Opinions on characteristics of good clinical teachers in veterinary training

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1. ABSTRACT

1.1. BACKGROUND

Which characteristics make a veterinary clinician a good clinical teacher? Characteristics of good clinical teachers have been studied in human medical education. This research led to seven domains that are important for a clinical teacher: role modelling, task allocation, planning, feedback, teaching methodology, assessment, and personal support and behaviours. Because no research has been done on this topic in veterinary medicine, it is still unclear which are the key characteristics of a good veterinary clinical teacher. More insight in the characteristics of good clinical teachers could be useful in personal development of clinical teachers.

1.2. OBJECTIVES

The aim of this study is first to investigate the students' opinion, junior teachers' opinion and the opinion of experienced teachers holding a Senior Teaching Qualification about characteristics of a good veterinary clinical teacher and second to define whether there are differences in the opinions on characteristics of good clinical teachers.

1.3. METHODS

Between September and November 2019, semi-structured interviews were conducted with eleven senior teachers, twelve junior teachers, and nine master students, working or studying in one of the three clinical departments of Veterinary Medicine on Utrecht University: the department of Clinical Science of Companion Animals, Department of Farm Animal Health, or the Department of Equine Sciences. Participants were asked which characteristics they considered to be important for good clinical teachers and if they could prioritize those characteristics. All interviews were transcribed, coded and analysed using template analysis, until a final template was created.

1.4. RESULTS

Participants mentioned characteristics of good clinical teachers that could be categorised in five domains: personality traits, didactic skills, communication, planning and organisation, and veterinary expertise. To create a safe learning climate for students, traits like faith in students, enthusiasm, empathy, and approachability were often mentioned. Didactic insight,

'giving students responsibility', providing adequate feedback, challenging students, student involvement in the process of clinical reasoning, providing tools, and keeping discipline were considered to be important didactic skills in all three groups. Personality traits and didactic skills were mentioned by all thirty-two participants, while communication, planning and organisation, and veterinary expertise were mentioned by twenty-two or twenty-one of all thirty-two participants. No major differences in opinions on the characteristics of clinical teachers between groups of participants were found.

1.5. CONCLUSIONS

It could be concluded that, in veterinary training, personality traits, didactic skills, communication, planning and organisation, and veterinary expertise are key domains for good clinical teachers. No major differences were found between the opinions of students, junior teachers, and senior teachers.

2. INTRODUCTION

During the degree program (master) Veterinary Medicine on the Utrecht University, students spend a majority of their time on clinical rotations in the university clinics (companion animal clinic, farm animal teaching clinic, and the clinic of equine medicine). All students have to choose one of these tracks and participate in the clinical rotations of their choice, but also in a basic clinical rotation at the other two university clinics. In this clinical setting, students get the opportunity to examine patients and discuss cases with the clinicians in an educational setting. Some of the clinicians hold a Senior Teaching Qualification (STQ), meaning that, in addition to their teaching responsibilities, they also have a leading role in the development of the education provided ("Teaching Qualifications," n.d.). Other clinical teachers working in the university clinics, may have a Basic Teaching Qualification ("Teaching Qualifications," n.d.) or no teaching qualification at all. Because the clinical rotations are an important part of the veterinary education, it is important that the teaching in the clinics is performed by well skilled clinical teachers. In human medicine clinics, this topic was elaborately studied and reviewed in different clinical settings (Irby et al., 1991; Irby, 1995; Sutkin et al., 2008; Seabrook, 2013). The veterinary teaching clinic most closely resembles an outpatient or ambulatory care setting, so reviews and studies of teaching in this setting give an idea of the qualities of good clinical teachers. Irby et al. (1991) studied characteristics of effective clinical teachers of ambulatory care medicine. A panel of experts observed attending physicians and interviewed medical students and residents to identify behavioural characteristics of effective teaching. With these results, a survey was created about teaching effectiveness, that clustered teacher behaviour in seven different factors. Medical students and residents had to fill in the survey about the most recent clinical teacher they met during their clinical training. It was observed that the most influential characteristics on teaching effectiveness were instructional skills (active involvement, clarity of expectations, and stimulation of interest) and role modelling. This is in line with the descriptions of excellent teachers in a literature review by Irby (1995); excellent

teachers were described as physician role models, effective supervisors, dynamic teachers, and supportive persons. Similar characteristics were described in another review that describes excellent teachers as inspiring, supporting, actively involving, and communicating with students (Sutkin et al., 2008). Some key points for effective teaching in an outpatient clinic were combined to address practical tips for clinical teachers by McGee and Irby (1997). In a study to assess teachers' concerns about the clinical teaching context, semi-structured interviews were used to define the opinions of medical teachers, but the themes included in these interviews were only about the students, the infrastructure for teaching and the teachers' relationship with the medical school. Characteristics of the medical teachers themselves were not discussed (Seabrook, 2003).

Various instruments are used to assess clinical teachers in human medical university clinics. Thirty-two instruments were reviewed by Fluit et al. (2010). They considered seven domains of clinical teachers to be relevant: role modelling, task allocation, planning, feedback, teaching methodology, assessment, and personal support and behaviours. None of the reviewed instruments covered all relevant domains. In 2012, Fluit et al. developed and validated an instrument to assess clinical teachers: the EFFECT (evaluation and feedback for effective clinical teaching) instrument. EFFECT covers the seven domains that were considered to be relevant: role modelling, task allocation, planning, feedback, teaching methodology, assessment, and personal support and behaviours. These are linked to the CanMEDS (Canadian medical education directives for specialists) roles, which are seven competencies for human medicine clinicians: medical expert, communicator, collaborator, leader, health advocate, scholar, professional (Frank & Danoff, 2007). The competency profile for veterinary clinicians also consists of seven competencies: veterinary practice, communication, cooperation, entrepreneurship, health and welfare, academic practice and personal development (Bok et al., 2011). These competencies are similar to the CanMEDS roles, so it is expected that the characteristics of good veterinary clinical teachers are also similar to those of human medicine clinical teachers. If so, the EFFECT instrument would cover the domains important to assess veterinary clinical teachers as well and it could be a useful instrument in veterinary training in the clinical workplace. No research has been done, however, on the characteristics of veterinary clinicians that make clinical teaching effective, so it is still unclear if characteristics of good clinical teachers in human medicine are also important for good veterinary clinical teachers.

Therefore, the aim of this study is first to investigate the students' opinion, junior teachers' opinion and the opinion of experienced teachers holding a Senior Teaching Qualification about characteristics of a good veterinary clinical teacher. Second, this study aims to define whether there are differences between the three groups in the opinions on characteristics of good clinical teachers.

3. METHODS

3.1. STUDY DESIGN

An exploratory, qualitative research was done by using semi-structured interviews to gather information about the opinions of students, senior teachers and junior teachers on characteristics of good clinical teachers. A pilot study of three interviews with employees of the University, interested in Quality improvement of Veterinary Education was used to define and improve interview questions.

3.2. SELECTION OF PARTICIPANTS

Between September and November 2019, participants were interviewed. From a list of employees of the Veterinary Medicine faculty in Utrecht, who hold a Senior Teaching Qualification, all persons who were active as clinical teachers at that moment were asked to participate in the interviews. These senior teachers were teaching in the clinical rotations of one of the three masters of Veterinary Medicine: clinical science of companion animals, farm animal health or equine sciences. From these departments, all clinical teachers who had graduated from Veterinary Medicine less than six years before the start of the research project, were defined as junior teachers and they were also asked to participate in the interviews. Students who had finished at least one year of clinical rotations, were asked to participate in the interviews by messages on the students site, social media and through personal approach. The number of senior and junior teachers were a limit for the amount of interviews that could be conducted in these two groups. In the group of students, interviews were conducted until saturation was reached. This was achieved, when new interviews did not lead to new data anymore, so it was assumed that conducting more interviews would not lead to new information (Morse, 1995). Saturation was checked during the process of data analysis; when the analysis of new transcripts did not lead to changes in the final template, saturation was confirmed.

3.3. INTERVIEW DEVELOPMENT

The interviews were semi-structured, using one main question:

- Which characteristics do you consider to be important for a good clinical teacher?

Depending on how elaborately the participants responded to this main question, additional questions were asked to identify more characteristics. The main additional questions were:

- Can you think of an example of a good clinical teacher, which characteristics make him/her good?

- Can you think of an example of a bad clinical teacher, which characteristics make him/her bad?

Also, the participants were asked whether they could prioritize the characteristics they mentioned.

1.4. ANALYSIS

The interviews were transcribed and the transcripts were analysed using software for qualitative data analysis (NVivo 12 PRO). An initial template was created based on the characteristics found in earlier research in human medicine. The template was modified during the process of data analysis, adding codes and constructing themes. This resulted in an extensive list of codes, which were categorised into themes. This template was discussed with two experts in veterinary medical education. Based on their expertise input, the final template was constructed, consisting of five themes into which all characteristics could be categorised. This template was used to describe all characteristics mentioned by participants. For each characteristic, the numbers of senior teachers, junior teachers and students who mentioned this characteristic as important for good clinical teachers were compared, to identify differences between their opinions. These differences in numbers were described, and not statistically analysed.

RESULTS

Thirty-two participants were interviewed: twelve junior teachers, eleven senior teachers, and nine students (see table 1). All three groups consisted of participants from the three different master tracks.

Category	Number of participants
Junior Teachers	12
Senior Teachers	11
Students	9
Total	32

Table 1. Numbers of participants in each group

The data collection and analysis resulted in five important domains of characteristics of good clinical teachers: personality traits, didactic skills, communication, planning and organisation, and veterinary expertise (see table 2 and appendix 1). These domains are discussed in this section; all characteristics belonging to one domain, are listed in a table, including the numbers of participants who mentioned the characteristics. Later on, all characteristics are discussed briefly. Another theme that was mentioned by participants from all three groups, was 'appreciate the diversity of teachers'. This could not be categorised as a characteristic of a good clinical teacher. These participants said that it is good for student learning to experience many different teachers, with different characteristics. It is good to appreciate the diversity of teachers and make use of it. Some teachers are appreciated for their calmness, while others motivate students through their energy. One junior teacher defined this as follows:

'I think it is good for the student to be exposed to different types of teachers. So, another important thing for teachers is: do what feels good to you, be yourself and teach in a way that suits you.' – Junior 12

Although some characteristics are in contrast with each other, all of them can be categorised in the previously mentioned themes. These themes are clarified in this section; from each theme, all including characteristics are discussed from most to least mentioned. No major differences were found between the opinions of students, junior teachers, and senior teachers. Some minor differences are discussed in this section. Nine participants could not prioritize the characteristics they considered to be important. The other twenty-three participants did prioritize the characteristics, and the characteristics that belonged to the (to them) three most important characteristics, are visible in appendix 1.

Domain	Number of participants mentioning characteristics in this domain (n = 32)
Personality traits	32
Didactic skills	32
Communication	22
Veterinary expertise	22
Planning and organisation	21

Table 2. Numbers of participants mentioning characteristics in each domain

4.1. PERSONALITY TRAITS

Personality traits are relatively enduring characteristics within the individual that influence interactions with their environment. All characteristics mentioned by participants, that can be interpreted as personality traits, are described in this section. Nineteen traits were mentioned by participants, although some of them are closely related to each other (see table 3). Most traits were mentioned as important to create a safe learning climate for students, so that students feel comfortable to speak up and ask questions and share their ideas.

Personality trait	Students (n = 9)	Junior Teachers (n = 12)	Senior Teachers (n = 11)	Total (n = 32)
Faith in students	8	6	7	21
Enthusiastic	7	7	4	18
Empathic	3	6	7	16
Respectful	5	4	6	15

Approachable	4	8	2	14
Patient	4	5	2	11
Eager to learn	2	7	2	11
Calm	3	6	1	10
Confident	2	3	4	9
Honest	2	6	1	9
Helpful	4	3	2	9
Open	3	3	3	9
Stress-resistant	5	1	2	8
Self-conscious	0	4	3	7
Kind	5	2	0	7
Humorous	3	4	0	7
Flexible	0	1	3	4
Modest	0	1	1	2
Energetic	0	1	0	1

Table 3. Numbers of students, junior teachers and senior teachers mentioning characteristics in the domain 'personality traits'.

4.1.1. Faith in students

Many participants noted that it is important for a good clinical teacher to have faith in students. Clinical teachers have to be able to let students actively participate in clinical service and patientcare and to do so, they have to 'let go'. Teachers noted that there is less control when you let students do things than when you do it yourself, for example during blood sampling. Junior teachers less frequently mentioned 'faith in students' as an important characteristic than senior teachers and students did. These junior teachers also seem to find it more difficult to let go than senior teachers. Only one of the junior teachers explicitly said that it is important to intervene only when it is absolutely necessary, whereas the seven senior teachers who mentioned 'faith in students', all stressed the importance of 'not intervening'. The other five junior teachers who mentioned 'faith in students', said that it is sometimes difficult for them to trust students, because in the end, the teachers are responsible if anything goes wrong.

'I think on the one hand, maybe you have to trust students, but on the other hand, you'll unlearn to be too trusting soon enough as a clinical teacher. Sometimes strange things happen and in the end it's our responsibility ... it's quite difficult as a

4.1.2. Enthusiastic

Enthusiasm was mentioned by participants from all three groups as an important characteristic of a good clinical teacher, mostly by students. Enthusiasm was mentioned most when asked to prioritize the characteristics (seven participants named enthusiasm in their top three characteristics). Both enthusiasm about your profession as a veterinarian, and enthusiasm in teaching students are important to keep students enthusiastic and motivated.

4.1.3. Empathic

Sixteen participants from all three groups named empathy for students to be important for a good clinical teacher. They considered it important to be able to put yourself in the shoes of the student, to comprehend that things that seem so evident to you, can be really difficult for a student and that some situations can be very stressful for students, although they might not show it.

4.1.4. Respectful

Fifteen participants from all groups mentioned a respectful attitude of clinical teachers towards students as an important characteristic of a good clinical teacher. Eleven participants who mentioned this characteristic, noted explicitly that it is important to position yourself next to students, instead of above them. Clinical teachers should treat students as colleagues rather than as students.

4.1.5. Approachable

Being approachable was noted frequently as the most important characteristic of a good clinical teacher. Senior teachers and junior teachers mentioned that students should feel comfortable to speak up and approach teachers. These teachers acknowledged that quite often, they have to try really hard to let students say what they think, while these teachers want to share thoughts and say that 'there are no stupid questions'. Students also recognise that they do not always feel comfortable to speak up.

'Not all teachers are approachable. Most of them say 'you can't give wrong answers' or 'just say what you think', but still there's an ambiance that makes you feel like everything you do or say, has to be perfect. Sometimes you're trying really hard, but you're just on a wrong path, and then teachers assume you're not prepared and judge you. The ambiance is negative immediately. And then you're scared to say anything, afraid to make mistakes.' – Student 1

For participants who mentioned approachability as an important characteristic, it seemed difficult to describe, what makes a person approachable. It is a feeling and very personal. It is also not clear if approachability on itself is really a personal trait, or a combination of traits

that make a person approachable. Some characteristics that make a person more approachable, mentioned by participants, were kindness, respect, enthusiasm, and humour.

4.1.6. Patient
Another personal trait which was mentioned frequently, was patience.

> 'I think patience is very important, for a nice working environment for yourself, but also for the student, to give the student space to make mistakes, as long as it's not going to be a problem for the patient.' - Junior 1

Students are new to many things they have to do in the university clinics, and they are much slower than the clinical teachers themselves. So it demands a lot of patience of clinical teachers to give students time to practice. Students say they feel very uncomfortable and might forget important things when teachers are impatient.

4.1.7. Eager to learn
To improve their own teaching, teachers need to be eager to learn. This characteristic was named mostly by junior teachers, and less by senior teachers and students. Most of the junior teachers and students named asking feedback from students as a way to improve their teaching, while the two senior teachers who mentioned eagerness to learn, meant participating in courses for teachers.

4.1.8. Calm
This trait was mentioned frequently together with patience, but it covers more than only patience towards students. Especially junior teachers often noted that it is important to be calm, and to exude calmness. They thought that if a teacher cannot stay calm, students will feel restless too and perform worse. In the interviews with students, this idea was confirmed; one third of the students named calmness as a characteristic of good clinical teachers. They noted that they take over the restlessness of teachers and feel that they can concentrate less on what is important. Only one of the eleven senior teachers mentioned calmness as an important trait for a good clinical teacher.

4.1.9. Confident
Clinical teachers have to be confident, they have to show that they know what they are doing and that they are doing the right thing. This was mentioned by participants from all three groups, but mostly by senior teachers. Some of these senior teachers also noted that this is often difficult for junior teachers, because junior teachers have less experience and might have more doubts than senior teachers with more experience. These senior teachers also said that because of that, junior teachers are also less open to students when they ask something the teacher does not know. According to senior teachers, more experienced teachers are so confident that they care less when there is something they do not know, because they know they do not have to know it. None of the junior teachers acknowledged that this is indeed true. Some even said they thought junior teachers might be more open to

students about things they do not know than senior teachers, because students expect less knowledge from junior teachers than from senior teachers.

4.1.10. Honest

As discussed above, honesty about possessed knowledge might differ between junior and senior teachers. But this honesty is appreciated by students, and students as well as teachers acknowledge that a clinical teacher loses students' respect when they are not honest. Students notice when teachers are not answering the question and try to hide that they do not know, so it is better to be honest about it. It might also help for students to know that even teachers do not know everything either, so it is okay if there is something you do not know.

4.1.11. Helpful

Participants from all groups, but mostly students, mentioned that it is important that teachers are willing to help. Especially in the beginning of the clinical rotations, when students mostly do not have any experience yet, they would like to get more guidance from clinical teachers.

4.1.12. Open

Students appreciate it when clinical teachers are open. This openness includes being open about one's own experiences, also bad experiences or mistakes teachers have made. This shows the vulnerability of teachers, but can give students a feeling of reassurance that they do not have to be perfect. Also being open to the visions of students and different approaches is considered to be important for clinical teachers. Everyone can have his or her own way to do or explain something and students cannot know everyone's way. So being open to the ideas of students might show that their way is also a good way.

4.1.13. Stress-resistant

Five out of nine students noted that they consider stress-resistance to be important for a clinical teacher. They said that when a clinical teacher is stressed, they lose some of their other qualities; teachers can behave ruder and more chaotic when they feel too much pressure. Some teachers also recognize stress-resistance as an important characteristic, but only two senior teachers and one junior teacher did mention it.

4.1.14. Self-conscious

Being conscious of your own knowledge and expertise was mentioned only by teachers, and not by students. The junior teachers who mentioned self-consciousness, noted that it is important for them to know the boundaries of their knowledge and if there is something they do not know, they can ask a senior teacher. Senior teachers also mentioned that they are there to help junior teachers, and that it is a quality of junior teachers to have this self-knowledge, but they also noted that senior teachers have to be self-conscious too, they also cannot know everything.

4.1.15. Kind

Especially students, and two junior teachers, mentioned kindness explicitly as an important characteristic of good clinical teachers. Being kind contributes to a pleasant ambiance in which students are able to learn more.

4.1.16. Humorous

A remarkable characteristic that was mentioned in particular by students and junior teachers, but not by senior teachers, was humour. One junior teacher even named this characteristic as the most important characteristic of a good clinical teacher. Humour was mentioned as a way to create a more relaxed ambiance and to make oneself more approachable as a teacher.

4.1.17. Flexible

This characteristic was only mentioned by teachers; one junior teacher and three senior teachers acknowledged that to be able to help every student in a way that suits them, you have to be flexible.

> 'Every case is different, every owner is different, and every student is different. You have to anticipate all these differences, and that requires some flexibility from you as a teacher.' – Senior 10

4.1.18. Modest

When a junior teacher was asked to think of examples of good clinical teachers, this junior thought of a senior teacher who is much appreciated for being very modest. One senior teacher mentioned modesty.

> 'Some teachers, me too, we'd like to show students how good we are and impress them with our skills. But I think if you can manage to hold that back, to do a step back and play a modest role, in the end that's the good clinical teacher.' – Senior 6

4.1.19. Energetic

Whereas calmness was mentioned by nine participants, only one participant said that a clinical teacher has to be very energetic, this junior teacher said:

> 'Energetic, so a little ADHD, you have to be like a Duracell battery that's always full of energy. That helps in motivating students.' – Junior 3

4.2. DIDACTIC SKILLS

Didactic skills are described as skills or strategies of teachers that help students learn the most during their clinical rotations. This includes didactic insight, giving students responsibility, feedback, challenging students, involving all students in the process of clinical reasoning, providing tools, and setting boundaries (see table 4).

Didactic skill	Students (n = 9)	Junior Teachers (n = 12)	Senior Teachers (n = 11)	Total (n = 32)
Didactic insight	6	5	11	22
Giving students responsibility	7	6	8	21
Feedback	4	8	9	21
Challenging students	5	4	9	18
Involving all students in the process of clinical reasoning	6	8	4	18
Providing tools	4	1	6	11
Setting boundaries	2	3	2	7

Table 4. Numbers of students, junior teachers and senior teachers mentioning characteristics in the domain 'didactic skills'.

4.2.1. Didactic insight

The domain didactic skills consists of seven different characteristics, from which didactic insight was named most. This is the ability of a teacher to estimate what a particular student needs to move on to a higher level. It might help if you know students' learning goals, so some participants also noted that it is important to know what the learning goals of students are and to focus on these learning goals. This includes learning goals provided by the faculty, and personal learning goals of the student.

> 'You have to be able to assess students' capabilities, so assessment skills are important.
> And then you also have to know what you have to do with it, so how to motivate
> every type of student.' - Student 2

This quality was mentioned by participants from all three groups, but mostly by senior teachers.

4.2.2. Giving students responsibility

Another characteristic that was frequently mentioned, was the ability to give responsibilities to students. This didactic skill was mentioned more by students and senior teachers than by junior teachers. Junior teachers and senior teachers noted that students do not feel responsible, if a teacher does not give them responsibility. This didactic skill requires faith in students, because it is not easy to let go of things you are responsible for. Students however, learn most when they feel responsible. When asked to prioritize the characteristics

at the end of the interview, four participants mentioned this quality in their top three characteristics.

> 'Maybe the most important thing is to give a student responsibilities, to let them feel responsible. So you have to dare to let it go, to let students do things, for which you're responsible in the end … but also, you have to push a student a little bit out of his comfort zone, to make him take some extra responsibility, which he wouldn't take if you would let him choose. But that's the point where he starts to learn new things.' - Senior 1

4.2.3. Feedback

The ability to provide adequate feedback was mentioned by participants from all three groups as an important didactic skill. Taking time to give feedback and giving qualitative good feedback were noted separately, but many participants mentioned it together. So, for a clinical teacher it is important to take time to give feedback and give time to students to respond and ask questions if they need to. Some said they really appreciate it when a clinical teacher takes a moment to have a one-to-one feedback conversation with a student. Also, it is important that negative as well as positive feedback is given, and that negative feedback is given in a constructive manner. Students said they do not only want to hear what they did wrong, but they also need to know how they can do better next time. The ability to provide adequate feedback was mentioned more by teachers than by students.

> 'For me it's important that a teacher gives personal feedback. And it's very important for the self-esteem of students that teachers give positive feedback as well, so not only mentioning things that go wrong. I think the ideal situation is when a teacher takes time for a small feedback conversation. It doesn't have to be long, but it's nice to receive feedback face-to face, one-to-one.' - Student 1

4.2.4. Challenging students

Another important didactic skill, that was mentioned by eighteen different participants, mostly students and senior teachers, was challenging students to think and learn. To accomplish this goal, most teachers ask specific questions in return to students' questions, instead of simply answering their questions. Teachers follow this strategy to stimulate students to think and find answers in their own knowledge. It may also result in more confidence, because the students realize they know the answers. Most teachers hope that it will also result in remembering it better. Two teachers (one senior teacher and one junior teacher) also noted that they try to stimulate students to learn and look for information by giving them assignments, for example when students do not know enough.

> 'When I notice that students didn't prepare well enough, or if there's something they should have known, I tell them to look it up at home and send me the information. I'm not sure if students appreciate that, because I give them extra work, but I just want to push them a little bit, to make that extra step, and I hope that in the end, they remember it better.' – Junior 8

A senior teacher also noted that a safe learning climate is important, but that does not mean that students always have to feel comfortable. Sometimes they really need that extra stimulation to do just a little bit more and they will not always feel comfortable if you try to push them to it.

'Sometimes a student just has to feel irritated, or pushed, and feel like 'I will show what I can do, I will prove myself.' That's what I'm trying to accomplish, and of course, students need to feel safe enough to prove themselves. But that stimulation, it doesn't always feel nice.' – Senior 2

4.2.5. Involving all students in the process of clinical reasoning

To stimulate students' learning, clinical teachers need to involve them in the process of clinical reasoning. To do this, teachers have to be able to explain clearly and in a structured manner. Some teachers and students noted that it is appreciated when a teacher uses visuals to clarify their explanation. Also, linking their explanations to clinical cases and showing the relevance of the clinical knowledge was said to work well in making students remember the subject material. Most of the time, some students are naturally more involved and more present in discussions than others, and those others can become quiet and not involved in discussions at all. A good clinical teachers manages to involve those 'quiet' students in the conversation as well, for example by personally directing specific questions at them.

'I think it is important to involve the students in clinical reasoning. You have to explain clearly, of course, but I also think it is important, to prioritize, to know what's important, what's relevant for them to know. Maybe you can combine it with practical examples or link it to clinical cases, so it feels more relevant to students as well. That makes them remember it better.' – Junior 3

4.2.6. Providing tools

As clinical teacher, you can help students learn by providing tools for them on how to study or how to find the information they need. It is appreciated when teachers tell students they have to look for information about a certain subject, that they also tell them where they can find it, for example in which study book, or in which articles. Some teachers also provide extra information, in forms of extra video material, images, quizzes, etc. That makes it easier for students to study, and makes it more efficient.

'Some teachers just say: 'you have to look that up.' But sometimes we really don't have a clue, and it really helps when a teacher tells us where we can find it, in which book for example. Some teachers even print an article for you, or tell you about a video on YouTube or something, that's really nice.' - Student 3

4.2.7. Setting boundaries

The ability to balance 'treating students equal to yourself' on one hand and to set clear boundaries on the other hand, was mentioned by seven participants. As clinical teacher, you have to make boundaries clear and make sure students respect them. And it is okay to be

strict, as long as it is righteous. Students, too, agree on this. Two students explicitly mentioned that teachers have to be strict as well, and that they have to be clear on what is appropriate and what is not.

4.3. COMMUNICATION

Twenty-two participants mentioned clear communication as an important skill of good clinical teachers. At first, they mostly just said that communication is important. When they were asked more specific what is important for them in communication, most of them named 'expressing expectations' to be the most important. Apart from that, speaking understandably was also mentioned (see table 5).

Communicative skill	Students (n = 9)	Junior Teachers (n = 12)	Senior Teachers (n = 11)	Total (n = 32)
Expressing teachers' expectations of students	8	7	3	18
Speaking understandably	2	1	1	4

Table 5. Numbers of students, junior teachers and senior teachers mentioning characteristics in the domain 'communication'

4.3.1. Expressing teachers' expectations of students

Eighteen participants from all three groups noted that it is important for a clinical teacher to express your expectations of students. Students said they feel lost when they do not know what a teacher wants from them, and every teacher wants other things. Junior teachers and senior teachers recognize that, and also note that for teachers themselves, it is also useful, because students are more likely going to do what you want them to do, if you tell them what it is that you want. So this works in both ways and it is best to make your expectations clear soon enough, when you first see them. Students noted that, especially in the university clinic for companion animals, it is not unusual that they do not see their teacher at the beginning of the day, before the patients arrive. Some clinical teachers do take time to meet students and tell them what they expect from them before they are starting their examinations, and that is much appreciated.

> 'It is important to tell students what you expect from them. You have to realize that they have to work with somebody else every day and the expectations differ too.
> That can be very confusing.' - Senior 1

4.3.2. Speaking understandably

From each group of participants, one of them mentioned that a clinical teacher has to speak clearly, they have to be understandable, and sometimes that means that you need a quite loud voice. It is remarkable that these three participants were all working or studying in the university clinic for horses. The student noted that especially when they are discussing

patients in the stables, some horses can make noise, for example by scraping their hooves. This rumour sometimes results in teachers being inaudible, so they have to be able to speak loud enough. Speaking of understanding, two students said that for them, language is important as well. One student preferred a Dutch-speaking clinical teacher, and the other student said that a clinical teacher has to speak Dutch or English fluently, without a strong accent.

4.4. VETERINARY EXPERTISE

Most participants also see a clinical teacher as a role model. Clinical knowledge, experience, and being a competent veterinarian/role model are different categories that were mentioned by students and clinical teachers (see table 6).

Veterinary expertise	Students (n = 9)	Junior Teachers (n = 12)	Senior Teachers (n = 11)	Total (n = 32)
Veterinary knowledge	6	7	5	18
Clinical experience	3	4	4	11
Competent veterinarian/role model	0	2	5	7

Table 6. Numbers of students, junior teachers and senior teachers mentioning characteristics in the domain 'veterinary expertise'.

4.4.1. Veterinary knowledge

Knowledge of what you are teaching is, of course, a condition for being a good clinical teacher. You cannot teach students, if you do not master the subject material completely yourself. Eighteen participants mentioned this explicitly to be important for a clinical teacher and for five of them, it was in the top three of important characteristics. Some students also said they notice when teachers do not know enough, and those teachers quickly lose a lot of respect from students. Some participants noted that for clinical teachers, it is also important to know what happens 'in the field', because veterinary medicine in the university clinics can be quite different from the practices where students end up after their studies.

4.4.2. Clinical experience

A clinical teacher may have all the veterinary knowledge you expect from them, but clinical experience is something different. Participants noted that clinical teachers need to have experience at the very least in the subject they are teaching, but it is even better if teachers can come up with practical examples as well. Students look up to clinicians who have many examples from clinical cases they encountered and share them with students.

4.4.3. Competent veterinarian/role model

Apart from knowledge and experience, being a competent veterinarian is, clearly, important too. Teachers also have to keep in mind that they have to be a good example for students, not only in their technical skills and decisions, but also in their attitude towards owners, colleagues and animals. A role model does not necessarily have to be a person who 'shows how good he is', however. It is also important to show your vulnerability, and to show that you are still learning too. That is a good example for students as well.

> 'You have to realize that you're the example. And you want students to learn from a good example. So, when you're in a bad mood, that happens, you still have to push yourself and not show it. You have to work super hygienically, examine patients completely … and in clinical reasoning, too, don't jump to conclusions, show that there's logic in your thinking.' – Senior 7

4.5. PLANNING AND ORGANISATION

Some participants mentioned that clinical teachers do not have much time to teach students. In line with this, it is not surprising that planning and organisation skills are also important for good clinical teachers. Skills that were mentioned by participants are structured working, clear task allocation, keeping overview, planning moments for education, and, more broadly, the development of education (see table 7).

Planning and organisation	Students (n = 9)	Junior Teachers (n = 12)	Senior Teachers (n = 11)	Total (n = 32)
Structured working	2	3	2	7
Clear task allocation involving all students	4	1	1	6
Keeping overview of students and patients	1	3	0	4
Planning moments for education	2	1	0	3
Being involved in the development of education	0	0	2	2

Table 7. Numbers of students, junior teachers and senior teachers mentioning characteristics in the domain 'planning and organisation'.

4.5.1. Structured working

Teachers as well as students noted that keeping structure in your work is important for a clinical teacher. It makes it easier for students to follow your clinical exams and thinking processes. It is appreciated when you provide structure for students, for example in how you

organise the day; there are moments for examination, discussion, explanation, etc. If there is no structure in the organisation, it can become too chaotic and overwhelming for students. Also, a broader structure, over a longer time period, can help students. One junior teacher, who graduated recently, recalled a department where the overall structure was really clear, and every time students came back to that department, they knew what to do and what was going to happen.

4.5.2. Clear task allocation involving all students

In the university clinics, there are more students than patients. This may cause students who do not have their own case, to be less involved and as a result learn less. To prevent that from happening, teachers can involve those other students by giving them other tasks to do, for example observing the other student and name two 'tips and tops'. It is also possible to divide a patient between multiple students, one senior noted.

> 'You know, sometimes you have three students and one patient. Then I always try to appoint one as 'chief owner', one as 'chief clinical exam', and one as 'chief differentials', for example. Otherwise one is doing everything, and the other two are just standing there, doing nothing.' – Senior 11

4.5.3. Keeping overview of students and patients

Having an overview of what is happening where and what needs to be done is important, because clinical teachers have to see and treat their patients, and it is not unusual that multiple patients are treated at the same time, especially in the clinics for companion animals and horses. At the same time, the clinical teacher has to take into account that students learn enough, so that demands good planning skills of the clinician.

4.5.4. Planning moments for education

Some teachers really plan moments for extra education, for example when it is a calm morning without too many patients. Of course, this depends on the department where a teacher's working, but two students noted that some teachers really take this time to teach students about a certain subject, while others just leave students alone or cancel the whole morning. These two students said they really appreciate the ones who take time to explain extra things, and that it also creates a moment to ask other questions students still had in mind. One junior teacher also named some teachers who take time to teach students about extra subjects, apart from the cases of that day. So this 'skill' may not be within reach for every clinical teacher, due to lack of time, but it is appreciated when it happens.

4.5.5. Being involved in the development of education

Two senior teachers noted that a clinical teacher should also be involved in the development of education. One mentioned that teachers should develop readers, extra information sheets, or extra videos, for example. The other teacher explained this characteristic more as 'if you don't like the way your education is organised, you should change it'. This was not mentioned by junior teachers or students.

5. DISCUSSION

5.1. MAIN FINDINGS AND RELATION WITH OTHER LITERATURE

Five important domains of characteristics of good clinical teachers were found during this research project: personality traits, didactic skills, communication, veterinary expertise, and planning and organisation. In previous research by Fluit et al. (2012), characteristics were categorised into seven different domains: role modelling, task allocation, planning, feedback, teaching methodology, assessment, and personal support and behaviours. Most of these domains could be considered as similar to the five domains we found in our study: task allocation and planning are both included in the domain 'planning and organisation', and feedback and teaching methodology are taken together in the domain 'didactic skills'. Role modelling is similar to veterinary expertise and personal support and behaviours are covered in 'personality traits'. The only remarkable difference is that 'assessment' is not an alone-standing outcome in our study, whereas it is one of the seven domains that Fluit et al. considered to be relevant. In the review of Fluit et al. (2010), the 'assessor role' is described as the clinical teacher assessing the performance of a trainee, using different assessment tools, in order to make go/no go decisions. Some participants in this research mentioned assessing students' performance in order to give the students directed feedback or personal assignments. Also, assessing students' knowledge was mentioned as an important part of didactic insight, necessary to decide what students need from a clinical teacher. All of these forms of assessment are directed at stimulating students' learning and not at making go/no go decisions. Other research of characteristics of good clinical teachers in human medicine education did not lead to assessment as key characteristic either. It was mentioned in the review of Irby (1995), but not in the review of Sutkin et al. (2008), nor in the research of Irby et al. (1991). A possible explanation for not finding 'assessment in order to make go/no go decisions' as a characteristic of a good clinical teacher in our study, is that assessment in the master degree program of veterinary medicine at Utrecht University, is based on programmatic assessment (Bok et al, 2018). During clinical rotations, students are required to collect workplace-based assessments from clinical teachers, based on performance observations. The assessment information is collected in a digital portfolio, and after two years and at the end of the program, a high-stake decision is made by two independent members of an assessment committee, based on the workplace-based assessment (Bok et al, 2018). The participants who mentioned this digital portfolio during the interviews, mentioned this assessment system as a way to give feedback, rather than as an important tool to assess students' performance. Eventually, these workplace-based assessments are used to decide if students pass or not, so the assessor role is implemented in the veterinary training program, although participants did not actively think of this role as important for a clinical teacher. It might be useful for clinical teachers to be more aware of their role as assessor as well, although that did not result from the interviews in our study.

5.2. IMPORTANCE OF DIFFERENT THEMES

All thirty-two participants named at least something that could be categorised as a personality trait or didactic skill, while the other categories (clear communication, veterinary expertise, and planning and organisation) were named by twenty-two participants or less. So it is assumed that, according to junior teachers, senior teachers, and students of Veterinary Medicine at Utrecht University, didactic skills and personal traits are the most important domains of characteristics of good clinical teachers. These were also mentioned most when participants prioritized the characteristics they considered to be important. Nine participants could not prioritize the characteristics, because they considered every characteristic they mentioned as important as the others. The other twenty-three participants who did prioritize the characteristics, all mentioned at least one personal trait in their top three. Didactic skills were mentioned by twelve participants, veterinary expertise by seven participants, clear communication by four participants, and one participant named keeping overview, categorised as 'planning and organisation' skill in the top three. This insinuates that personal traits are the most important group of characteristics of good clinical teachers. That is hardly surprising, because the participants were asked to name characteristics of clinical teachers, and not to name skills. However, participants did not mention only personality traits, but also skills, and these skills are interesting enough to study as well. Eventually, all skills could probably be linked to a personality trait, and the most important traits could be studied.

Personality traits are studied elaborately, and many classifications of traits are used. The most accepted model for personality traits is the Five Factor Model, in which they are categorised in five domains: conscientiousness, agreeableness, extraversion, emotional stability, and openness. Scheepers et al. (2016) studied how personality traits affect the work engagement of human medicine clinician-supervisors and subsequently their teaching performance in residency training. They concluded that extraverted, agreeable, and particularly conscientious supervisors showed more engagement with their teacher work, which was positively associated with their teaching performance according to residents. Agreeableness describes how well people get along with others (McCrae & John, 1992). Many of the traits that were mentioned during interviews in our study, can be linked to agreeableness (helpful, approachable, modest, empathic, patient, respectful, faith in students, and kind), so that is in line with the results of Scheeper et al. Conscientiousness also covers domains that were mentioned frequently; conscientiousness is described as the tendency to control impulses, act dutifully and strive for achievement against measures or outside expectations. Conscientious people excel in their ability to work within the rules, and plan and organise effectively (McCrae & John, 1992). So, planning and organisation skills and veterinary expertise (mentioned by twenty-two participants) might be related to conscientiousness, as well as the traits self-conscious and honest. Energetic, enthusiastic, and humour are characteristics of extraverted people, but calmness is more related to introversion, so it is difficult to say that in our study, it can be concluded that extraversion is also related to good clinical teaching. In the research of Scheeper et al., openness to new experiences and emotional stability showed no association with the quality of teaching.

Flexibility, eagerness to learn and openness are traits that can be categorised as 'openness to new experiences', but were not mentioned frequently (less than ten participants). Emotional stability covers stress-resistance and confidence, those traits were not mentioned very frequently either (stress-resistance by eight participants and confidence by nine participants). These findings suggest that emotional stability and openness are not the most important traits of a clinical teacher, according to students, junior teachers and senior teachers of the Utrecht University. These findings are all suggestions however, and no conclusions can be drawn without further research.

5.3. DIFFERENCES BETWEEN OPINIONS OF STUDENTS, JUNIOR TEACHERS AND SENIOR TEACHERS

No major differences were found between the opinions of students, junior teachers and senior teachers on characteristics of good clinical teachers. Students seem to consider it more important that a clinical teacher exudes faith in students, is enthusiastic, helpful, stress-resistant, and kind. Junior teachers seem to care more about calmness, and eagerness to learn, while senior teachers more frequently mentioned confidence as an important trait for a good clinical teacher. It is remarkable that the traits mentioned most by students, apart from stress-resistance, can all be categorised as agreeable in the Five Factor model, while the traits mentioned more frequently by teachers do not relate to agreeableness, but to one of the other factors. These findings suggest that teachers care more about how to stimulate students' learning, whereas students care more about how they are treated by a clinical teacher. When looking at methods to teach students, junior teachers more frequently mentioned 'involving all students in the process of clinical reasoning' than seniors, and more senior teachers mentioned challenging students than junior teachers did. These results suggest that senior teachers more often try to let students think and get answers on their own, while junior teachers are more involving students in their way of thinking. However, challenging students and involving them in the process of clinical reasoning do not exclude each other, so a good clinical teacher should be able to do both.

5.4. STRENGTHS AND LIMITATIONS

This qualitative study, using semi-structured interviews, is a valid method to explore opinions on characteristics of good clinical teachers. It gives a good idea of characteristics that are important to students, junior teachers and senior teachers of the master program of Veterinary Medicine at Utrecht University.

A potential limitation of this study may be that it was conducted only at the Veterinary Medicine Faculty of Utrecht University, and it might not be possible to extrapolate these findings to other veterinary faculties.

This study included students and teachers from the three different tracks. Possible differences between the opinions of participants from different tracks were not studied. All students who were interviewed, experienced basic clinical rotations from the two other clinical tracks than the one of their choice as well, so they could think of clinical teachers

from all tracks. The teachers, however, and especially the senior teachers, did not experience clinical teaching in another department than their own for a long time. It is possible that for teachers of equine sciences, other characteristics would be important than for teachers of one of the other two tracks. These possible differences were not studied and it is assumed that the characteristics found in our study, are important to all clinical teachers in veterinary medicine.

Some participants noted at the end of the interview that although they could not think of other characteristics of good clinical teachers, they had probably forgotten to mention some characteristics they did find important. However, it is unlikely that participants forgot to mention the characteristics that were most important to them, and as the goal of the interviews was to identify the most important characteristics, that goal should have been achieved. Also, it is plausible that different participants forgot to tell different characteristics, but they probably did not forget to mention the same characteristics, thus the possibility that important characteristics were missed in this study, is negligible.

The interviews were conducted, transcribed, and analysed by one person. Other researchers might have coded the interviews differently, because it is subjective how a certain part of the transcript is coded, to which theme something belongs. To improve the validity of the research project, it would be good to have a second researcher code an interview and to analyse if there are substantial differences between the two. This was not feasible, however, but the final template was discussed with two experts on veterinary clinical education, and the codes within this template were clarified by explaining examples of quotes from participants. Agreement was achieved, and it is assumed that the transcripts are analysed as objectively as possible and that another researcher would not get any different results.

5.5. SUGGESTIONS FOR FUTURE RESEARCH
This list of characteristics could be validated by conducting a research project to assess clinical teachers of veterinary medicine. It could be assessed if they possess the traits and skills described in this paper, and if that correlates with the quality of their teaching.

5.6. IMPLICATIONS
Assuming that this is a complete list of characteristics of good clinical teachers, teachers could use this list for personal and professional development as a clinical teacher.
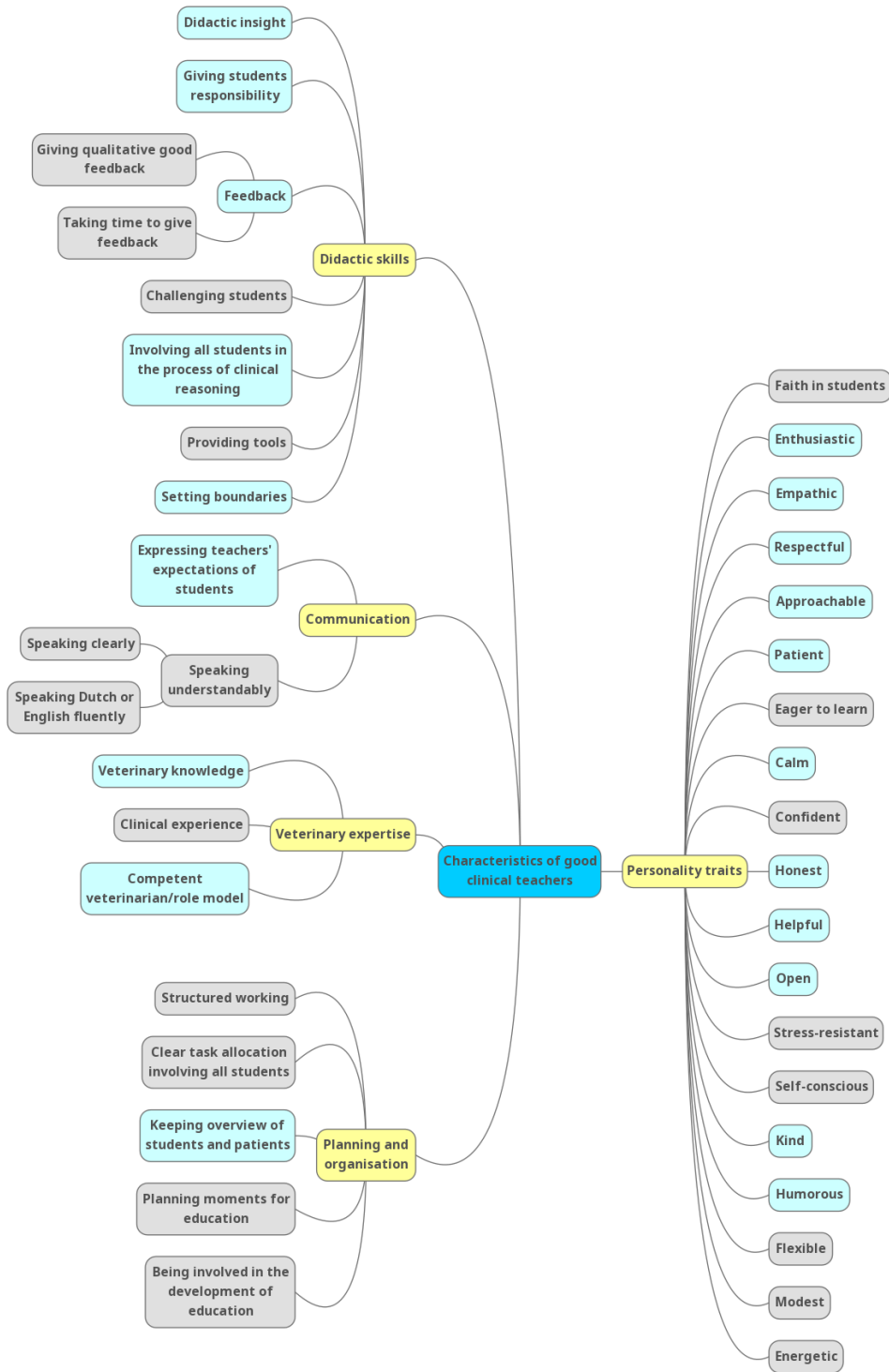
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8. APPENDIX

Appendix 1. Mind map of all mentioned characteristics, categorised into five domains. The characteristics in light-blue were mentioned by participants as one of the three most important characteristics (nine participants could not prioritize characteristics).