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The hidden curriculum of veterinary education: mediators and moderators of its effects

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## **Abstract**

The “hidden curriculum” has long been supposed to have an effect on students’ learning during the clinical education process, and in particular to shape students’ ideas of what it means to be a professional. Despite this, there has been little evidence linking specific changes in professional attitudes to its individual components. Combining observations with semi-structured individual interviews, this study aimed to recognise the components of a hidden curriculum at a UK veterinary school that led to a change in students’ professional attitudes, as well as identifying the attitudes most affected. Student views of the importance of technical competence and communication skills were promoted as a result their interaction with the hidden curriculum during their clinical rotations, and tensions were revealed in relation to their differing attitudes towards the importance of compassion and empathy, autonomy and responsibility, and lifestyle ethic. The assessment processes of rotations and the clinical service organisation served to communicate the messages of the hidden curriculum, bringing about changes in, or mediating, student professional attitudes, whilst student selected role models and the student rotation groups moderated the effects of these influences. The primary message of the hidden curriculum was to emphasise the importance of technical competence over, and at the expense of, all other aspects of the professional role.

## **Key words**

attitudinal research; clinical education; hidden curriculum; professionalism; veterinary education

## **Introduction**

Professional studies are now an accepted part of modern clinical education. Their inclusion in the formal curriculum aims to address a perceived decline in moral characteristics, such as altruism, as well as growing concerns over the ever-increasing commercial pressures placed on clinicians. Formal education in professional, non-technical skills is believed necessary to prevent the breakdown of medicine's social contract; otherwise how can the health professions be trusted to regulate themselves if they are likely acting in their own self interests rather than for the greater good (Crues and Crues, 2006; Van Mook et al., 2009)? Although some have questioned whether the health professions have ever actually achieved such selflessness or if this is simply a case of misplaced nostalgia (Hafferty and Castellani, 2010), empirical studies have revealed a concerning decline in student moral reasoning and empathy over the course of their medical education (Self et al., 1993; Newton et al., 2008), particularly during their clinical years (Chen et al., 2007; Hojat et al., 2009), and at the institution under study the authors established a decline in the perceived importance of altruism with career stage of veterinarians (Roder et al., 2012).

One of the challenges facing medical and veterinary educators is the lack of a consensus on what constitutes professionalism (van Mook et al., 2009; Mossop, 2012). Although it is widely acknowledged that technical competence alone is insufficient, the other components of "professionalism", lying in the non-cognitive domain (van Mook et al., 2009), are contested. Some of the debate over the definition has been attributed to

generational differences (van Mook et al., 2009), and, within veterinary medicine, recent trends including the feminisation of the profession (Lofstedt, 2003; Heath, 2004; Roder et al., 2012), an increase in specialised referral practice, and changes in regulations relating to practice ownership (Roder et al., 2012). Within medical education, recent work by Castellani and Hafferty (2006) suggests that the lack of agreement is due to the complexity of professionalism, leading them to conclude that multiple perspectives exist dependent on how an individual practices medicine and therefore prioritises key aspects of their professional work. The same argument could also be made in a veterinary context where a plethora of ways of practising has emerged, for example in terms of speciality (from academic to specialist-clinician to general practitioner) and in terms of the types and range of interpersonal interaction required (solitary laboratory work through to consultations with clients and their pets).

Accepting that different members of the same profession may hold different views depending on how they practice, and that this may lead to a lack of consensus over which non-cognitive attributes should be included in the teaching of professionalism, it is perhaps unsurprising to discover that formal teaching of professionalism rarely produces the desired lasting effects (Jha et al., 2007). A general assumption in education is that there is a direct correlation between what is taught and what is learnt by the student. However, this has been shown to not always hold true (Coulehan, 2005), especially in cases where what is to be learnt is not clearly defined (Kapp et al., 2012). If students are left unsure after their formal education, they are more likely to develop attitudes about acceptable professional practices from their real-world experiences;

namely their interactions within the clinical setting and the hidden curriculum (Howe, 2002).

The hidden curriculum within this context sits alongside both the formal curriculum, identified as planned and documented content, teaching and evaluation, and the informal curriculum, identified as the unplanned, opportunistic teaching that takes place as a result of encounters with clinicians leading to unplanned discussions surrounding the particular cases seen in the clinics (Wear and Skillicorn, 2009). It has been defined by Hafferty (1998) as, 'a set of influences that function at the level of organisational structure and culture, buffeted by external forces and internal integration,' and has been recognised as being communicated through the student-teacher relationship, behaviour of staff and students, reward and punishment systems, institutional structure, and government education policies (Dreeben, 1976; Cornbleth, 1984).

Despite a new wave of interest in the subject (Mossop, 2012; Whitcomb, 2014), there is still very little published regarding the hidden curriculum of veterinary education, particularly in comparison to medical education, where much of the focus has been on the enculturation process of young professionals (Hundert et al. 1996), together with their professionalism and professional identity formation. In this regard, there has been considerable interest in the interactions students have with role models during their clinical training (Hundert et al., 1996; Coulehan and Williams, 2001; Lempp, 2002; Hilton and Slotnick, 2005; Wear et al., 2006; Tekian, 2009; Wear and Skillicorn, 2009; Park et al., 2010; Karneili-Miller et al., 2010).

Much of the early work on the hidden curriculum of medical education, which has many similarities with veterinary education in the English-speaking world, relied on anecdotal evidence of its existence, and, although more recently researchers have applied qualitative research techniques to reflective tools such as student essays (Rogers et al., 2012), and professionalism journals coupled with discussion (Karnieli-Miller et al., 2010), there is still little empirical work that has attempted to identify specific components of an institution's hidden curriculum that affect the professionalism of its students. The aim of this study was to establish the effects of the hidden curriculum, present within the clinical year of a single institution, on students' developing views of professionalism. This was addressed through three research questions:

- 1) What changes occur in student views of professionalism during the course of their intra mural (clinical) rotations (IMR)?
- 2) What are the prevailing messages communicated through the hidden curriculum experienced during IMR?
- 3) How are these messages communicated?

## **Methods**

### ***Setting***

This study took place at the Royal Veterinary College (RVC), University of London, and followed students on the five-year Bachelor in Veterinary Medicine (BVetMed) program, graduating in 2012. The RVC is the largest of the UK providers of clinical

veterinary education, with an annual intake of over 240 students, and employs over 70 clinical educators across its three on-site hospitals.

The BVetMed course is undergraduate entry, with the majority of students entering straight from high school. The first phase of the formal curriculum consists of courses focused on the organ systems, with parallel, longitudinal professional studies classroom elements. As in similar medical curricula, this includes elements such as the social contract that frames the professions, codes of practice, professional ethical reasoning, business ethics, communication and interpersonal skills such as leadership and team-working, empathy, informed consent and shared decision-making. From the third year onwards, organ systems modules are concerned more and more with abnormalities and their treatment, and the students experience increasing clinical exposure. Clinical education comprises 26 weeks of Extra Mural Studies (EMS) in non-affiliated veterinary practices and 28 weeks of Intra Mural Rotations (IMR), based on 1-2 week placements in each of the various clinical services offered by the on-site RVC hospital services, from radiology to anaesthesia, dermatology to surgery.

The IMR are split into 22 weeks of core rotations, which every student must complete and pass, and a further 6 weeks of elective rotations where students can pursue a rotation of particular interest for them, for example, oncology. On all rotations, students receive one of four grades: distinction, pass, borderline or fail, in each of three categories: professionalism, technical knowledge and practical skills. For the compulsory 22-week core, the students remain with the same group of 3-5 students. Students choose their elective blocks which, together with clinical project choices,



dictates the order in which they will complete the rotations. Additionally, in this cohort, students were also able to select two other students to be in their group, as well as indicate any student they wished to avoid. This study focused on their experience during these core intramural rotations.

### ***Research design***

As with many social theories, the theory of the hidden curriculum lacks empirical research (Mason, 2006) and, as such, there is no single established methodology for its analysis (Tekian, 2009). It is recognised that the study of the hidden curriculum is the study of the lived experience (Jackson 1968) - in this context the students' experience of the final year clinical rotations of the BVetMed programme - and that research of this nature is multi-faceted (Mason, 2006). In an attempt to understand the complexity of the issue, and provide multiple perspectives from which the problem could be viewed, a mixed qualitative methods approach was chosen. This consisted of observations and semi-structured interviews used for complementarity, each identifying and measuring overlapping but different facets of the same phenomenon (Greene et al., 1989). The detailed design was approved by the RVC Ethics Committee.

### ***Sample***

Sampling for the study was purposive, in that we aimed to embrace all student and staff types in terms of attitudes to professionalism and moral reasoning previously identified in the academic community under study. Suitable candidates for both the observations and interviews were chosen based on their responses to a survey designed to identify their view of professionalism (Roder et al., 2012) and their approach to moral reasoning

(Quinn et al. 2012). The previous study, by Roder et al. (2012), identified four clusters of views of professionalism within the institution. These were broadly recognised as aligning with Castellani and Hafferty's (2006) groups, comprising: those displaying a naïve view (cluster 1); those experiencing dissonance (cluster 2); those valuing professional dominance, with a somewhat nostalgic view (cluster 3); and those valuing their autonomy (cluster 4). The study by Quinn et al (2012) identified different priorities given to "justice", "care of animals" and "care of people" in moral reasoning associated with ethical dilemmas. We therefore chose the sample to include representatives of all four of the professionalism clusters, as well as individuals representing justice and care orientations to making meaning for the purpose of moral reasoning and decision-making (Gilligan and Attanucci 1988).

The primary investigator (CR) observed eleven student groups across five core IMR rotations, with each group being observed for two, 3-hour blocks on each service. With regard to the students' professional cluster membership, groups were either homogenous or heterogeneous in their composition, ensuring that diversity in both student characteristics and group dynamics were represented. To observe how students were affected by interactions with staff of similar and differing professional attitudes to their own, we chose the five service rotations based on the cluster membership of the teaching staff, identified from the previous study by Roder et al. (2012), again ensuring all the four identified views were represented. We chose to focus only on the core rotations experienced by all students as part of their clinical learning, and only chose those rotations in which students would have direct contact with both

animals and their owners as it was thought these would maximise opportunities for observing acts of professionalism.

Following the observations, the same researcher (CR) conducted the semi-structured interviews with 23 students, with a minimum of three students representing each of the four identified views of professionalism, and from each of the justice and care orientations to moral decision-making, selected. Where possible, to maximise complementarity, the students interviewed were from the groups observed but, due to issues with availability, it was necessary to substitute some of these individuals with others holding the same professional profile, as identified through their survey results.

### ***Procedure***

During the observations, the researcher (CR) took the role of an embedded but silent observer, remaining detached from, yet sympathetic towards, the group in order to access genuine behaviours (Cohen et al. 2011), a method recognised as naturalistic participant observation. This was made easier as the researcher had had no prior contact with the students in a teaching or assessment capacity, and with a background in education, rather than veterinary science, was not in a position to provide students with help or guidance with their learning. The selected students were observed continually during the two 3-hour periods for each selected service, with data collected during consultations, clinical procedures and rounds, whilst on wards administering treatments and during husbandry duties, and also during less formal moments such as tea breaks. The only time observations were suspended was during simulations as this was deemed formal teaching and, therefore, outside the boundary of this research. To

remain minimally intrusive the researcher took simple field notes, including noting contextual details (Mason 2006), before expanding these into a personal reflection of the observed events immediately following the end of the observation. Particular attention was paid to 'critical incidents' that may have taken place (Cohen et al., 2011).

The individual, semi-structured interviews with students complemented the information gathered from the observations (Robson, 2011). All interviews were conducted face-to-face, so that the researcher could note non-verbal cues and explore these further where appropriate. With the interviewees' consent, the conversations were recorded and later transcribed for analysis. The final anonymised transcripts were returned to the interviewees for approval before analysis began.

### ***Data Analysis***

Data from the observations were combined with the interview data and analysed by the primary researcher (CR) using thematic analysis, to capture and interpret the meaning of the text (Spencer et al., 2014). The analysis was grounded in the data, but went beyond a simple description of the findings to look for patterns between respondents (Mason, 2002) and the factors that may have led to these (Braun and Clarke, 2006), including questions related to 'who' and 'why' (Miles and Huberman, 1994). Initial coding of the data relating to professionalism used the terms identified by Castellani and Hafferty (2006), adopted for use in the previous institutional study on views of professionalism (Roder et al. 2012), as a form of directed content analysis. However, where it was found these failed to capture, fully or in part, the emerging concepts and themes relating to how the students talked about professionalism, they were either

revised or new codes developed. Following the initial open coding, and discussion with the second author, an experienced clinician who had not been present during either the observations or interviews, selective coding reduced these codes to a few core categories (Robson, 2011).

## **Results**

Following thematic analysis of both the interview and observation data nine codes were identified, initially split under two headings: aspects of professionalism affected by the IMR experience, and environmental and contextual factors affecting those professional skills and attributes (see Figure 1).

The five codes related to aspects of professionalism were then further sub-divided into those aspects that dominated the students' discourse on the subject and formed the majority of the activities viewed in the observations, *technical skills* and *communication skills*, and those where the researcher recognised conflict or tension in how the students spoke about them or reacted to their experiences, *compassion and empathy*, *lifestyle ethic*, and *autonomy and responsibility*. Under environmental and contextual factors, four codes emerged: *the clinical service organisation*, *assessment*, *role models*, and *the students' rotation group*. Initially classified into two sub-divisions, systems and people, these were then renamed in light of how they were seen to operate as mediators and moderators of the hidden curriculum; the mediators of the hidden curriculum, *clinical service organisation* and *assessment*, bring about either a positive or negative change in student views, and the moderators, *role models*, and *the students' rotation group*,

protect or expose the students to the influences of the mediators. The mediator and moderator terminology has been adapted for this purpose from its use in both the natural sciences and social psychology, whereby a mediator variable is one that accounts for a relationship between two variables, whilst a moderator variable affects the strength or direction of this relationship (Baron and Kenny, 1986).

### ***Important aspects of the professional role***

One of the most prominent themes that emerged from the interviews was that students considered communication skills, and in particular good clinician-owner communication, extremely important to their role as a professional.

“I’ve seen people who communicate really well with the clients, and the way it helps them, and then people who communicate really badly...even though what they’re saying may be right, they’re still not listening because of the way they’re saying it.” (F12)

There was clear evidence that there is a change in their perception of the importance of communication skills during IMR. When reflecting on earlier communication and professional skills teaching, students recognised their prior dismissal of these areas.

“A lot of people are just like, ‘it’s not what I’m here to learn. I’m here to learn vet stuff and all clinical.’” (M5)

In part this appeared to relate to a false confidence students had in their ability to handle situations that tested their professionalism in advance of the rotations, with any prior

concerns linked to communicating accurate information, not the communication process itself. In reality, however, students often showed signs of nervousness during client communications, for example physically shaking or avoiding direct eye contact.

In contrast to their changing view on the importance communication skills during the course of the rotations, students were relatively consistent in their perception of the importance of technical competence to their professionalism, some even believing the two to be synonymous. They rated the usefulness of a rotation on its contribution to their technical knowledge, and under observation appeared enthusiastic, if not competitive, during opportunities to further their skill development. This is in contrast to their attitudes towards improving their non-technical skill, with students showing a preference for rotations that provided didactic seminars in quiet times over those that provided opportunities for teamwork or observation of others.

### ***Sources of tension with professionalism***

Three areas of the professional role were identified as sources of tension either because of the polarised views students held or demonstrated, or, in the case of *autonomy and responsibility*, because of the tensions they perceived between their learning environment and the “real world”.

Regarding *compassion and empathy*, students were divided. Some considered it a fundamental part of the professional role, expecting staff to demonstrate compassion and empathy, not only towards animals and owners, but also towards the students. These students were left disappointed when observed practice fell short of their

expectations, reinforcing their resolve to behave differently when faced with similar situations.

“...we had to put a dog to sleep, and the lack of empathy that the vet was, he was so cold about putting this dog to sleep in front of the owners who were crying...I’m going to vow to try to never forget that and put myself in their shoes.” (F15)

For other students, maintaining a degree of detachment from both the animal and its owner allowed them to focus on the technical side of their role. A directly observed example of this was students palpating the enlarged, fluid-filled stomach of a distressed cat that was euthanised just minutes later. Some staff, in their relationships with the students, also modelled the prioritisation of the importance of learning over compassion and empathy. On several occasions students felt that they were unduly punished for the learning they had missed as a result of family bereavements and other extenuating circumstances.

Similarly, students were divided on their thoughts regarding the *lifestyle ethic* expected of someone entering the profession. Despite a near consensus of opinion amongst the students on the exhausting nature of the rotations, they were split as to whether this was an accurate portrayal of their future career, or merely a by-product of conducting a majority of their rotations in a specialist referral hospital. Those that saw being a veterinarian as a vocation expected nothing less than to give themselves wholeheartedly to the profession, and were often students for whom being a veterinarian was a lifelong ambition.



“I understood when I went into rotations that I’d basically, wasn’t going to have a life...I went into this whole university course knowing that I wanted to be a vet and knowing that, as a vet, I’d have to do out of hours and unsociable hours and everything...which doesn’t bother me because it’s what I want to do.” (F4)

The desire for a more balanced lifestyle ethic was more evident in comments made by mature students. Many of these students chose to sacrifice their originally preferred career path for a more fulfilling personal life. For these students, clinicians in predominantly referral hospitals were considered inappropriate role models as they did not demonstrate this balance.

“It’s hard here because most of the staff members you encounter are specialists and I don’t want to be a specialist. I don’t want to work those sort of hours and I don’t want to basically live life just through work...It’s hard to look at that and be like, ‘I want to be like you,’ because actually I don’t.” (F13)

There was evidence that some, recognising the lifestyle ethic tension, were able to take evasive action to protect themselves in both the short and medium term. Some planned breaks in their rotation schedule to reconnect with friends and family, whilst others had undertaken a radical rethink of the most appropriate career progression for them.

The final aspect of the professional role over which there was perceived tension was *autonomy and responsibility*. Whilst students welcomed the level of autonomy and responsibility they were afforded during their time as a student, they were conscious of

the “unrealistic” setting in which they were learning; that of a referral hospital with access to the latest tools in diagnostic testing and in which a majority of patients were funded by insurance.

“...you never think about [how much things cost whilst you’re on rotations] you do what’s best for the animal. The animal’s health is your goal. It’s not like when you have a boss breathing down your neck telling you how much everything costs.” (F14)

### ***Mediators of the hidden curriculum***

The assessment processes and the clinical service organisation employed for the rotations were both influential over students views of professionalism. For each clinical service, students were awarded a grade and given feedback in the three areas of their practice: technical knowledge, practical skills, and professionalism. However they found the experience inconsistent across the three, viewing the assessment of the latter as lacking an evidence-base when compared to the other two. Whereas the students were observed explicitly demonstrating their practical skills and technical knowledge to their assessors during rounds and procedures, due to the clinical service organisation, they were rarely accompanied by a member of staff during their interactions with clients, something they believed was a key indicator of their professionalism.

“I haven’t had a single clinician watch any of my consults. Or, like, they always say, ‘client communication is good,’ but I don’t know how they know that because they haven’t observed it.” (F14)

This, together with their view that the terminology used in the grade descriptors for professionalism was too subjective, allowed them to dismiss negative feedback or poor grades as the staff not knowing what they were doing. These problems were exacerbated in instances when all rotation group members received the same feedback, but diminished when staff took the time to also provide verbal feedback.

Like the assessment processes, the clinical service organisation also proved to promote the importance of technical competence above, and often at the expense of, other aspects of the professional role. Much of the students' time is spent in referral services, with the clinicians attracted to work in such a technical and highly specialised service. The cases they see, and the tools they have at their disposal, are more advanced than those they are likely to encounter in first opinion, primary care practice where most will begin their career, and they are also rarely confined by budgets not covered by insurance. Whilst for some this gave them confidence, others raised concerns over the lack of transferrable skills they were gaining and their ability to tackle cases under real-world constraints. One, almost unanimous, effect of being in such a specialised environment, was the impact it had on the students' views of what it meant to be a successful veterinarian, with the implication being that, as a general practitioner, you could only be mediocre at best:

“...going through rotation where it is so specialised, it makes you realise you need to be specialised. Not necessarily in a certain aspect of medicine, but at least in a species...I'd rather be good at one thing than mediocre at all of it.” (F14)

Not all the implications of working in a referral setting were negative however, and being in an environment where everyone, from senior clinicians to student nurses, was learning gave students confidence to ask for help when needed and ideas as to where to source information.

### ***Moderators of the hidden curriculum***

Relationships with individual clinicians as role models and with their rotation group were found not only to affect a students' enjoyment of the rotation experience but also acted as moderators of the hidden curriculum, having a bearing on the strength and direction of the professional attitude changes brought about by the mediators.

When choosing role models, students looked for those characteristics they already deemed important; for example, students for whom compassion and empathy were a key part of the clinical role looked for individuals who were able to display this in their day-to-day role. Other key characteristics consistently mentioned included enthusiasm, calmness, and approachability, particularly with respect to the students' learning. Perhaps unsurprisingly, in the light of the importance students placed on technical competence, if they were unable to pick a role model based on other non-cognitive characteristics, they often opted for those at the forefront of their respective field. Those students for whom lifestyle balance was a priority found it most difficult to find role models within the institution, and often looked outside the university to veterinarians they had encountered elsewhere.

Identification of suitable role models allowed students to feel safe in their learning environment and justified in their professional attitudes. Likewise, students were quick to recognise the importance of their rotation group to their IMR experience, providing help or, unfortunately, at times, acting as a source of anguish. On the whole, students took the opportunity to pick members of their rotation group, choosing either their friends or, more commonly, those who they knew they worked well with from the previous years of the course. On the rare occasion a student indicated they did not want to be in the same group as another individual, the individuals were usually friends and housemates who did not want to both live and work together during what they thought would be an intense period. Even when there was not a close bond between group members, there was recognition of how they assisted each other academically; however, for most groups, the role of their group went beyond this, providing individuals with emotional support. This was particularly important in instances when a student had received critical feedback from a member of staff on the non-technical aspects of their role, as the group helped reinforce the student's pre-existing attitude, dismissing the comments of the staff as inappropriate or incorrect.

## **Discussion**

### ***Principal findings and their meaning***

This study has established that those aspects of professionalism most prominent in students' minds following their interaction with the hidden curriculum during their clinical rotations were their technical competence and communication skills, which fits with the ranking of these aspects of professionalism in an earlier study (Roder et al

2012). Their views on compassion and empathy, autonomy and responsibility, and lifestyle ethic, and their importance to the professional role, were also affected as a result of their interactions with staff, students and animal owners. The assessment processes employed during rotations and the clinical service organisation communicated the messages of the hidden curriculum, acting as mediators and leading to observed and reported changes in students' views. The extent to which students were affected by these mediators appeared dependent on their ability to identify appropriate role models and their relationship with their rotation group, both of which emerged as moderators of the hidden curriculum.

As well as identifying the effects of the hidden curriculum of the clinical rotations on final year students at the RVC, this study has also identified different components of the hidden curriculum and their modes of action: the mediators and moderators. Categorisation as either a mediator or moderator is dependent not only upon whether the influence is a system (mediator) or related to individuals (moderator), but also by the level of consciousness the student has of their possible effect. Whilst students expect the clinicians to be potential role models, and are able to analyse their behaviour objectively, they have demonstrated little awareness of the effect of the clinical service organisation and its subtle yet continuous messages. In relation to the work of Portelli (1993) on the "hiddenness" of the hidden curriculum, this would suggest that the hidden curriculum can be, but does not have to be, hidden from the student, but whether it is recognised by them or not appears to affect whether it is likely to be characterised as a mediator (unrecognised) or moderator (recognised).

Of concern to students' developing views of professionalism is the subtle means by which systems such as the clinical service organisation and assessment processes contributed to the erosion of certain values in the group of students. In the past, the erosion of these values, and a general hardening of students, has been attributed to insufficient role modelling (Hojat et al., 2009). However, the evidence presented here suggests that role models are secondary to influences of the identified systems-related mediators. The clinical service organisation and assessment processes consistently promote and reward technical skills and knowledge, and students who wish to express compassion potentially hamper their own learning. Similar dilemmas have been reported in medical education (Hicks et al., 2001), with concerns raised over the impact this can have on the students' ethical growth if it is not appropriately addressed.

Although the students often used different terms from those identified by Castellani and Hafferty (2006), which were used in the survey to establish their view of professionalism, a majority of what was discussed could still be classified under the headings of technical competence and interpersonal competence. This is perhaps unsurprising considering, when surveyed, both students and staff consistently ranked these in the top two positions in terms of importance, indicating that they are at the forefront of everyone's minds (Roder et al., 2012). The students' increased focus on the importance of interpersonal competence post-rotations, and in particular the importance placed on client communication, mirrors the findings of Rhind et al. (2011) in their study on attributes considered important by recent veterinary graduates. What may be of concern here, however, is the lack of other aspects of professionalism referenced by the students during the interviews, indicating a somewhat narrow view of the subject. This

was particularly evident in those few for whom technical competence and professionalism were synonymous. Certain aspects of the professional role, including those pertaining to personal morality and the wider societal implications of being a member of a profession, such as the social contract and social justice, were barely acknowledged.

### ***Implications for practice***

It is known that assessment drives learning (Black and Wiliam, 1998), and that the hidden curriculum contributes much of what is learned (Jackson, 1968). Yet, despite this, the contribution of assessment to the hidden curriculum has been under-examined since the early work of Snyder (1970), and has been relatively unexplored in the clinical education literature. The comments made by the students in this study indicated two primary issues in relation to assessment and the hidden curriculum: firstly, the assessment processes determined what they considered important in rotations, and secondly, with regard to the professional role, students were left questioning staff competence in assessing the non-cognitive aspects of their professionalism.

Whilst practical skills and technical knowledge are assessed independently of one another, all other non-technical skills are branded together and assessed under the heading “professionalism”, a term already noted here as being widely undefined. In order to be considered effective, some understanding of what is being assessed under this heading is a necessity for both staff and students (Taras, 2005; Cantillon and Sargeant, 2008), particularly when using feedback to aid progression (Deci et al. 1999). Alongside this, the opportunity for what is being assessed within the clinical setting to



be observed by staff adds validity to the assessment in the eyes of the student. Direct observation of students in the clinical setting has been acknowledged as variable at best (Barrows, 1986), yet in order to accurately assess a student's competency in any task, the teacher needs to gather direct evidence of their current attainment (Cowie and Bell, 1999; Taras, 2005). Lack of direct observation limits the opportunities for meaningful feedback (Haber and Avins, 1994) and, for the student to value the assessment and any feedback given, the process needs to be linked to specific events directly observed by the assessor (Cantillon and Sargeant, 2008). In this regard, there was a stark contrast in this study between the way technical skills were well understood by both students and staff, and directly observed, and the way professional skills were poorly defined and understood, and only indirectly evidenced.

In addition to the assessment procedures, consideration should also be given to how clinical service organisations provide opportunities for the explicit teaching and role modelling of non-technical aspects of the professional role. Although it may be assumed that being immersed in the hospital environment, observing day-to-day interactions, students would naturally develop these skills, research into apprenticeships reveals that, unless explicitly taught, they are not just "picked up" (Burgin and Sadler, 2013). Of concern for veterinary education in this regard is the finding by Lane and Bogue (2010) that, despite recognising the importance of non-technical skills to the professional role, faculty showed very little recognition of their responsibility to teach them. Consideration must also be given as to how specialist service exposure is balanced with primary care experience and explicit recognition of primary care expertise (May 2015).

The hidden curriculum of a specialist block structure in rotations had a powerful influence on the students' views of what constituted "a good vet".

### ***Strengths and limitations***

As a case study of the hidden curriculum of a single institution, this project benefitted from an in-depth analysis of the complex interactions that take place in a real world setting. However the limits to generalisability of such findings must also be acknowledged. Whilst naturalistic generalisation would support the view that the results of this study could be transferred to other veterinary and medical schools whose curriculum and, in particular, clinical year follows a similar structure (Gomm et al., 2000), the concept of Middle Ground Theories (Merton, 1967) allows the findings from this research to be used as a starting point or "lens" from which to investigate the hidden curriculum in other settings.

Another criticism of case study methodology is that the researcher's personal subjective feelings about the case may influence the findings (McLeod, 2008), something also recognised as a possible limitation to using researcher-led observations and interviews as methods of data-collection (Cohen et al., 2011; Robson, 2011). Golden-Biddle and Locke (1993), however, suggest that such biases should not exist providing the research is conducted rigorously, basing their criteria for such on the researchers ability to demonstrate authenticity (that the researcher was there and their description of events is genuinely related to what they observed), plausibility (that there is a link between the world observed and the reader's own world), and criticality (to make readers re-examine their underlying assumptions).

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