaching, positive reinforcement/corrective feedback, collection of data, behavioral management, and troubleshooting as a student clinician. Doing so will encourage student clinicians to have the confidence to conduct successful therapy and to feel more equipped to have a career as a speech language pathologist.

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Appendix A

Clinical Competency Self-Evaluation

Please indicate how often you implement each aspect of Speech Therapy based on the questions and scales provided (1 being "never" and 5 being "always").

1. How often do you feel you create and implement intervention plans that utilize the latest therapy methods for your clients?

1	2	3	4	5
Never	Rarely	Sometimes	Often	Always

2. How often do you feel you implement personally relevant materials or activities for your clients during treatment sessions?

1	2	3	4	5
Never	Rarely	Sometimes	Often	Always

3. How often do you collect specific/accurate behavioral data to measure your clients' performance and progress during therapy sessions?

1	2	3	4	5
Never	Rarely	Sometimes	Often	Always

4. How often do you modify your plans/ therapy techniques to meet your client's needs during sessions?

1	2	3	4	5
Never	Rarely	Sometimes	Often	Always

5. How often do you feel you clearly model the desired response from your client?

1	2	3	4	5
Never	Rarely	Sometimes	Often	Always

6. How often do you use your client's reactions/ nonverbal cues to influence the way you manage their therapy sessions (e.g., allow for play time at the end of therapy to motivate the client to participate during the session or taking rest breaks throughout)?

1	2	3	4	5
Never	Rarely	Sometimes	Often	Always

Appendix B
Clinician Behaviors

Behavior Number	Behavior Title	Behavior Description
1	Communicating Expectations and Goals	Clinician introduces or reminds client of speech rules, behavior expectations, or activity instructions at any point during the therapy session- take note of when the introduction/reminder occurs
2	Time Management	Clinician planned enough activities, spent appropriate (approximately equal) amount of time on each activity, was time used effectively or did client's behavior waste time?
3	Antecedents/Direct Teaching	Includes: alerting stimuli, cueing (auditory, visual, or tactile cues), modeling, and prompting. What materials are used (ex. Rule sheet), what verbal antecedents/direct teaching are used
4	Positive Reinforcers/ Corrective Feedback	Verbal reinforcers ("good job" or "I liked that /f/ sound" or "I like the way you are sitting on your pockets")/ physical reinforcers (snacks, stickers); corrective feedback (positive?) such as "good try, remember to use your /f/ sound"
5	Data Collection/Probing	What is clinician recording? How are they recording (every instance, every couple of instances, only for a sample at the beginning, etc?); was probing done/ how was it done?
6	Behavioral Management	Clinician's prevention/ management of behavior that does not coincide with the speech rules established for

		the client; ex. "XX, are you using our Looking Eyes speech rule?"
7	Troubleshooting	Clinician's ability to alter clinic activities, procedure, and plans to increase effectiveness; clinician's ability to interact with client in a way that takes care of client's personal inhibitors of effective therapy (embarrassment, frustration, etc.)