Evidence-Based, Effective Clinical Teaching Strategies - Students' Perspectives

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At this time it's my pleasure to welcome back to Audiology Online Dr. David Jedlicka. He is an audiologist at the VA Pittsburgh Healthcare System, an adjunct faculty member at the University of Pittsburgh, and a fourth year PhD student at the University of Pittsburgh studying self perceived listening difficulties among individuals without measured hearing loss. What an amazing topic. We'll talk about that another time and for today we're will bring over Dr. Jedlicka to talk about evidence based effective clinical teaching strategies, students perspectives. Thank you for the introduction.

Always a pleasure to be invited back to Audiology Online, one of my favorite places to learn and to teach. Today's topic is something that I never thought that I would find myself doing research in, but here we are and I have to say I'm very glad for this opportunity that I was afforded with my colleague and mentor Dr. Elaine Mormer. So we're going to talk about this topic that I feel will be very important for people who do provide clinical teaching to students, clinical supervision, clinical precepting, whichever term you may choose to use. Since I do work for the va, it is very important that I say that anything that I discuss in this webinar today are the thoughts and opinions of myself, belong only to me and do not represent any official policy, position or endorsement of the U.S. government or the Department of Veterans Affairs. Just some disclosures.

I'm receiving an honorarium for today and that's about it. No other disclosures that I have of note and limitations and risks. If later on you want to pause and read this, have at it. But for me, I think the most important thing for the limitations and risk is actually the second bullet point here. And something that I want to point out, and I'll just kind of read this verbatim to you, is as healthcare is rapidly evolving, new findings may change the validity of the information presented in this course.

Providers should always consult the latest research and guidelines from professional associations. I think this is important because what we're going to be talking about today is evolving simply because this direction we've taken is so new. We haven't really taken a deep dive into this approach of studying

effective clinical teaching from a student perspective. And the study we're going to be talking about today was just a snapshot in time of one cohort of students. And as we build upon this initial research, what we talk about today could change.

And that's the exciting part, is because as different perceptions will change based on students, we see the different generational aspects. We talk about it with Millennials versus Boomers versus Gen Z. So this is something that's always going to be adapting and something that we should be mindful of as students continue to change throughout our programs. The learning outcomes Today we're going to talk a lot about reflexive thematic analysis. And if you don't know what that is, hopefully by the time we wrap up today, you'll be an expert.

We're going to talk about the key clinical teaching strategies that students perceive as being the most effective, which is something that's going to be new and novel for this type of research. And we're going to talk about what are things that you can do that will really improve your supervision techniques with students. As Carolyn said, the Q and A is open, so if you do have questions, please feel free to submit those. Or if you're a person that doesn't like to raise your hand during class, I will provide my email address at the end of the session and you are always more than welcome to email me with any questions that you have. The material that we're talking about today is one that Dr. Elaine Moore and I published in the American Journal of Audiology that's titled Effective Clinical Teaching Strategies and A Reflexive Thematic Analysis.

We have a lot of great resources and Moore and depth information in that article, so it's a great place to refer. But today we're going to take a deeper dive into what I feel are the more Monday morning take home messages that will allow you to become hopefully a much improved clinical preceptor. Because I know I've changed the way that I have provided clinical education to my students based solely on this project. So why is this important? Why do we need to know what students are thinking when it comes to

clinical teaching?

Well, clinical instruction really bridges theory and practice. How many times have you worked with somebody that say, I'm a hands on learner, you can give it to me in a PowerPoint presentation but it won't click until I actually do it. That's where clinical instruction is so important. The people that are our hands on learners or people that need to integrate both sources of information allow them to do so with the in clinic experiences and the research that we've built. A lot of our evidence based clinical instruction from comes from the educator perspective, not so much from the student perspective.

So our goal with this is to build clinical teaching strategies from the student insights that we've collected today. And if you think about it from a clinical perspective, we build the way that we practice with a patient centered approach. Why don't we do this for education, why don't we build a student centered evidence based supervision practice so that way students can feel heard, understood and receive the type of clinical education that will lead to the best outcomes for them. The limitations of our existing research again is that it is clinical educator focused and when we focus it based on the clinical educators, we look a lot at supervisory practices building student confidence, preparation and barriers to learning. But what about the student's perspective?

What do they find to be the most important? That's where we use this project to build two specific aims. Aim one was to either confirm or refute that audiology students perceptions of effective clinical education approaches align with those of students across other health professions. Because while audiology is a little bit late to this research party, other professions have done a nice job looking at the student perspective to clinical education. And we also wanted to explore which elements of clinical education are most effective from the audiology student's perspective.

This will enable us as audiology educators to provide that student centered approach. Now, if you're like me, I've lived in the quantitative world of research for a very long time. This was my first ever

exploration into doing a qualitative research project. During my PhD program I've had the opportunity to work with some amazing researchers, one of which is my long term mentor, Dr. Elaine Mormer. And she does some amazing work with clinical education research and has dedicated her career to really improving the experiences for students, for preceptors and making sure that the education we provide to them is evidence based and high levels.

And when she approached me about potentially exploring this research question, I jumped on the opportunity. One, because I love working with Dr. Mormer. But two, I realized after speaking with her how big of a knowledge gap we had from the student's perspective. And when she suggested qualitative research I was nervous at first because I had no experience. I didn't feel like the research that I read as part of my work in the PhD program or learning clinically focused a lot on the qualitative perspective.

But after talking with her, I became really excited to engage in this qualitative project. And she broke it down beautifully for me, explaining that the qualitative approach really focuses on the why. And while you can certainly get some numbers and apply things quantitatively, when you're collecting qualitative research, the most important parts is to really emphasize the depth and context and understanding in the responses that you're obtaining from the people that you're surveying. This will help us explain the how or why something is happening. And a lot of the times, the information that you want can't be gleaned from the numbers if you were to approach this type of project quantitatively, but rather the qualitative research will give you such a more robust and in depth answer to the question that you're having now.

When it comes to qualitative research methods, there are a plethora of different approaches that you can take. For our project we use the reflexive thematic analysis approach, which was recommended by Dr. Mormon. I think it was a great choice by her because as I'm going to explain on the next few slides,

this really allows us to take a deeper dive into the responses that we've attained gained from our students. But there are other ways that you could approach this as well, either through methods like phenomenology, grounded theory, ethnography, narrative analysis, discourse analysis, or as we are very familiar with in our field, case studies. So there are many different ways that qualitative research can be applied and everyone has their own strengths and weaknesses.

And I'll hopefully sell you on the reasoning why we felt that the reflexive thematic analysis was the most logical for this project. So what is a reflexive thematic analysis? Prior to starting this project, I never even heard about reflexive thematic analysis. And the big reason why we wanted to use this or why I shouldn't say we want to use why Dr. Moormer suggested this, and I agree wholeheartedly with this approach, is that the reflexive thematic analysis allows us to systematically analyze the patterns within open ended response data. And it does so using a very grounded scientific method where it's a six step approach to developing themes.

That's the goal for reflexive thematic analysis. You take the responses, you follow the six step process, and then you develop these final themes that you will then use to report or present like we're doing today. But one of the big things that the creators of Reflexis Reflexive thematic Analysis Braun and Clark mentioned was that it acknowledges the researchers have an active role in theme development. And while people often say researchers need to be unbiased, if you are working with students, you are going to have some bias because you will have experience, you will have an active understanding of just your own experiences with what you feel students need or the approaches that you found to be most successful. And this was one of the biggest selling points for us was that with Dr. Mormer dedicating her career to education and me being a VA clinician for almost 20 years now and working as an adjunct faculty for over 10 years, we are seeing things that other researchers outside of the field of audiology might not be able to tease out.

So having that active role and that knowledge of the material can help you create a more in depth and robust analysis. The other great thing is this allows for an iterative and reflective process, meaning you're thinking about the data over and over again as you're building your themes, but it doesn't actually make you adhere to a very strict coding framework. This is going to emphasize the evolving nature of thematic interpretation. One of the reasons why I highlighted bullet point number two on the limitations and risks of today's presentation, because as we analyze our data over and over again, we expect what we're seeing to evolve, especially as we continue these projects down the road. This allows the process to become much more valuable for exploring complex or subjective experiences when the researchers have this related experience.

Because not only can we see things that students are saying, that aligns with what we know, it's allowing us to figure out what our blind spots have also been throughout this process. So the six step process that Braun and Clark said for reflexive thematic analysis is step number one is familiarization. Once you've collected your data, you want to make sure you de identify everything. And then the researchers will immerse themselves in the data just by reading and rereading the responses to gain a comprehensive understanding. Now, this was a little bit, I would say that even a little bit the most challenging part for me, because when it comes to research, I just wanted to get going.

And Elaine told me, hey, be patient, take your time. So we spent two weeks after we collected and de identified the information from the responses, just reading it every day over and over again. And while initially that was frustrating for me, it actually became the most important part, because as you're reading the responses over and over again, you start to think about the initial codes and how things are starting to line up together. And you notice things that you may have missed if you only read the responses once, or maybe you only read them a couple times. Once you've taken the time to familiarize yourself with the data, you then lead into step two, which is generating your initial codes.

So when students have responses, you want to code them, because students might use different words, but they could fall underneath the same type of code. So in this process, you are systematically labeling these meaningful units of text that are relevant within the data set. And from that point, when you develop your codes, you can start grouping them together where you are doing your search for your themes. So the codes become grouped into these broader patterns that are going to Reflect the key insights or recurring ideas that are related to the research questions. After you develop these first idea for your themes, you want to review what you've created.

And this is the cool part where you start to see all the work that you've put in from that familiarization and generate, generating your initial codes where now you can see how the themes develop based on the codes that you have and you can analyze your work to make sure that what you're developing in terms of your themes are coherent and distinct and most importantly, that they accurately represent your data. Once you've done that, now you're ready to define and name your themes. This was the part that I found to be a little bit more challenging beyond just the familiarization, because this is the part that is critical where you need to be able to accurately articulate the meaning, the scope and the relevance of each theme in relation to your research aims and the overall narrative. Because if you fail at this part, you are not going to be able to accurately portray what the responses in your data have been telling you. And then lastly, once you've hopefully properly articulated the meaning, scope and relevance of each theme, now you need to develop your themes into a cohesive and compelling narrative which are going to be supported by direct quotes or the excerpts from the participant data.

And that's what we're going to be doing here today of reporting the findings. Now, the other thing which is important in this process is that they, Bron and Clark want you to report and talk about your trustworthiness and rigor, because it's very important, since a lot of the information we're going to be reporting is going to be very subjective in how you interpret it, that you need to talk about what your process was when you developed your themes. So what Dr. Mormer and I did to try to improve the

trustworthiness and rigor was when we developed our codes, we did steps one through four independently. So that way we could compare what we found to either make sure that we were on the same page or to see if we were vastly different in the themes that we had developed. So once we completed steps one through four independently, we met what we called a consensus meeting to talk about our theme identification.

And luckily, since Elaine and I are very much simpatico on many things in the field of audiology, we found that our themes lined up very nicely. So we were very happy that that occurred. But the importance of this trustworthiness and rigor is so that other people could then take a look to see what you did to make sure that the material lined up with what you're reporting. And when we published our findings, we included all of the DE identified student responses as an appendix. So that way if other people wanted to go through and recomplete the study or use a different type of of qualitative analysis for our data, they would have the opportunity to do so to improve that trustworthiness and rigor.

And then just the last point is the final themes we came together and agreed upon at the consensus meeting strictly was intended to represent the student experiences and to identify the teaching strategies that the students found to be most effective. So how did we come about this? Well, again, we use the Braun and Clark method. We did just a snapshot. So we wanted to make sure that the data we were using was going to be from students who were no longer in our program.

So we used data from students that had been were already graduated for a few years. We ended up having data from 62 AUD students at the University of Pittsburgh. These were students that were completing first, second or third year studies. We did not include our externs. From the 62 students that were surveyed.

We ended up having 113 codable responses. The survey that we used was collected as part of an anonymous end of semester surve. This was really important because we didn't want the students

feeling like they needed to filter themselves when it came to their responses because of whatever reason they might feel like they couldn't be fully open or honest. So we intentionally did this. So that way it wasn't current students and it was students that weren't impacted by any type of clinic modifications from the COVID years.

And we didn't want to use current students as well. And the prompt that we used in this survey was what teaching strategy or strategies used by your clinical instructor most positively impacted your learning this term. And from that we collected those data and we used two different analysis methods. Again, going back to that trustworthiness and rigor. I did it the old school way of doing everything manually through Microsoft excel.

And then Dr. Mormer used NVivo 15 which is a software that can be used to do qualitative analysis. Now to make sure that we are not denominational and don't want to seem like we're promoting just one method or one software versus the other. There are many different ways that you can complete a qualitative analysis using different great software. So we use or yeah, Dr. Mormon used NVivo for hers because it is provided to us in the software package at the University of Pittsburgh. But there are other things like Atlas, Deuce, Tagat, which is open source Qualcoder.

So there are many different ways that you can approach qualitative analysis with these different softwares.

For the Excel option, this is what mine screen looked like. Now, if you can't read this, don't worry. That's. This is not the important part. This is just a visual illustration to show how I used Excel to take the responses from the students that were listed here in column B.

And then I developed the codes. And sometimes responses had multiple codes within them, so no student had more than three codes within a response. And from the code we use that last column to

start talking about the themes that could be developed. So this is what Excel looked like. If you are interested in NVivo, you can just do a quick Internet search to see what that software package looks like.

I didn't want to violate any copyright or copyright rules, so that's why I didn't put a picture of nvivo in there. But it's available for you to search and it's a nice software package. NVivo allows you to organize and manage your qualitative data sets. And I think in a much nicer and more visually appealing way than what I was able to do. Excel, you were able to do that systematic and iterative coding of qualitative data, as is called on by the Bron and Clark method, it allows you to support supports you through reflective analysis with flexible coding, memo writing and recoding.

That way you can leave notes for yourself. It has some great tools that will help you identify and develop patterns of meaning across the data set. So if you kind of have writer's block or may researcher's block, it gives you some tools that allows you to identify things that you might be missing. But the other cool thing is that it allows you to retrieve and compare your coded data and it maintains an organized audit trail. So again, back to that transparency, rigor and trustworthiness.

If you have your data set saved, you can share it with other people so they can see every step along the way that you took to determine how you develop your reflexive thematic analysis of the themes. So now I'm really interested. So if you just want to take a moment to think about what themes or specific clinical teaching strategies do you believe that students identified as being the most important? This was something that I was interested to see and whenever I had my first thought, I was like, okay, I have an idea of what I believe is going to be the most commonly cited theme. And spoiler, if you're wondering what that was.

I thought students were going to say independence was the thing that they felt was the most important strategy to gaining confidence and effective clinical teaching strategy. And here's what we have for our

five final themes. And no surprise, luckily my intuition was correct. Independence is one of our themes and it was the most commonly cited theme. So we ended up having about a third of the responses mention independence as.

Or, sorry, a third of the respondents mentioning independence as a theme. So what you're looking at here on this screen is the top row here. This is going to tell you what the five different themes are, which are engaging student thought independence, productive feedback, a supportive approach, and teaching strategies. This is what Dr. Mormer and I came up with together in our consensus meeting. Below that, the other parts you see here with the count.

So if you are a quantitative person, this is your time to shine and seeing some numbers. This is what the codes were. So these are the counts of the codes that we developed in order to come up with our themes. And one of the things we'll talk about a little bit later is you will see that some of these codes actually overlap throughout the themes, which is. Okay, that's actually part of the process, which is really cool, is that you might have codes that can fall in line within multiple themes.

So here are five core themes and we're going to just jump right into all five themes and talk about it a little bit more. So, engaging student thought. What is this? Well, engaging student thought means that the clinical instructor is going to be encouraging reasoning and reflection from the student. And the reason why this is important for students and can facilitate learning and why it might be important for the student as an effective clinical teacher teaching strategy is it promotes critical thinking through questioning.

So rather than just telling a student what to do, you can ask the student, okay, what are you going to do next? Or if A happens, what are you going to do with B? I'm a big fan of providing some tips along the way of things that you can use that will improve your clinical practices. So one tip for the engaging student thought is that you can use guided questioning and debriefing. Debriefing, to me, is one of the

most important clinical teaching strategies that we have, especially if you're able to talk with the student immediately after you finish with a patient, because this way it's still fresh in their mind and that might be able to sink in a little bit more deeply than if you are waiting until the end of the day to talk about all of the cases.

As a whole, part of the Braun and Clark process is to, when you provide your report, to talk about what some of the specific examples are for the student from the responses. So in this case, these are the student responses. So for each one of these five themes, I'm going to verbatim read them as quotes as what Bron and Clark has recommended. So here are four different quotes from students that Dr. Mormer and I felt were important to share. So the first one is, everybody is great at answering questions and providing any information that you need.

So this is good. So this is one of the things where students are going to be thinking about what they just experienced or things that might be coming to their minds as hypotheticals. So they would ask their clinical instructors questions either about the case or maybe clinical practices that will give the student more confidence about what they are expected to do or things that they may have expected after they saw a patient if they chose to take another option. So maybe you're doing a hearing aid selection and you're talking about one style of hearing aid versus the other. Maybe the student was watching a clinical instructor and just doing a more observational type approach.

And in this case they can say, okay, well, why did you choose A instead of B? Or what were the reasons why you felt this treatment approach was going to be better than the other? Or if you want to put that back on the student, you can have the student think about, okay, I selected this. What would be the pros and cons if we went in a different direction? So now the student is thinking about that specific case and they are forced to think about what the alternatives could be.

The next quote is, the clinical instructor was open to discussion or questions whenever I had them. So this kind of aligns in different themes as well, because you're engaging student thought. But this is also showing a bit of supportive approach as well, because you don't want a student to feel like they can't come to you with questions that they might have along the way, especially if things pop up in the moment or when you are providing feedback to students. So having this ability to have a good open discussion or answering questions from the students. And one of my favorite things to do, and it might drive students nuts, is trying to answer their questions with other questions to get them thinking about things at a deeper level.

The third quote is we were then able to ask questions, and if we were wrong, the clinical instructor would explain why and teach us more about it. And that's one of the other things too is you want students to feel comfortable asking questions or thinking about things in a deeper way, that even if they are responding to your questions or you encourage them to think about things and the way that they're approaching it might not be fully accurate, you're giving them the opportunity to at least learn from the incorrect response or maybe the line of thinking that wasn't quite where you wanted them to go. And then lastly, the clinical instructor would ask questions throughout prepping to reinforce understanding of procedures and to make sure the students knew the why behind everything. Again, this is something that you can do as a clinical instructor, which will be valuable for your students. So maybe initially you want to tell them about your clinical processes or what the plans are going to be when you are seeing patients or prepping for the day.

But over time, it's going to be important that you give the students the opportunity to think about what they're going to do. So you can say, okay, do a chart review of the patient, tell me what you think our plans are going to be and explain why you think think we are going to take that approach. This way, the student has to think about it on their own. We do this a lot with our externs. It's one of the things that I tell students all the time, is we're going to just give you more and more string throughout the term and

throughout the year.

Because I don't want the student coming to me asking me what we're going to do. I want them eventually coming to me and saying, okay, this is what we have. This is what I would like to do and why? What are your thoughts? Basically, it's building a more collaborative approach and it's showing that the students are thinking about the cases at a much deeper level rather than just saying, I know how to push buttons and complete an audiogram, or I'm fitting a hearing aid and following the processes that I was teach, that I was taught from my clinical instructors and teachers.

But I haven't put too much thought into the why. The why is going to be the most important question for engaging student thought. Now, the big one. Independence. This was our most frequently cited theme team.

But when I first thought about it, I thought students were just going to say independent. So what clinical teaching strategies did your clinical instructor use that you found to be the most beneficial? That was the question. I thought students would just respond, they gave me independence or they allowed me to practice independently. But with the codes, we found that it wasn't just they let me practice independently.

It was that the students really valued the scaffolded autonomy that students felt like they learned more when they were able to earn independence. Or one of the things we talked about in the independence theme is supervised failure, where students were allowed to make mistakes, but the supervisors and the clinical instructors were there to catch the students and support them when those mistakes have happened. And one of the best things you can do for your Monday morning tip is to adjust the independence level based on student readiness. Every student is going to come in with different backgrounds, different experiences. So you might have students that need a lot more support when it comes to building foundational skills and knowledge.

And other students might come in with a lot more skill that they are able to be more independent than others. And this is where talking to your students early on, having them observe you first and then giving them some of that independence to see how well they do could be a great strategy to use, especially if you're asking a student, how comfortable do you feel doing certain things? One of the things that's often funny is that when we work with students, you will see both ends of the spectrum. You will have students that they just want to come in, make the appointment their own. They say, I'm ready, I can handle it.

And then you see them. Practice shouldn't allow them to do that right away because they were certainly not ready at that point. So you need to rein them back in. But then on the other side, you'll have students who probably should be more independent, but they don't have the confidence yet to be let out on their own. So that's where the.

The theme of scaffolded autonomy, I think, makes the most sense for some of those people, because you want to build the students up. So that way the confidence level matches the level of independence as well. So for our independence examples was the clinical instructor also allowed me to gradually work my way up from observation of clinical skills to interpret independent performance under the clinical instructor's supervision. This allowed me to familiarize myself with those skills and also gain more confidence through regular practice. This is important with that scaffolded autonomy, because students are going to feel much more confident if they've seen you practice in a way that you want them to practice or to do things in a certain way that might fit in with how your clinic operates.

That way, a student just doesn't go in, try something that's completely different than what you're used to, and you think, well, that's not how I would do it. And it doesn't mean it's wrong, just in a different way. But you can at least use that as a different method for teaching the students. You might get to the same destination but take different routes. The second one is when given independence, I felt like I was

able to communicate more effectively with patients and improve within my own counseling skills.

This is great too. How many times have you been in a room with a student and you're working with a patient and either the patient keeps looking at you as the professional because they want to hear from you rather than student, that's not going to be great for developing student independence. The student might not feel confident either. They might not feel like they have the opportunity to develop their own clinical voice or be able to practice in a way that is most beneficial for them and the patient because they might be deferring to you. So if you can do other types of observation like at the University of Pittsburgh.

In our old clinics, we had some two way mirrors where we could observe the students and step in where needed. I love doing this whenever we're doing audiometric testing at the VA in Pittsburgh because I will stay on the examiner side, let the student stay on the patient side, but you can still listen in and provide the students with feedback in real time or step in as needed. The third one is the clinical instructor allowed me to carry out appointments as if they were my own and the CI just passly observed and corrected if needed. Now that's certainly something I wouldn't do on the first day, but with a scaffolded autonomy, you're allowing your students to build up towards that level of independence because that's the ultimate goal of the aud. We're building competent, independent practitioners.

And throughout the term the students should be gaining more independence along the way. And there's going to be times when you do have to step in and correct clinical behaviors if necessary. But if the student is seeing that you're giving them that independence, that could develop into more confidence for the students as well. Fourth quote is the clinical instructor allowed me to do discussions without an instructor in the room, allowed me to feel much more comfortable talking to the patient and find my clinical vocal voice. One of the things I will tell our students at the when they come through the rotations at the VA Pittsburgh is you'll probably work with 10 different preceptors.

You're going to hear us counsel in different ways, explain tests in different ways, take the things that you feel are the most effective when it comes to communicating with patients, and make it your own. Because a student might explain a test in a different way than I can. Or teach a patient about hearing it in a different way than me and it might be more effective. So. So observing students and seeing how they practice can also give you the opportunity to learn and develop your own skills because they might be mimicking things that they've heard from other instructors that you can then incorporate into your practice.

Or if you feel like the student is doing something that's not effective, you can step in. But if you're giving them the opportunity to find their clinical voice, this is a great opportunity to allow your students to hone their own skills. The fifth one I really like this is that this is part of that supervised failure. The clinical instructor allowed me to give my best attempt and was able to show me the correct way to do things and displaying things thoroughly. The joke that some of my friends, like Dr. Lori Zatelli and I will say is as an audiology student, you're probably never going to kill a patient, which is a good thing.

You know, the most dangerous thing we're doing is taking ear mode impressions and placing probe tubes in the ear when we're doing real ear measures. So we have the opportunity for a lot more supervised failure than other professions. So it is great if you can have the students feel confident in performing things on their own and if mistakes are made or if things need to be corrected, we can step in and the students are identifying that same type of perspective as well. And then lastly, the clinical instructor does a great job of letting me, let me learn by making my own mistakes and having as much hands on experience as possible. So that kind of lines up with the same thing.

Sometimes students are going to learn more from their mistakes rather than you stepping in and correcting things right at the beginning. Number three for our themes is productive feedback. This is really important. This is probably something I feel as audiologists we need to do a better job of. And that

is students have reported that they value timely, clear and most importantly, actionable feedback.

And Dr. Mormer has published extensively on this. You need to balance your constructive and your positive input. So we jokingly refer to this as the sandwich method, where when you are going to give feedback to a student, it hits home a lot harder and more effectively if you tell the student, okay, right now I'm going to give you feedback. This way there's no ambiguity. The student realizes they are giving me feedback in this moment right now, now.

So you say, I'm going to give you feedback right now. Start with the positive. You don't want to just give the student actionable feedback that are Full of criticisms. If you start with the positives, that will help the student become much more receptive to the things that you want to improve on. It will improve the student experience and it's going to make more likely that they will not have such a negative reaction to the things that you feel they need to improve on.

And then at the very end, talk more about positive things. And even if it's early on and you think, okay, I don't know if I have too much positive to say. You can still find things like a student is on time, they're punctual, they show up with a good attitude, they're motivated. Those are great things to talk about. To say, look, you're coming in with a smile on your face.

It's very clear that you're passionate about the field of audiology. We love that. We don't want you to lose that. Now let's talk about things where we can improve. And you talk about all the areas where you want to have the student improve with their clinical skills and you wrap it up positively to say, okay, we improve those things.

I know that you are a good learner. I feel like when you take those next steps, it's going to help you develop your skills and you're going to become independent or whatever the goals are for that term. So you do say, I'm giving you feedback positive. Then do your criticisms finish with positives. And then

most importantly, ask what questions do you have?

Don't say do you have any questions? Because soon might just say no. But if you say what questions do you have? Then you're asking the student to think about feedback that they just received and that's going to hopefully make it sink in a little bit more. Make them think about areas where they can improve and how they can improve.

Or if something wasn't clear, you're giving them the opportunity to ask questions about the feedback that you just provided. Most importantly, you want to make sure that you're doing this privately and promptly. So never do it in front of a patient. That would just kill students confidence. Never do it in front of your colleagues unless you're just working as a team.

And never do it in front of another student. Sometimes when we have students, we might have multiple students in the same clinical placement. It would be such a disservice of us to provide criticism or constructive feedback to students in front of one of their peers. That would not be great. So if you can can debrief privately and immediately after you're working with that specific patient, that's going to hit home a lot harder than if you were asking the student to think about things at the end of the day.

Now I live in the real world too. I realize that's not always going to be possible. I know that when you're working with students, your appointments can likely go over time that you might not have time to do it as in depth as you would like. But just a quick do you have any questions about what we just saw? Give the students the opportunity to ask those questions.

Or if you saw something the student did well, talk about it. And if you say, okay, here's what I want to see, you do better for the next patient. When we do a hearing test or when we do a hearing aid fitting or when we do a follow up, those are the types of things that you can build in quickly privately and it will hammer home those points. So that way when you do your wrap up at the end of the day, it's more

beneficial for the student. So our quotes for the productive feedback is the clinical instructor provided clear feedback and always welcomed questions or concerns.

So again, supportive approach, engaging student thought. This lines up with three different codes that all fall within the different themes. The clinical instructor and I discussed feedback and any modifications that would need to be made on the first day of clinic. So that's great. So in this example, they talked about what the expectations were on day number one, which you should be doing.

We concluded that we would adjust on the spot. So that worked for that student. Where the students okay, we can make changes in the middle of our practice based on what we need. This method has been highly effective and works well for my personality type. So for this student they found a method that worked.

They implemented it immediately. A different student might not do well with on the spot type of adjustments. A student might need to wait until their next day in the clinic to make an adjustment. So that's where an opening meeting with a student before the term even starts could be beneficial to identifying what is going to be the most effective way to clinically educate educate a student. Immediate feedback that was positive but instructive.

So that lines up with the Dr. Morimer sandwich method. Positive, constructive, positive. The clinical instructor also gives constructive and positive feedback that allowed for a better learning experience. Sometimes students need that positive reinforcement. They need that motivation.

Having that positive feedback will have the student feeling much more confident and then makes them much more likely to be receptive to areas where they need to improve because they're not just hearing hearing only the negatives. They realize, okay, I did some Stuff that was really good. I did some stuff that needs some improvement. That's okay. We're not just starting from the bottom.

We have areas to improve. And I tell the students all the time, if I'm practicing the same way ten years from now as I am today, I've done a disservice to the field and to my patients that my practice always needs to be improving. And the same goes for the students. Everybody should be striving for improvement. Improvement.

So don't take any of the critiques personally, because at the end of the day, we're just trying to get better because that will allow us to provide better hearing healthcare for our patients. And lastly, the instructor provided timely feedback if I made a mistake. So rather than waiting too long to say, okay, last week you did this, but I want you to think about the mistake that you made that might not be fresh in the student's mind. They might not even realize that they made a mistake. So now all of a sudden, they're trying to think about something they might not be remembering clearly, and now they might be a little bit more anxious because they didn't realize they made a mistake.

Whereas if you talk about things in the moment, you can adjust it. One of my favorite things to teach students early on is my preference for taking ear mold impressions and how I like to do things in a certain way. And I explain the why behind what I'm doing. So patients have two ears. If they need two ear mold impressions, then I'll take one and show them what I'm doing, have the student do the other side and then talk about what they did well or areas where they can improve and patient's ears are plugged up.

You can provide that feedback right then and there. And I know I said don't provide it directly in front of the patient, but if they're not hearing it, kind of privacy, right? So these are just little examples of how you can incorporate productive feedback immediately to your clinical students. Supportive approach. So this kind of ties in what we talked about with that positive feedback as well.

The supportive approach is important for building psychological safety and confidence for your students. Instructor warmth really fosters comfort. I think about my second clinical placement that I ever had whenever I was a graduate student. And at this placement, I worked with three different instructors. We had one instructor who, I joke, was the Mr. Rogers of audiology.

Always kind, willing to answer my questions, never judged me for the mistakes that I made, only wanted to see me get better. I love those days when I was working with him because I felt more confident and I knew that if I didn't made a mistake, it wasn't going to be the end of the world. I had another instructor that I was deathly afraid of because if you did something wrong, he was going to call you out on. And there was no filter from the feedback that this person provided. And while his goal was to build the best audiology student possible, it didn't feel like it was a very supportive approach.

And the biggest difference, looking back on things now after doing this project was the person that I loved working with used a lot of reassurance and validation, saying, okay, we've done this before, I've seen you do it, I know you can do this. Or if a mistake was made, he would say, okay, great, I want to see you improve the next time we do it. And when the same thing would pop up. I remember the first time I had to do a stinger test, couldn't remember how to do it. It was my second semester, he showed me.

And then the next time we had an asymmetric loss, he said, okay, we showed you. I'm expecting you to be able to do it. That was such a good, rewarding experience for me because he knew that. He just taught me how to do it. He knew that I had some familiarity and he was expecting me to be able to do it because he believed in my ability, abilities.

It went off without a hitch. And I will be forever grateful for that clinical instructor, for the confidence that he instilled in me. And this was one of the themes I was thrilled to see pop up, because that reassurance and validation hit such a deep nerve within myself that when I had a not great experience,

I remember how nervous and anxious I was. And I felt like that did not help me when I was working directly with patients, whereas when I was working with the other clinical instructors, I felt confident every single day walking into that clinic. And this first quote, I think could be said of that same gentleman, where it said, the clinical instructor is always so positive and encouraging.

And I appreciate how patient the clinical instructor is with me in clinic if I am unsure about it. When you are working with students, it is easy for them to pick up whenever you might be having a bad day or if you're feeling annoyed by them. Working with students can be stressful, it can be time consuming, and the last thing you want to do is to have your students feel like they are a burden to you. So if you are giving the impression that working with them is a pleasure, that you enjoy being able to support them in their educational journey. That's going to give them a much, I think, better level of confidence working with you, a much better attitude.

Coming into the clinic, learning from my own mistakes, where a student is expected to say, look, I'm going to make, make mistakes. I'm a student, I'm still learning. And that's okay because my instructor, instructor feels the same way. The next one, guiding me to an answer instead of giving me an answer kind of builds into developing and engaging student thought as well as a supportive approach. So this is one of the things I mentioned that I do that drives my students nuts, is whenever they ask me a question, I will ask them further questions to try to help them come up and find the answer on their own rather than just answering it and moving on.

Sometimes developing that deeper learning is going to be more enriching for the student and develop better long term retention as well. And then the fourth one here asked after each patient if there were any questions or concerns. This way you're giving the student an opportunity to bring up anything that might be bothering them, anything that they're unclear about. This way you're not leaving them with any ambiguity of what they just experienced or what they would be expected to do moving forward. And

then the last question, quote, quote was allow me to try and give my best attempt, was able to show me the correct way to do things and explain things thoroughly.

So again, allowing that student to have that scaffolded autonomy, showing them the correct way to do things if something wasn't done quite right, or just demonstrating the action of what you expect them to do and then explaining the why behind it. Again, you're showing the student, I'm here to be your clinical instructor. Here's what we expect, here's how we do things. Try it yourself and it doesn't work. That's what, okay, we'll step in and we'll correct it and give you another opportunity later on.

And then lastly here our teaching strategies. So this would include things like demonstration, modeling and troubleshooting. This allows us to provide structure, goal driven guidance for the students to say, okay, we are expecting you to do certain things and we're going to help you get there. So we might model it for you with a patient, we might show you how to do things before you even bring the patient back or when things go wrong. We'll show you how to correct those items.

And the big tip I have for this is turn your downtime into teachable moments. For the specialty clinics that I work on with the va, which includes vestibular testing, auditory processing disorder testing, we do tend to have a higher rate of no shows for those appointments than we do for just standard audiometric evaluations or hearing aid fittings. So if a patient cancels or no shows, I love to take that time to use that for demonstration and modeling for our students. So that would way even though they might be missing out on an experience directly with the patient, they're still getting that opportunity to learn about the topic that we were planning on covering if the patient was in the clinic. So our quotes for this one is the clinical instructor taught me how to troubleshoot when the results were not what we expected.

So this is great. Say you have a patient who has had stable hearing loss forever and all of a sudden now they have an asymmetric loss and they didn't report any change in hearing. Maybe you think, okay, let's what would you do next? Rather than just taking the results as is, you teach them. Try a different

transducer.

Check the transducer you have. Make sure that maybe the insert earphone you're using to test the hearing aid is still or test the person's hearing is still properly placed. Or if a hearing aid you're running in a test box isn't working, make sure it's still coupled that you know it's able to measure the gain. So this way you're teaching the students rather than than expecting when problem develops that the instructor will give you the answer you're thinking, okay, let's troubleshoot. Let's figure out what went wrong and why it went wrong.

Second one, allow for independence, but made me think through my reasoning. Again, this is what I talk about when it comes to like game planning. Say, okay, what is your plan with this patient? What do you want to do and why do you want to do it? Third quote, demonstration of skills and repeat demonstration explanations as needed.

Because just because we show a student how to do something once, if we model it or allow them to try it once, and maybe it doesn't go according to plan, we can repeat that demonstration and give the student the repetition over and over again in order to help them develop and make their skills as good as they possibly can be for their current level in the educational program. Quote number four, the co. I'm sorry, I'll say cochlear implant. The clinical instructor would demonstrate a skill and then let me try diet example. She would do the first year on an ABR and then let me do the second year.

So this is a great way of Showing demonstration, modeling and scaffolding independence all in one. And then lastly, this quote, this could be, maybe even somebody was speaking about me. I don't know. If our patients do not show up for their appointments, we always find something else to do and for me to learn about that day. For instance, one morning, all of our patients canceled.

It was probably a snowy day in Pittsburgh. So we worked on how to repair ear molt in house, which is something I really needed practice with and enjoyed learning how to to do. Again, this kind of goes back to my clinical education. I remember early on I knew that I wanted to work with older adults. I did not have much of an interest in the pediatric world, and I had an amazing placement at a school for the deaf.

And the clinical instructor I had, I had known her for a while, and she knew that I wasn't necessarily keen on the pediatric world. So she asked me, what do you want to learn about this term? Or what skills do you feel like you need to develop? And I told her I had a big interest in FM technology at that time, but I, I didn't have any experience. So she tailored a lot of the students that we were working with that were students that were using FM systems, so I could see how that they were fit, how they were verified and troubleshoot FM systems.

And I felt so confident working with FM systems after that placement that I, I told her, for the rest of my career, I never felt as confident about one specific item in audiology as I did with you from that placement. So even though it wasn't with the demographic I knew I wanted to work with, I could still take what I learned in the moment and apply it for future use. So that's a great way to build this theme of the teaching strategy to learn more about what the students need to learn, what they want to learn, and build it into your clinical education moments. So the students feel that they are being heard and that their experience is rewarded and basically just being enriched as strongly as possible. So those are our five themes.

But the thing is, those themes are not fully independent. All of these themes had some form of code that overlapped across themes, showing that many of the themes that students need are going to be interconnected in nature. So a student might have like one or two different themes that are most important for them, but there's going to be things that overlap. So it's all interconnected. We can't just

put each theme into its own silo and say, okay, the student needs scaffolded autonomy as part of independence.

That's the only thing we're going to work on? No, it might be scaffolded autonomy because they need to be receiving some supportive approach and engaging student thought as well. So that's just one example of how the themes can come in together. And the best opportunities for effective clinical education likely occur when multiple teaching strategies are integrated simultaneously. So when you're thinking about working with your students, think about these five themes and how they might be incorporated together and how you can use that as a clinical educator in order to improve the student experience.

Now, one of our aims was comparing this to other research. What we found was as much as we love our audiology students and think they're all special and unique, they're very similar to students from other disciplines. So looking at other disciplines like nursing, medicine, speech, language pathology, the findings we had very similar to what they had. And one of the things we were doing our literature review came up as interesting was it actually lines up well with students that are in law programs as well. So even future lawyers are seeing some of these same themes to a degree as the audiology students.

More importantly, the results that we had are consistent with other CSD research indicating that durable themes in clinical education. This was something that Laura Danvers and Mark de Reiter came up with in 2024 that durable themes in clinical education include independence, feedback, reflection and support. This tied in nicely to what we had as part of this project as well. So this just shows there are universal principles of effective teaching that are beneficial for all students receiving clinical education, regardless of their discipline. Our hope is that people outside the field of audiolog also find our results from this project to be informative and hopefully advantageous for them to take advantage of as well for

their clinical teaching opportunities.

So putting it all together, what do you need to do when it comes to being a more effective clinical educator for your students? Number one, set your expectations early. Have a meeting with the student before you see your first patient or on their very first day in the clinic where you can learn about what they feel confident in and and what areas they feel like they need to be improvement have improvement on. Also want to make sure that the student knows what is going to be expected of them. That way you don't have reality and expectations not being aligned and that leads to frustration from both the clinical educator and the students perspectives.

You want to scaffold autonomy? I'm a big believer in it. First, show the students how to do things in a way that you want them to do it or you think makes the most sense to do things or in a way, way that aligns with your clinical practices for your work environment. And then allow the student to gain independence throughout the term and adjust that autonomy. If a student is struggling with a certain aspect or topic, they might not be able to become fully independent by the end of the term, but that's okay.

They might be more independent than where they started, even if it's not where you want them to be. And other things, they might actually do very well and end up being independent faster than what you could have expected. Expected. You want to create a safe learning environment for the students. So communicate directly with the student in private and don't only provide feedback to the students.

Universities, if you're working with students, you might have to complete midterm and final evaluations. This should not be the only time that feedback is being provided. You should be having routine meetings with the students. So that way the feedback that you're providing to the university are things that students already know about. You want your feedback to be clear and you want it to be encouraging as well.

So again, tell the student before you give them feedback. I'm going to give you feedback right now. Make it clear, make it encouraging, talk about the things to be improved and then end with something positive again. And then encourage reflection. Have the students think about what they've done, develop that engagement of thought within the student.

Because if they can think about what they're doing at a deeper level, that hopefully will make them stronger clinicians in the future and, and help guide them towards independent practice. So there are some tools that are available. There are numerous reflection forms that students can use. Supervision checklists. A lot of what we provided today is from some work that Dr. Elaine Mormer did where she developed some checklists that you can use from the references that are included at the end.

Meet with your students at the start of the term, meet with them at the end of the clinical day, talk to them after you wrapped up with a patient, talk to identify what clinical instruction methods are preferred by the student. And you might have to tailor your educational strategies based on what the students need versus what you might want to give them. And a lot of times there's a midpoint where you can take what they need, what you're comfortable with, blend it together and leads to the best outcome for the student. And again, meet with the students consistently do these follow ups. So that way if a student's just doing something in a behavior you want to modify, you can do that right away and you will modify your clinical instruction.

Techniques as the student grows throughout the term. What about our future plans for this? Well, again, this was just a snapshot, one moment in time of one cohort of students. We would love to expand this to other AUD programs to see if this is the same across the country from other AUD programs and the students that they have. We would love to look at this longitudinally as well to see if there's a difference based on these themes and the codes for how a student would respond when they're a first year student versus a second versus a third year student.

We could also incorporate mixed modeling research to see if there are other factors which might allow us to predict what strategies the students perceive as most clinically effective for them. Because you might talk to a student about some of these themes and they might not have the self awareness or maybe have even thought about what is going to be best for them. So if we could find a mixed model approach to say, okay, if a student has these personality traits, they likely will need a certain theme more than one versus the other. We also want to take a look at how international students and international universities compare to what we have here. So luckily we applied for some funding and got it to do research at the University of Cape Town.

So we will be conducting this research and hopefully publishing this in 2027. So thank you to Dr. Nikki Keaton from the University of Cape Town for agreeing to allow us to do this with her institution. So it will be really interesting to see how the students in the US compared to international audiology students. And lastly, we want to show why AI is not a great tool for reflexive thematic analysis research. So I know we're getting a little short on time, but just a little spoiler.

We did run this through some AI and it was not clear, it was not concise, it was not clean, the themes were all over the place, a lot of the themes were overlapping. So AI is not a tool yet that I would rely on for doing any type of reflexive thematic analysis. So it'd be really cool one day to do a session talking about how the AI AI qualitative approach is different versus the people that have the hands on experience like Dr. Mormer and I, to show what those differences are and things that we may have missed in an analysis because we have bias or things that AI wasn't able to detect because it doesn't have that innate knowledge of working with students for decades like we have. So thank you for your time. The Q and A is open if anybody wants to ask any questions.

And again, if you're like me and never raised your hand once in class, ask is you were just very shy and awkward as a student. Please feel free to email me here at DPJ4Pitt.edu and I will be happy to answer

any questions you have. And again, thank you to the Audiology Online team for having me and allowing me to share this work. It's something that I'm very passionate about. Never thought I'd be here, but it's been such a wonderful experience getting to learn about this topic, working with one of my favorite people, Dr. Elaine Mormer, and hopefully adding in an area that we felt like was a research desert when it comes to looking at student perspectives.

So thank you again for your time. Thank you Dr. Jedlicka. I've never heard a presentation like this before, so I was thrilled. I have so many notes here of things that I'm going to use just as a manager. I don't see students, but I think so much of what you talked about just applied to managing people in general.

I loved it and now I'm going to start using what questions do you have every day of my life instead of do you have any questions? That was just a little tip takeaway so I don't see anything coming in from the Q and A, but I just want to ask the folks still in the room if you supervise students and you found something that you can take away with your students, I would like to see your reactions. Use the React button on your Zoom toolbar and give me a thumbs up if you are going to take away something from this with your students. We would love to have you back as this research evolves. Exciting to hear that about Cape Town and seeing those thumbs up come in.

Thanks everybody. We'll leave the Q and A open for another minute to find out what questions you have and I will just also remind everyone it takes a few minutes after the course ends for the live webinars for the exam to come into your kind of takes about 15 minutes, but if you are earning CEUs make sure you take the post activity exam and not seeing anything come in except for those thumbs up. Thanks Everybody. Thanks again Dr. Jedlicka and wish everybody a great rest of your day.